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

May 12, 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 05000334/2009002 AND 05000412/2009002 AND FENOC CONFIRMATORY ORDER (EA-07-199)

Dear Mr. Sena:

On March 31, 2009, 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 April 14, 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. However, two licensee-identified violations, which were determined to be of very low safety significance, are listed in this report. NRC is treating these violations as non-cited violations (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the violations and because they are entered into your corrective action program. If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Beaver Valley Power Station.

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: Integrated Inspection Report 05000334/2009002; 05000412/2009002
w/Attachment: Supplemental Information

cc w/encl:
J. Hagan, President and Chief Nuclear Officer
J. Lash, Senior Vice President of Operations and Chief Operating Officer
D. Pace, Senior Vice President, Fleet Engineering
K. Fili, Vice President, Fleet Oversight
P. Harden, Vice President, Nuclear Support
G. Halnon, Director, Fleet Regulatory Affairs
Manager, Fleet Licensing Company
K. Ostrowski, Director, Site Operations
C. McFeaters, Director, Maintenance
M. Manoleras, Director, Engineering
R. Brosi, Director, Site Performance Improvement
C. Keller, Manager, Site Regulatory Compliance
D. Jenkins, Attorney, FirstEnergy Corporation
M. Clancy, Mayor, Shippingport, PA
D. Allard, Director, PADEP
C. O'Claire, State Liaison Officer, State of Ohio
Z. Clayton, EPA-DERR, State of Ohio
Director, Utilities Department, Public Utilities Commission, State of Ohio
R. Curtis, Director, Radiological Toxics and Indoor Air Program, State of West Virginia
J. Lewis, Commissioner, Division of Labor, State of West Virginia
W. Hill, Beaver County Emergency Management Agency
J. Johnsrud, National Energy Committee, Sierra Club

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

Distribution w/encl:
S. Collins, RA
M. Dapas, DRA
D. Lew, DRP
J. Clifford, DRP
R. Bellamy, DRP
S. Barber, DRP
C. Newport, DRP
D. Werkheiser, DRP, SRI
D. Spindler, DRP, RI
P. Garrett, DRP, OA
S. Campbell, RI OEDO
R. Nelson, NRR
N. Morgan, NRR, PM
R. Guzman, NRR Backup
ROPreportsResource@nrc.gov
Region I Docket Room (with concurrences)

DOCUMENT NAME:G:\DRP\BRANCH6\+++BEAVER VALLEY\BV INSPECTION REPORTS & EXIT NOTES\BV INSPECTION REPORTS 2009\BVREPORT IR2009-002.DOC

SUNSI Review Complete: RRB (Reviewer's Initials) **ML091320527**

After declaring this document "An Official Agency Record" it **will** be released to the Public.

To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure,"**E**" = Copy with ttachment/enclosure "**N**" = No copy

OFFICE	RI/DRP		RI/DRP			
NAME	DWerkheiser/RRB for		RBellamy/ RRB			
DATE	05/09/09		05/ 12 /09			

OFFICIAL RECORD COPY

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.	50-334, 50-412
License Nos.	DPR-66, NPF-73
Report Nos.	05000334/2009002 and 05000412/2009002
Licensee:	FirstEnergy Nuclear Operating Company (FENOC)
Facility:	Beaver Valley Power Station, Units 1 and 2
Location:	Post Office Box 4 Shippingport, PA 15077
Dates:	January 1, 2009 through March 31, 2009
Inspectors:	D. Werkheiser, Senior Resident Inspector D. Spindler, Resident Inspector T. Moslak, Health Physicist G. Wright, Project Engineer, Region 3
Approved by:	R. Bellamy, Ph.D., Chief Reactor Projects Branch 6 Division of Reactor Projects

TABLE of CONTENTS

SUMMARY OF FINDINGS

IR 05000334/2009002, IR 05000412/2009002; 01/01/2009 – 03/31/2009; 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. Two licensee identified violations 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

Two violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status:

Unit 1 began the inspection period at 100 percent power, and remained at 100 percent power for the inspection period.

Unit 2 began the inspection period at 100 percent power. On February 20, the unit was down-powered to 82 percent for planned main condenser waterbox cleaning and returned to full power on February 22. The unit remained at 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Seasonal Susceptibility

a. Inspection Scope (1 sample)

External Flooding Readiness

The inspectors evaluated FENOC's preparation and protection from the effects of external flooding conditions for Unit 1 and Unit 2. This evaluation included a review of the Updated Final Safety Analysis Report (UFSAR) and applicable flood-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 protection from the most probable flood, as well as actions to address seasonal Ohio River water levels that could potentially impact safety-related equipment. Specifically, the inspectors reviewed licensee actions on multiple occasions following entry into the abnormal operating procedure (AOP) 1/2OM-53C.4A.75.2, "Acts of Nature - Flood,", which included backwash of river and service water strainers that supply cooling to the Unit 1 and 2 safety-related charging pumps. Additionally, the inspectors reviewed recent FENOC inspection results, including flood barrier inspections, and verified that previously identified deficiencies had been entered into the corrective action program for resolution.

b. Findings

No findings of significance were identified.

.2 Adverse Weather

a. Inspection Scope (3 samples)

January 12: Extreme Cold Weather

The inspectors evaluated FENOC's preparation, protection, and actions from the effects of extreme cold weather experienced at Unit 1 and Unit 2. The inspectors' efforts focused on review of specific unit actions based on actual environmental conditions and mitigating actions to protect risk-significant equipment. The inspectors performed walkdowns of each unit's safety-related structures, areas susceptible to freezing, and emergency response facilities to verify adequate protection to safety-related equipment.

February 11 – 12: High Winds

The inspectors evaluated FENOC's preparation, protection, and actions from the effects of sustained high winds to Unit 1 and Unit 2 during actual high wind conditions. The inspectors' efforts focused on review of specific unit actions based on actual environmental conditions and adherence to mitigating procedures. The inspectors performed walkdowns of each unit's external structures and emergency response facilities to verify the adequacy of protection from high winds, readiness for use, and continuity of power. Areas which could potentially impact safety-related equipment were also walked down. The inspectors reviewed expected licensee actions based on abnormal operating procedure (AOP) 1/2OM-53C.4A.75.1, "Acts of Nature – Tornado or High Winds." Average wind speeds exceeded 30 miles per hour, with gusts up to 70 miles per hour. No damage was observed to site equipment.

February 12 – 14: High Ohio River Level

The inspectors evaluated FENOC's preparation, protection, and actions from the effects of external flooding conditions for Unit 1 and Unit 2 during actual high Ohio River water conditions. This evaluation focused on review of specific unit actions based on actual environmental conditions. The inspectors performed walkdowns of the affected unit's external structures and intake bay cubicles to verify the adequacy of protection from the high river water that could potentially impact safety-related equipment. The inspectors reviewed expected licensee actions based on abnormal operating procedure (AOP) 1/2OM-53C.4A.75.2, "Acts of Nature – Flood."

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdowns (71111.04Q)

a. Inspection Scope (3 samples)

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:

- On January 7, Unit 1 Emergency Electrical Bus 1DF during the performance of 1OST-36.22A Diesel Generator, No.1 Simulated Undervoltage Start Signal;
- On March 6, Unit 1 'B' Quench Spray Chemical Injection System during the performance of 1OST-13.10A, "Chemical Injection System Valve and Pump Operability Check Train 'A'"; and
- On March 9, Unit 2, Low Head Safety Injection during the performance of 2OST-11.1, Rev. 25, "Low Head Safety Injection Pump [2SIS*P21A] Test."

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. 18. 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 1, Diesel Generator 1 Room (Fire Area DG-1);
- Unit 1, Auxiliary FW & QS Pumps (Fire Area QP-1);
- Unit 1, Solid Waste (Fire Area PA-1E);
- Unit 2, Fan Room (Fire Area CB-5); and
- Unit 2, Main Steam Valve Room/Emergency Switchgear Vent Room (Fire Areas MS-1 & CV-4).

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope (2 samples)

The inspectors reviewed two samples of internal flood protection measures for equipment in the Unit 1 Primary Auxiliary Building, specifically the 718 and 734 foot levels and the surveillance test of intake structure flood control doors. 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. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

.1 Annual Sample Review (7111.07A)

a. Inspection Scope (1 sample)

The inspectors reviewed a thermal performance test associated with the Unit 1, 1EE-E-1A, 'A' Diesel Generator Lubrication Oil Heat Exchanger, conducted on October 21, 2008, in accordance with 1BVT-1.30.3, "River Water Heat Exchanger Performance Program," Rev.5. The review included an assessment of the testing methodology and verified consistency with Electric Power Research Institute document NP-7552, "Heat Exchanger Performance Monitoring Guidelines," December 1991, and Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." The inspectors reviewed inspection results, related condition reports and component leak test results against applicable acceptance criteria.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope (1 sample)

The inspectors observed one sample of Unit 1 licensed operator classroom training on January 30 for Just-in-time (JIT) for 1RST-2.5, Rev. 9, "Moderator Temperature Coefficient Determination." The inspectors evaluated licensed operator performance regarding command and control, implementation of normal, annunciator response, abnormal operating procedures, communications, and technical specification review and compliance. 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 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.

- MR category (a)(1) evaluation and functional failure review for System 47 (Containment) as documented in CRs 09-53372 and 09-53197; and

- MR evaluation for 2SIS-P21A, ('A' Low Head Safety Injection Pump) for exceeding the maximum forced loss rate, as documented in CR 08-48966. As part of the increased monitoring, 2OST-11.1, "Low Head Safety Injection Pump [2SIS*P21A] Test," was performed and the results reviewed for adverse trends.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control (71111.13)

a. Inspection Scope (5 samples)

The inspectors reviewed the scheduling and control of five 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:

- On February 11, Unit 1 coordination and risk associated with ΔT-Tave channel operational checks and Power Range Nuclear Instrumentation (N-41) calibrations;

- On February 16, Unit 2, coordination of activities and risk involving intake bay cleaning, planned downpower, and feedwater maintenance;

- On February 19, activities involving solid state protection system testing concurrent with both main feedwater recirculation lines isolated for maintenance;

- Work week March 9 - 16, Unit 1 and 2, review of changed and emergent work coordination for that week's activities, including a review of station processes and procedures for risk determination; and

- On March 27, review of scheduled and emergent maintenance activities for Unit 1 concurrent with the "B" Reactor Plant River Water Pump out of service due to mechanical seal failure (CR 09-56071).

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (7 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 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 seven samples of the following issues:

- On January 16, licensee's IOD and POD regarding safety-related River Water (RW) pinhole leak at common header discharge from Unit 1 'A' train recirculation spray heat exchangers (CR 09-52089);

- On January 19, licensee's IOD regarding relay failures in safety-related battery charger 1-3 (CR 09-52269) and on January 27 reviewed subsequent POD to address Ametek 10CFR21 notification (EN 44805) documenting additional potential relay defects (CR 09-52631);

- On January 28, Unit 2, deficiency tag (200324338) for "B" Leak Collection Normal Exhaust Fan 2HVS-FN263B rotating backwards while in the standby condition, and extent of condition for other safety-related fans;

- On February 11, Unit 1, licensee's IOD of Tave Channel III after operators identified a failed main control board Tave indicator while power range nuclear instrument testing (N-41) was in progress (CR 09-53401);

- On February 21, Unit 2, licensee's IOD for battery charger 2-2 (BAT-CHG-2-2) equalizing potentiometer failure to respond to adjustment (CR 09-53927);

- On March 5, Unit 1, licensee's IOD, POD, and corrective actions for a gas void identified in the "A" Quench Spray System bypass line (CR 09-54676); and

- On March 26, Unit 1, licensee's IOD and POD for pinhole leaks in river water piping for the 'A' Control Room Emergency Air Conditioning system (CR 09-56092, 56095, and 56160).

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 modification (TMOD) based on risk significance. The TMOD was reviewed against the system design basis documentation, including the UFSAR and the TS. The inspectors verified the TMOD was implemented in accordance with Administrative (ADM) Procedure, 1/2-ADM-2028, "Temporary Modifications," Rev. 9. Documents reviewed are listed in the Attachment.

- TMOD ECP 09-0051, Unit 2 Condenser Vacuum Pressure Switch (BV-2TMA-PS63-1LV) Jumper Installation and removal for Annunciator Window A6-5G (WO 200354857).

b. Findings

No findings of significance were identified.

.2 Permanent Plant Modifications

a. Inspection Scope (1 permanent plant modification sample)

The inspectors evaluated the design basis impact of the modification listed below. The inspectors reviewed the adequacy of the associated 10 CFR 50.59 screening, 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 also verified the post-modification testing was satisfactorily accomplished to ensure the system and components operated consistent with their intended safety function. Documents reviewed are listed in the Attachment.

- Unit 2, ECP 05-0059-02, 125vdc Battery Charger [BAT-CHG-2-2] replacement.

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 January 28, 1BVT-1.39.17, Rev. 4,"Station Battery Charger [BAT-CHG 1-4A and BAT-CHG 1-4B] Load Test" after relay replacements in battery charger 1-4 (WO 200342744, 200287081);

- On February 5, Solid State Protection System isolation card replacement and retest to correct recurrent multiple unexpected alarms from the Unit 2 annunciator system as documented in CR 08-50618 (WO 200353737);

- On February 12, 1MSP-6.22-I, Rev. 13, "Delta-T Tave Protection Instrument Channel III Test (T-RC432)" after indicator repairs to Channel III Tave;

- On March 13, Unit 2, 2OST-15.1, Rev. 41, "Primary Cooling Water Pump [2CCP*P21A] Test" after preventive maintenance "A" primary component cooling water pump [2CCP-21A]; and

- On March 19, Unit 1, New Fuel Elevator carriage wheel replacement and installation (WO 200330936).

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

.2 Unit 1 Refueling Outage Preparations (1R19)

a. Inspection Scope (1 partial sample)

The inspectors observed the following selected Unit 1 pre-outage activities to determine licensee readiness regarding shutdown safety functions (e.g. reactor decay heat removal, spent fool pool cooling, and containment integrity) were appropriately planned. The inspectors reviewed procedures and/or observed selected activities associated with the Unit 1 refueling outage. Documents reviewed are listed in the Attachment.

- Pre-Outage Shutdown Safety (Defense-in-Depth) review;
- New-fuel elevator cable replacement and initial pre-operational checks;
- Spent Fuel Pool-side fuel assembly upender cable inspection;
- New fuel receipt and Inspection; and
- Tave/Power coastdown implementation (ECP 09-0035-001).

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (6 samples: 1 leak rate, 2 in-service testing and 3 routine.)

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 six activities were reviewed:

- On January 7, 1OST-36.22A, Rev. 9, "Diesel Generator No. 1 Simulated Undervoltage Start Signal";
- On January 30, 1RST-2.05, Rev. 9, "Moderator Temperature Coefficient Determination";
- On January 30, 3BVT-1.44.05, Rev. 3, "Control Room Envelope Inleakage Testing" final vendor report (also section 4OA3.1);
- On March 3, 2OST-6.2A, Rev.26, "Computer Generated Reactor Coolant System Water Inventory Balance";
- On March 6, 1OST-13.10A, Rev. 21, "Chemical Injection System Valve and Pump Operability Check – Train A"; and
- On March 25, 1OST-30.12B, Rev. 26, "Train B Reactor Plant River Water System Full Flow Test" using the 'C' river water pump.

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 simulator evaluation conducted on January 27, 2009. Senior licensed-operator performance regarding event classifications and notifications were specifically evaluated. The inspector 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 of the event classification. 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. 2, "NRC EPP Performance Indicator Instructions;"
- 1/2-ADM-1111.F01, Rev. 2, "Emergency Preparedness Performance Indicators Classifications/Notifications/PARS;"
- EPP/I-1a/b, Rev. 11, "Recognition and Classification of Emergency Conditions;"
- 1/2-EPP-I-2, Rev. 30, "Unusual Event;"
- 1/2-EPP-I-3, Rev. 28, "Alert;"
- 1/2-EPP-I-4, Rev. 28, "Site Area Emergency;" and
- 1/2-EPP-I-5, Rev. 29, "General Emergency."

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS1 Access Control to Radiological Significant Areas (71121.01)

a. Inspection Scope (10 samples)

During the period February 9 - 12, the inspector conducted the following activities to verify that the licensee was properly implementing physical, administrative, and engineering controls for access to locked high radiation areas and other radiological controlled areas in Unit 1 and Unit 2. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, relevant TS, and the licensee's procedures. This inspection activity represents completion of 10 samples relative to this inspection area.

Plant Walkdown and RWP Reviews

- The inspector identified exposure significant work activities in the Unit 1 and Unit 2 primary auxiliary buildings. Specific work activities included Unit 1charging pump maintenance and spent fuel pool filtration system repairs, and charging pump maintenance in Unit 2. The inspector reviewed radiation survey maps and radiation work permits (RWP) associated with these activities to determine if the associated controls were acceptable.

- The inspector toured accessible radiological controlled areas in Unit 1 and Unit 2. With the assistance of a radiation protection technician, the inspector performed independent surveys of selected areas to confirm the accuracy of survey maps and the adequacy of postings.

- In evaluating the RWPs, the inspector reviewed electronic dosimeter dose/dose rate alarm set points to determine if the set points were consistent with the survey indications and plant policy. The inspector verified that the workers were knowledgeable of the actions to be taken when the dosimeter alarms or

malfunctions for tasks being conducted under selected RWPs. Work reviewed included RWP 109-1003 (1-CH-P-1C preventative maintenance), RWP 109-1027 (dislodging resin blockage in the spent fuel pool ion exchanger), and RWP 209-2021 (Unit 2 maintenance activities).

- The inspector reviewed RWPs and associated instrumentation and engineering controls for potential airborne radioactivity areas located in Unit 1 and Unit 2. The inspector confirmed that no worker received an internal dose in excess of 10 mrem due to airborne radioactivity when performing tasks in these areas during 2008.

Problem Identification and Resolution

- The inspector reviewed elements of the licensee's corrective action program related to controlling access to radiological controlled areas, completed since the last inspection of this area, to determine if problems were being entered into the program for resolution. Included in this review were the dose and dose rate alarm reports and personnel contamination event reports to determine if regulatory limits or performance indicator criteria were exceeded.

- The inspector reviewed relevant Condition Reports, and associated corrective actions, recent Nuclear Quality Assessment field observation reports, and the third and fourth quarter 2008 Nuclear Oversight Performance Reports to evaluate the threshold for identifying, evaluating, and resolving problems in implementing access controls.

Jobs-In-Progress

- The inspector observed aspects of various ongoing activities to confirm that radiological controls, such as required surveys, area postings, job coverage, and job site preparations were conducted. The inspector verified that personnel dosimetry was properly worn and that workers were knowledgeable of work area radiological conditions. The inspector attended a Radiation Protection department daily meeting to assess the planning for these scheduled jobs.

High Risk Significant - LHRA and VHRA Controls

- Keys to locked high radiation areas (LHRA), stored at the control point were inventoried and accessible LHRAs were verified to be properly secured and posted during plant tours.

- The inspector discussed with radiation protection supervision the adequacy of recently implemented fleet wide procedures for controlling access to LHRAs and very high radiation areas (VHRA). The procedures NOP-OP-4101, Access Controls for Radiologically Controlled Areas, and NOP-09-4107, Radiation Work Permit, were reviewed. The inspector verified that any changes to the physical and administrative controls did not substantially reduce the effectiveness and level of worker protection, and evaluated the adequacy of prerequisite communications and authorizations.

Radiation Worker Performance

- The inspector observed radiation worker and radiation protection technician performance during Unit 2 charging pump maintenance. The inspector determined that the individuals were aware of current radiological conditions, access controls, and to the potential radiological hazards that the work involved.

- The inspector reviewed condition reports, related to radiation worker and radiation protection errors, and personnel contamination event reports to determine if an observable pattern traceable to a similar cause was evident.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope (5 samples)

During the period February 9 - 12, the inspector conducted the following activities to verify that the licensee properly implemented operational, engineering, and administrative controls to maintain personnel exposure as low as is reasonably achievable (ALARA) for tasks being conducted during the 2R13 (fall 2008) refueling outage and the current operating cycles. Additionally, the inspector reviewed the ALARA measures to be implemented during the upcoming Unit 1(1R19) spring 2009 refueling outage. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and the licensee's procedures. This inspection represents completion of five samples relative to this inspection area.

Radiological Work Planning

- The inspector reviewed pertinent information regarding cumulative exposure history, current exposure trends, and ongoing activities to assess current performance and outage exposure challenges. The inspector determined the site's 3-year rolling collective average exposure.

- The inspector reviewed the work scheduled during the inspection period, the associated ALARA Plans, and the associated work activity dose estimates. Scheduled work reviewed included Unit 1 charging pump maintenance (RWP 109-1003) and cleaning the Unit 1spent fuel pool ion exchanger strainers (RWP 109-1027).

- The inspector evaluated the adequacy of a recently implemented corporate procedure, NOP-OP-4005, associated with maintaining worker dose ALARA and with estimating and tracking work activity exposures.

- The inspector reviewed the 2R13 dose summary reports, related post-job ALARA reviews, and the post-outage ALARA report, detailing worker estimated and actual exposures, for the fall 2008 refueling outage. Through this review, the inspector determined that dose was appropriately managed, ALARA measures were effective, and deviations between actual and forecasted dose appropriately evaluated by the Station ALARA Managers' Committee.

- The inspector evaluated the 2R13 exposure mitigation requirements specified in RWPs and ALARA Plans, and compared actual worker cumulative exposure with estimated dose for tasks associated with these activities. The inspector reviewed in detail those work activities whose estimated cumulative exposure exceeded 5 person-rem. Jobs reviewed included reactor head inspection/repair (RWP 208-5058), steam generator platform support activities (208-5017), and scaffolding installation/removal (RWP 208-5039).

- The inspector evaluated the departmental interfaces between radiation protection, engineering, operations, and maintenance crafts to identify missing ALARA program elements and interface problems, in monitoring and controlling dose allocations. The evaluation was accomplished by interviewing the Manager-Radiation Protection, the Senior Nuclear Specialist-ALARA, and the Supervisor, Radiation Protection Services; reviewing Site Managers' ALARA Committee meeting minutes; reviewing Nuclear Oversight field observation reports; and attending 1R19 readiness review meetings, and a Site Managers' ALARA Committee meeting for upcoming refueling activities.

Verification of Dose Estimates and Exposure Tracking Systems

- The inspector reviewed the assumptions and basis for the annual site collective exposure estimate, the 2R13 outage ALARA performance, and the 1R19 refueling outage dose projection.

- The inspector reviewed the licensee's exposure tracking system (HIS-20) to determine whether the level of detail, exposure report timeliness and dissemination was sufficient to control collective exposures and equalize personnel exposure. Included in this review were departmental dose compilations, specific RWP dose summaries, and individual exposure records.

Job Site Inspection and ALARA Control

- The inspector observed in progress maintenance and operational activities being performed for Unit 1 charging pump maintenance and fuel pool ion exchanger troubleshooting to verify that radiological controls, such as required surveys, job coverage, and contamination controls were implemented. Through interviews, workers were found to be knowledgeable of work area radiological conditions. The ALARA Plan for cleaning the Spent Fuel Pool strainers (AP 09-1-49) was reviewed to determine if appropriate exposure and contamination controls were implemented.

- The inspector reviewed the exposure of individuals in selected work groups, including mechanical maintenance, radiation protection, and electrical maintenance to determine if supervisory efforts were being made to minimize and equalize dose among the workers.

Declared Pregnant Workers (DPW)

- The inspector reviewed the procedural controls implemented for declared pregnant workers and determined that no DPWs performed work in the site's radiological controlled areas during 2008.

Problem Identification and Resolution

- The inspector reviewed elements of the licensee's corrective action program related to implementing radiological controls to determine if problems were being entered into the program for timely resolution

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

a. Inspection Scope (3 samples)

During the period March 23 - 26, the inspector conducted the following activities to verify that the licensee was properly maintaining the gaseous and liquid processing systems to ensure that radiological releases were properly mitigated, monitored, and evaluated with respect to public exposure. Implementation of these controls was reviewed against the criteria contained in the 10 CFR 20 and 50, TS, the Off-site Dose Calculation Manual (ODCM), and the licensee's procedures. This inspection activity represents completion of three samples relative to this inspection area.

The inspector reviewed the 2007 (and data for the 2008) Annual Radiological Effluent Release Reports to verify that the effluent programs were implemented as required by the ODCM. As part of this review, changes made to the ODCM were evaluated to determine if the changes affected the licensee's ability to maintain effluent doses ALARA.

The inspector walked down the major components of the Unit 1 and Unit 2 gaseous and liquid effluent monitoring systems, with the cognizant engineers, to verify that the system configuration complied with the FSAR description, and to evaluate equipment material condition.

The inspector reviewed the relevant effluent monitoring procedures, including the SPING-4 Monitor (1HPP-4.02.010, Rev 2), the SA-9/SA-10 Noble Gas Monitor (1-HPP-4.02-.008, Rev 2), and the DRMS, Process Monitoring Subsystem procedure (2-HPP-4.02.021, Rev 13), and observed technicians collect weekly particulate/ iodine samples and noble gas grab samples from the following effluent radiation monitors:

RM-1GW-109, Process Vent
RM-1VS-109. Auxiliary Building Vent
RM-1VS-110, SLCRS (Supplemental Leak Collection & Release System)
RM-1VS-111, Auxiliary Building Noble Gas
RM-1VS-112, SLCRS Noble Gas
2HVS-RQ101B, Ventilation Vent
2HVS-RQ109B, SLRS
2RMQ-RQ303B, Waste Gas Storage Vault Vent
2RMQ-RQ301B, Decontamination Building Vent

2HVS-RQ109A, Wide Range Gas Monitor (SLCRS-filtered)
2HVL-RQ112, Condensate Polishing Building Vent

The inspector reviewed the most current Unit 1 and Unit 2 liquid and gaseous effluent monitor functional test results to verify that the associated pumps/isolation valves and fans/isolation dampers, respectively, were operable. Operations Surveillance Tests (OST) reviewed were 1OST- 43.9 for Unit 1 and 2OST-43.3 for Unit 2 liquid effluent pathways. 1BVT1.16.10 and 2BVT-1.16.10 were reviewed for gaseous pathways.

The inspector reviewed the air cleaning system test surveillance results for HEPA (High Efficiency Particulate Absolute) and charcoal filtration systems installed in Unit 1 and Unit 2, to ensure the components met their acceptance criteria. The inspector confirmed that the air flow rates were consistent with the ODCM values.

The inspector observed the preparation of a liquid discharge permit. On March 23, discharge permit RWDA-L-5522 was prepared for a Unit 2 steam generator condensate test tank (2SGC-TK23A). In preparation for discharging the 23A tank, the inspector observed the technician evaluate sample data, calculate discharge concentrations, and determine the radiation monitor (2SGC-RQ100) alarm set points.

The inspector reviewed monthly dose projections for liquid and gaseous effluents performed during the past 15 months to verify that the effluent was processed and released in accordance with ODCM requirements. The inspector confirmed that compensatory sampling was performed when installed monitors were out of service. The inspector confirmed that no ODCM performance indicator criteria was exceeded for this time period.

The inspector reviewed the calibration records and daily quality control records for the counting room gamma spectroscopy instrumentation (Detectors Nos. 1, 2, 3, 6 & 7) and the scintillation counter to determine if the required lower limits of detection (LLD) were achievable and that the instruments were properly maintained.

The inspector reviewed the results of the licensee's inter-laboratory quarterly cross check program for 2008, to verify the quality and accuracy of effluent sample analyses performed by the licensee.

The inspector reviewed the Validation and Verification (V&V) results for the radiological effluent dose calculation software (i.e. LIQDIS and GASDIS), used for the generation of discharge permits, to ensure that the software currently in use provides accurate dose projections.

The inspector reviewed relevant Condition Reports, a Nuclear Oversight Assessment Report (MS-C-08-08-02), and a SnapShot Self-Assessment Report (BV-SA-08-085) to evaluate the licensee's threshold for identifying, evaluating, and resolving problems in implementing the ODCM and ground water protection program.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors sampled licensee submittals for Performance Indicators (PI) listed below for both Unit 1 and Unit 2. The inspectors reviewed Licensee Event Reports, condition reports, portions of various plant operating logs and reports, and PI data developed from monthly operating reports. Methods for compiling and reporting the PIs were discussed 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.

.1 Cornerstone: Initiating Events (6 samples)

Unplanned Scrams per 7000 Critical Hours [IE01] (Unit 1 & Unit 2)
The inspectors reviewed the PI for unplanned scrams per 7000 critical hours, to verify that scrams had been properly reported. The inspectors reviewed 12 months of data (January 2008 to December 2008) for unplanned scrams.

Unplanned Transients per 7000 Critical Hours [IE03] (Unit 1 & Unit 2)
The inspectors reviewed the PI for unplanned power changes per 7000 critical hours, to verify that power changes greater than 20 percent had been properly reported. The inspectors reviewed 12 months of data (January 2008 to December 2008) for power changes.

Unplanned Scrams with Complications [IE04] (Unit 1 & Unit 2)
The inspectors reviewed the PI for scrams that required additional operator actions, to verify this element had been properly reported. The inspectors reviewed 12 months of data (January 2008 to December 2008) for unplanned scrams.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152 – 3 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 Semi-Annual Trend Review (71152)

a. Inspection Scope (1 sample)

The inspectors reviewed site trending results for the time period June through December 2008, 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, "Condition Report Process", and NOBP-LP-2018, "Integrated Performance Assessment /Trending." The inspectors also reviewed quarterly Quality Assurance reports and issues captured in the Activity Tracking database (Notifications) to identify issues and trends to evaluate during the inspection.

b. Findings and Observations

No findings of significance were identified. The licensee has also begun trending condition reports with cause evaluation codes of limited-apparent, full-apparent, and root cause into apparent cross-cutting precursor matrixes. The licensee has identified areas for improvement (i.e. procedure compliance) based on this effort.

.3 Annual Sample Review (71152)

Beaver Valley Power Station Annual Safety Culture Assessment

a. Inspection Scope (1 sample)

The inspectors selected the 2008 annual Safety Culture Assessment (BV-PA-08-127) and management assessment process for detailed review. This review utilized guidance contained in NOBP-LP-2501, "Safety Culture Assessment" and NOBP-LP-2502, "Safety Culture Monitoring" and focused on the adequacy and appropriateness of corrective actions. The 2008 Safety Culture Report and 2008 safety conscious work environment (SCWE) surveys were reviewed for trends. The inspectors also attended various licensee discussions regarding the station culture assessment and development of corrective actions.

b. Findings and Observations

No findings of significance were identified. The inspectors noted that the overall statistical rating was high, indicating a positive safety culture. The licensee management team downgraded one of eight assessment areas based on group discussions in each area and noted areas for improvement. The overall assessment of station safety culture appeared to be consistent with inspector observations. Issues identified were documented in condition reports.

Inspection of Unit 1 Nuclear Fuel Handling Cables

a. Inspection Scope (1 sample)

The inspectors reviewed the adequacy and appropriateness of corrective actions to address a fuel handling cable failure of the spent fuel pool side upender system during the last Unit 1 refueling outage (see report 05000334/2007005). The inspectors reviewed condition report CR 07-28471, which documented the cable failure, focusing on corrective actions and extent of condition regarding the adequacy of inspection of other fuel handling cables, particularly at Unit 1. The inspectors verified the licensee established and implemented adequate work instructions and acceptance criteria to inspect the fuel transfer system cables. Work activities were monitored during selected fuel handling cable inspections and records reviewed. Documents that were reviewed for this inspection are located in the Attachment.

b. Findings and Observations

No findings of significance were identified. The inspectors observed that procedures and work inspections included references and acceptance criteria specified by industry standards (ANSI B30.2-1976) and that persons qualified in this standard conducted the inspection. All fuel handling cables were inspected. One cable required replacement (containment-side upender); two cable sets were replaced at the licensee's discretion (new fuel elevator, fuel manipulator crane).

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

The inspectors performed three event follow-up inspection activities. Documents reviewed for this inspection activity are listed in the Supplemental Information attached to this report.

Review of Licensee Event Reports (LERs) (3 samples)

.1 (Closed) LER 05000334,412 / 2008-001-00. Control Room Envelope Air Intake During Normal Operation Higher than Assumed In Design Basis Accident Dose Calculations

This LER discussed the results of Control Room Envelope (CRE) tracer gas in-leakage testing completed on November 10, 2008 for both units, which identified instances of air intake values above the assumptions used for calculated dose during certain design basis accidents (DBA), as described in the UFSAR. The licensee determined this represented an inadequate CRE boundary for a period of time greater than allowed by TS 3.7.10. The separate Control Room Emergency Ventilation System (CREVS) was not affected. The licensee evaluated the higher in-leakage impact and determined that the regulatory limit for exposure would not be exceeded following any DBA. The inspectors reviewed this LER, the results of the tracer-gas testing, and corrective actions taken. The inspectors concluded that FENOC had discovered this issue during surveillance testing, entered the issue into their corrective action program (CR 08-49260) and took immediate compensatory actions. However, the cause of excessive in-leakage was determined to be in part due to a degraded intake purge damper, which was reasonability within the licensee's ability to foresee, prevent, and correct prior to this discovery. The licensee also took actions to correct the cause of the in-leakage.

The failure to comply with TS 3.7.10 constitutes a violation of very low significance. The enforcement aspects of this finding are discussed in Section 4OA7.1. No other findings were identified. This LER is closed.

.2 (Closed) LER 05000412/2008-002-00. Containment Air Lock Equalization Valve Inadvertently Left Open Following Routine Containment Entry

This LER discussed the sequence that lead to an outer containment air lock valve being left open. On September 25, 2008 during the performance of 2OST-47.1 "Containment Air Lock Door Test," 2PHS-111 (Manual Equalizing Valve for the Outer Air Lock Door) was found open and out of the normal position. Prior to this on September 21, 2008, a team of three maintenance personnel entered the containment air lock at Unit 2 to perform maintenance on the containment sump pump. The team completed the maintenance and exited the containment approximately 71 minutes later. When 2PHS-111 was discovered open, the licensee took immediate action to close the valve. The purpose of this valve is to equalize the pressure from the air volume between the air lock doors to atmosphere. Because this valve bypasses the outer door, when it is open, it renders the outer door inoperable as a primary containment boundary.

The NRC reviewed this event when it occurred, and because the inner airlock door was closed and operable, primary containment remained intact. This failure to comply with TS 3.6.2 constitutes a violation of very low significance. The enforcement aspects of this finding are discussed in Section 4OA7.2. No other findings were identified. This LER is closed.

.3 (Closed) LER 05000412 / 2008-003-00. Low Head Safety Injection Pump Inoperable Longer than Allowed by Technical Specification

This LER discussed issues with the Unit 2 'A' Low Head Safety Injection (LHSI) pump which required extending work beyond the TS 3.5.2 allowed out-of-service time. The licensee was granted a notice of enforcement discretion (NOED) on October 22, 2008 for an additional 36 hours to not comply with TS 3.5.2 Action B in order to allow time to complete repairs. The unit was shutdown before the additional 36 hours expired because repairs could not be completed in time. The licensee determined the cause was not recognizing critical dimensions and dedication process of the wear ring anti-rotation lug machine, resulting in continued rotational interference. This issue was also reviewed and documented in report 05000412/2008005.

The inspectors reviewed this LER and the results of the licensee's root cause. The inspectors concluded that FENOC had maintained and tested the 'A' LHSI pump in accordance with industry standards. The inspectors further concluded that the failure to complete repairs within the NOED extension was not foreseeable based on available documentation. The inspectors reviewed the LER and no findings of significance were identified and no violation of NRC requirements occurred. FENOC documented this event in corrective action program CR 08-48160. No other findings were identified. This LER is closed.

4OA5 Other

.1 Quarterly Resident Inspector Observations of Security Personnel Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to verify that the activities were consistent with FENOC security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours. Specific examples include:

- Observed operations within the central and secondary alarm stations;
- Toured selected security towers and security officer response posts;
- Observed security force shift turnover activities; and
- Reviewed security logs and corrective action program documents which discussed security issues.

Quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. These observations were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.2 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

a. Inspection Scope

The inspectors reviewed the preliminary report for the December 2008 INPO plant assessment of Beaver Valley Power Station. The inspectors reviewed the report to ensure that issues identified were consistent with NRC's perspectives of FENOC's performance and to verify if any significant safety issues were identified that required further NRC follow-up.

b. Findings

No findings of significance were identified.

.3 In-Process Observation of Corrective Actions Associated with the NRC's August 15, 2007, FENOC Confirmatory Order (EA-07-199)

a. Inspection Scope

By letter dated August 15, 2007, the NRC issued an immediately effective Confirmatory Order EA-07-199 (Order) that formalized commitments made by the FirstEnergy Nuclear Operating Company (FENOC). FENOC's commitments were documented in its July 16, 2007, letter responding to the NRC's May 14, 2007, Demand for Information (DFI).

The DFI was issued in response to information provided by FENOC relative to an analysis performed by Exponent Failure Analysis Associates and Altran Solutions Corporation into the 2002 Davis-Besse reactor pressure vessel head degradation event. On June 13, 2007, FENOC provided its response to the DFI and on June 27, 2007, the NRC held a public meeting with FENOC to discuss the DFI response. On July 16, 2007,

FENOC provided a supplemental response to the DFI that provided additional detail regarding the planned implementation of commitments established in the June response to the DFI.

In addition to implementing interim corrective actions, the Order required the licensee to:

- Order Item 1: Conduct regulatory sensitivity training for selected FENOC and non-FENOC employees to ensure those employees identify and communicate information that has the potential for regulatory impact either at FENOC sites or within the nuclear industry to the NRC. The licensee was to provide the population to be trained, the training methodology and materials, and the training objective at least 30 days prior to conducting the training. All training was to be conducted by November 30, 2007. (Refer to inspection report (IR) 05000346/2007005);

- Order Item 2: Conduct effectiveness review to determine if an appropriate level of regulatory sensitivity was evident among FENOC employees including those who received regulatory sensitivity training in January 2008 and 2009. (Refer to IR 00500346/2007005, 05000346/2008002, and 05000346/2008004 for previous effectiveness reviews);

- Order Item 3: Develop a formal process to review technical reports prepared as part of a commercial matter. The process was to be implemented no later than December 14, 2007;

- Order Item 4: Assess its Regulatory Communications Policy and make process changes to its NRC correspondence procedure to ensure specific questions are asked during the process relative to the experience gained from efforts to respond to the NRC's May 14, 2007, DFI. Revisions were to be completed by December 14, 2007;

- Order Item 5: Provide an Operating Experience (OE) document to the nuclear industry by September 15, 2007;

- Order Item 6: Complete a root cause evaluation of the events that culminated in the issuance of the May 14, 2007, DFI, and provide the NRC with a summary of the analysis no later than December 14, 2007; and

- Order Item 7: Maintain the interim corrective actions, discussed, in part, in Section II of the Order until the procedural changes described in Order Items 3 and 4 were implemented.

To assess the licensee's activities associated with the effectiveness reviews, Order Item 2, the inspectors observed the independent assessment team's activities during the week of January 19, 2009, at FENOC Headquarters in Akron, Ohio. The observations included review of the standard questions being asked, observations of the team members conducting interviews, and observation of the team's internal meetings assessing the results from the interviews.

In addition, the inspector reviewed documentation referenced in the licensee's letters dated September 13, 2007 and December 31, 2007. The reviews were conducted to

assess the licensee's actions associated with Order Items 3 through 6. The inspector also discussed with the FENOC's Director – Fleet Regulatory Affairs, additional actions he had taken regarding Order Item 5, providing the industry with operating experience.

b. Observations and Findings

No findings of significance were identified. Based on documentation reviews and observations, the inspectors concluded:

- The licensee had met Order Item 2, to conduct an effectiveness review in 2009, to determine whether an appropriate level of regulatory sensitivity was evident among previously selected FENOC employees.

  The 2009 effectiveness review was conducted by an independent team of qualified individuals. The team was comprised of three experienced individuals: an independent contractor, a manager from a non-FENOC nuclear facility, and an individual from Nuclear Energy Institute (NEI). The team conducted approximately 70 interviews covering FENOC individuals at Davis-Besse, Perry, and Beaver Valley and individuals from FENOC in Akron, Ohio.

  The questions asked of each individual interviewed were appropriate and designed to elicit the interviewee's knowledge and understanding of the material presented during the sensitivity training. The inspector also determined that the interviews were conducted in a manner that allowed the interviewees to express their understanding of the subject matter and to provide examples of how the information affected their daily activities. The interviews were also designed to assess the level to which individuals understood the concepts discussed in the training, such as safety conscious work environment;

- The following documents, described in FENOC's December 31, 2007 letter, were consistent with the descriptions provided in the letter and addressed Order Items 3 and 4;

  Policy:
  NOPL-LP-4002, "Regulatory Communications," Rev. 1, 11/29/2007;
  NOPL-LP-4003, "Regulatory Sensitivity," Rev. 0, 11/6/2007;
  Business Practice:
  NOBP-LP-4013, "Regulatory Impact Assessment Process," Rev. 0, 11/30/2007;
  Procedure:
  NOP-LP-4007, "Regulatory Agency Communications," Rev 3, 11/30/2007;
  NOP-LP-4010, "Regulatory Sensitivity Assessment," Rev. 0, 11/14/07,
  Nuclear Operating Reference Material:
  NORM-LP-4003, "Communication References," Rev 0, 11/30/2007; and
  NORM-LP-4009, "FENOC Regulatory Interface Strategy," Rev. 0, 11/30/2007.

- Operating Experience, provided to the industry on August 10, 2007, and to the NRC via FENOC's September 13, 2007 letter, addressing Order Item 5, accurately described the events surrounding the NRC May 14, 2007 DFI, including a review of technical reports prepared for commercial uses;

- The licensee's summary of its root cause evaluation, Order Item 6, submitted to the NRC via FENOC's December 21, 2007 letter, accurately portrayed the results of the full root cause evaluation; and

- The licensee had maintained interim corrective actions until the procedural changes described in Order Items 3 and 4 were implemented.

Based on the results of this inspection and actions documented in IRs 05000346/2007005, 05000346/2008002, and 05000346/2008004, the inspectors concluded that the licensee has completed all actions required by the Confirmatory Order (EA-07-199).

These results are concurrently documented in inspection reports for Davis-Besse (05000346/2009002), Perry (05000440/2009002) and Beaver Valley (05000334/2009002 and 05000412/2009002).

.4 TI 2515/173, Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative

a. Inspection Scope (1 sample)

An NRC assessment was performed the week of March 22 of the licensee's implementation of the Nuclear Energy Institute – Voluntary Ground Water Protection Initiative (NEI 07-07, dated August 2007, ML072610036). The inspector verified that the licensee had evaluated work practices that could lead to leaks and spills, and has performed an evaluation of systems, structures, and components that contain licensed radioactive material to determine potential leak or spill mechanisms.

The licensee has completed a site characterization of geology and hydrology to determine the predominant ground water gradients and potential pathways for ground water migration from on-site locations to off-site locations. Monitoring wells have been installed at the appropriate locations and an on-site ground water sampling program has been implemented to monitor for potential licensed radioactive leakage into groundwater. The ground water monitoring results were being reported in the annual radiological environmental operating report.

The licensee has prepared procedures for the decision making process for potential remediation of leaks and spills, including consideration of the long term decommissioning impacts. Records of leaks and spills are being recorded in the licensee's decommissioning files, in accordance with 10 CFR 50.75(g).

The licensee has identified the appropriate local and state officials and has conducted briefings on the licensee's ground water protection initiative. Protocols have been established for notification to these local and state officials regarding detection of leaks and spills.

b. Findings and Observations

No findings of significance were identified.

4OA6 Management Meetings

.1 Access Control / ALARA Planning and Control

On February 12, the inspector presented the inspection results of 2S01 and 2S02 to Mr. Kevin Ostrowski, Director of Site Operations, and other members of FENOC staff. The licensee acknowledged the conclusions and observations presented.

.2 Radioactive Gaseous & Liquid Effluent Treatment and Monitoring Systems and Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative

On March 26, the inspector presented the inspection results of 2PS01 and TI-173 to Mr. Kevin Ostrowski, Director of Site Operations, and other members of FENOC staff. The licensee acknowledged the conclusions and observations presented.

.3 End-of-Cycle Performance Assessment Discussion with Licensee

On March 31, Dr. Ronald Bellamy, NRC Regional Branch Chief for Beaver Valley, presented and discussed the End-of-Cycle performance assessment of the Beaver Valley Power Station with Mr. Peter Sena, Beaver Valley Site Vice President. The licensee acknowledged the assessment and planned regulatory oversight. This discussion was completed prior to a public performance assessment open-house on the same date, (ADAMS Accession ML090771222).

.4 Quarterly Inspection Report Exit

On April 14, the inspectors presented the normal baseline inspection results to Mr. Peter Sena, Beaver Valley Site Vice President, and other members of the licensee 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.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are considered violations of NRC requirements which meet the criteria of the NRC Enforcement Policy, for being dispositioned as a Non-Cited Violation:

.1 Beaver Valley Unit 1 and Unit 2 TS 3.7.10 requires, in part, that an adequate Control Room Envelope (CRE) be maintained or restored within 90 days. This protects the CRE during postulated accident and hazardous conditions.

Contrary to TS 3.7.10, the licensee determined that an inadequate CRE existed, due in part to a degraded (damper corrosion) normal intake damper, which is postulated to have existed for longer than the TS allowed time. The separate Control Room Emergency Ventilation System (CREVS) was not affected. The licensee identified the excessive in-leakage condition during a surveillance test. The licensee had failed to to identify this component as a CRE boundary and perform routine inspection and maintenance. Upon finding the excessive in-leakage, the licensee implemented compensatory actions to mitigate the possibility of in-leakage to the control room and completed repairs to the

affected dampers and seals. The licensee entered this issue into their corrective action program as CR 08-49260 and reviewed their CRE maintenance program.

The inspectors determined that the failure to maintain an adequate CRE is a violation of TS 3.7.10 identified by the licensee that affects the containment barrier cornerstone. The violation is considered of very low safety significance since it represents a degradation of the radiological barrier of the control room. This is considered a licensee-identified violation (Green), NCV of Technical Specification 3.7.10.

.2 Beaver Valley Unit 2 TS 3.6.2 action A.2 requires that the operable door for a primary containment airlock is to be locked closed within 24 hours in the event that a primary containment airlock door becomes inoperable. This action is to prohibit inadvertent use of the operable airlock door to maintain primary containment integrity with an inoperable airlock door.

Contrary to TS 3.6.2 action A.2, the licensee identified that the airlock to atmosphere equalizing valve 2PHS-111 was open and out of its normal position from September 21 to September 25. This rendered the outer airlock door inoperable for the same period of time. The licensee failed to lock the inner airlock door as required within 24 hours. Upon finding 2PHS-211 open during the performance of 2OST-47.1 “Containment Air Lock Door Test,” the licensee took the immediate action of closing 2PHS-111 to restore the outer airlock door to operable status. The inner airlock door remained closed for the entire time and satisfactorily maintained the primary containment penetration operable. The licensee entered this issue into their corrective action program as CR 08-46883. Subsequently, the licensee conducted a root cause evaluation and has determined that the level of procedure use to operate the airlock doors should be ‘Step-by-Step’ procedures, and implemented procedure changes. The violation is considered of very low safety significance because it affects the Containment Barrier Cornerstone and is a Type B finding that initially screens out of Manual Chapter 0609, Appendix H, Table 4.1 as Green. Because the licensee discovered 2PHS-111 open during the performance of surveillance test 2OST-47.1, this is considered a licensee-identified violation (Green), NCV of Technical Specification 3.6.2.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

S. Baker	Manager, Radiation Protection
M. Banko	Supervisor, Environmental & Chemistry
D. Barth	Senior Radiation Protection Technician
R. Brosi	Director Performance Improvement
J. Clark	Radiation Protection Health Services Technician
W. Cress	Radio-Chemistry Supervisor
M. Dzumba	Systems Engineer, Effluent Monitoring Systems
W. Etzel	Sr. Consultant
R. Fedin	Regulatory Compliance Engineer
J. Fontaine	ALARA Supervisor
J. Freund	Supervisor, Rad Operations Support
B. Furdak	Quality Assurance Assessor
G. Hackett	Supervisor, Radiation Protection
C. Keller	Regulatory Compliance
R. Lieb	Director Work Management
A. Lonnett	Advanced Nuclear Specialist
R. Lubert	Plant Engineer
J. Mauck	Regulatory Compliance
C. McFeaters	Director Maintenance
L. Mickinac	Nuclear Oversight
C. Miller	Senior Radiation Protection Technician
R. Moore	Radiation Protection Supervisor
K. Ostrowski	Director of Site Operations
R. Palonis	Nuclear Specialist
M. Patel	Staff Nuclear Engineer
M. Pergar	Nuclear Oversight Supervisor
J. Powell-Campbell	Advanced Nuclear Specialist-Environmental
R. Pucci	Senior Nuclear Specialist, ALARA Coordinator
J. Redmond	Staff Nuclear Engineer
D. Salera	Chemistry Manager
P. Sena	Site Vice President
B. Sepelak	Supervisor, Regulatory Compliance
M. Unfried	Nuclear Engineer
P. Vakharia	Plant Engineer, Effluent Monitoring Systems
S. Wender	Corporate Radiation Protection Manager

Other Personnel

R. Bellamy	Chief, NRC Region 1, Division of Reactor Projects, Branch 6
L. Ryan	Inspector, Pennsylvania Department of Radiation Protection

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000334,412 / 2008001-00	LER	Control Room Envelope Air Intake During Normal Operation Higher than Assumed In Design Basis Accident Dose Calculations (Section 4OA3.1)
05000412 / 2008002-00	LER	Containment Airlock Equalization Valve Inadvertently Left Open Following Routine Containment Entry. (Section 4OA3.2)
05000412 / 2008003-00	LER	Low head Safety Injection Pump Inoperable Longer than Allowed by Technical Specification. (Section 4OA3.3)
05000334,412 / TI-173	TI	Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative. (Section 4OA5.4)

Discussed

07-199	EA	NRC's August 15, 2007, FENOC Confirmatory Order (Section 40A5.3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
1/2OM-53C.4A.75.1, Acts of Nature – Tornado or High Wind Abnormal Operating Procedure
1/2OM-53C.4A.75.2, Acts of Nature – Flood Abnormal Operating Procedure

Condition Reports

09-52130	09-52824	09-53404	
09-52261	09-53089		

Work Orders and Notifications

600516714	600515574	600516662	600516715

Other
BV1 Operations Shift Logs, dated February 11-14; March 01, 2009

Section 1R04: Equipment Alignment

Drawings
8700-RM-413-1, Rev. 19
10080-RM-411-1, Rev. 11

Section 1R05: Fire Protection

Pre-Fire Plans
2PFP-MSCU-773, Main Steam Valve Room/Emergency Switchgear Room Fire Areas MS-1 & CV-4, Rev. 0
2PFP-CNTB-735-Fan Room Fire Area CB-5, Rev. 0
1PFP-AXLB-735-Solid Waste, Rev 1, Fire Pre-Plan Solid Waste Fire Area PA-1E
1PFP-SFGB-735-AUX FW & QS Pumps Fire Area QP-1, Rev. 0
1PFP-DGBX-735-Diesel Generator 1 Room Fire Area DG-1, Rev. 1

Section 1R06: Flood Protection

Procedures
1/2OST-30.21A, Group 1 Flood Door Seal System Operability Check

Other
Prompt Operability Determination 09-54434 for flaw at Unit 1 River Water, [24"WR-29-151-Q3]
WO 2002215242

Section 1R13: Maintenance Risk Assessment and Emergent Work Control

Procedures
NOP-OP-1007, Rev. 5, "Risk Determination"

Condition Reports
09-54650 09-56284

Other
Unit 1 Weekly Maintenance Risk Summary for the week of March 9, Rev. 0
Unit 2 Weekly Maintenance Risk Summary for the week of March 9, Revs. 0, 1, 2, & 3
Unit 1 Shift Operations Logs, Dayshift, 2/19/09
Protective Tagout 1BVP-CYC-019-1; 1W12-24-FW-007

Section 1R15: Operability Evaluations

Drawings
Unit 1 River Water Piping Drawings
RM-0413-001, Rev. 23, "Valve Oper No. Dia.-Containment Depressuration System"

Calculations
BOP-VT-09-022, NDE Report for RW Structural Integrity (1RW-137, 1RW-139, 1RW-142)

Procedures
NOP-OP-1009, Immediate and Prompt Operability Determinations
1OST-13.1, Rev 30, "Quench Spray Pump [1QS-P-1A] Test"
1OST-13.4.K, Rev. 9, "Quench Spray Pump Fill and Vent"

Condition Reports

09-56092	09-56095	09-56160	09-54434	09-53401	09-53352
09-53256	09-54676	09-52965	09-52936	09-52269	08-45036
08-46941	09-52269	08-40995	07-17110		

Other

Unit 1 Shift Operating Logs dated, March 04-05, 25-26, 2009
1/2 CMF-75-MCC OHR-1E, Rev. 2, "Inspection, Verification, And Calibration Testing of 480v MCC Overload Heater Relays"
BV2-MCC*2-E13-4A, Rev.3, Breaker Data Sheet
BV2-MCC*2-E14-4D, Rev.3, Breaker Data Sheet
2DBD-44F2, Rev. 5, Design Basis Document for Area Ventilation – Emergency Switchgear Area
2BVT-1.39.15, Rev. 4, "Battery Charger [BAT*CHG2-2] Load Test'
2BVT-1.39.7, Rev. 5, "Station Battery [BAT*2-2] Performance Discharge Test"
Beta Laboratory Report CF 08-057, X314 Relay Failure Analysis, dated 12/16/2008
Event Notification 44805, Ametek Tyco / Potter & Brumsfield Relays Potential Defects, 1/26/09
Ultrasonic Thickness scan for MOV-1RW-103A (WR-20) on January 16, 2009

Section 1R18: Plant Modifications

Work Orders and Notifications

2003313048	200334274	200354030	200354857	200355002

Other

Installation and Test Requirements for TMOD 09-0051

Section 1R19: Post-Maintenance Testing

Procedures

1BVT-1.39.17, Rev. 4,"Station Battery Charger [BAT-CHG 1-4A and BAT-CHG 1-4B] Load Test"
1MSP-6.22-I, Rev. 13, "Delta-T Tave Protection Instrument Channel III Test (T-RC432)"
1MSP-6.4o-I, Rev. 18, "T-RC432 Delta-T Tave Protection Instrument Channel III Calibration"
2OST-15.1, Rev. 41, "Primary Cooling Water Pump [2CCP*P21A] Test"

Work Orders

200316121	200353737

Condition Reports

09-55783	09-53131	08-50618	08-50174
09-53137	08-51480	08-50467	

Section 1R20: Refueling and Outage Activities

Condition Reports

09-56586	09-56583	09-56453	09-55085	09-55348	09-53670
09-53187	09-52785	08-47122			

Procedures
½-CMP-75-LOAD TEST-20M, Issue 4 Rev. 4, "Load Testing Fork Lift for Fuel Receipt"
½-RP-3.11, Rev. 7, "New Fuel Movement"
1-RP-3.10, Rev. 6, "Spent Fuel Building Crane"
1CAL-6-T408D, Rev. 8, "Cal. of Steam Dump Control System T-RC408D"
1CAL-6-T408E, Rev. 6, "Cal. of Media Delta T-TAVG Temp Loops T-RC408 and T-RC409"
1OM-49.4.O, Rev. 9, "Movement of Spent Fuel Pool Crane Checklist"
1OM-52.4.K, Rev. 0, "Tavg Coastdown Operations"
OMM-16, Rev 12, "Site Receipt and Handling of New Fuel Ass. and Shipping Containers"

Other
1R19 Pre-Outage Defense-In-Depth Report, dated March 31, April 1, April 6, 2009
ECP 09-0035-001, Unit 1 Tave/Power coastdown master package
WO200313229, 200345517, 200296710
NOTF 600523245

Section 1R22: Surveillance Testing

Condition Reports
09-52879 08-51146 08-49578 08-49260

Procedures
3BVT-1.44.05, Rev. 3, "Control Room Envelope Air In-Leakage Test"

Other
10080-RM-444A-2, Rev. 15, "Valve Oper No Dia – Computer and Control Room Air-Con"
10080-RM-444A-4, Rev. 12, "Valve Oper No Dia – Control Room Area Air-Conditioning"
Control Room Envelope In-Leakage Testing at Beaver Valley Power Station, Final Report dated December 15, 2008

Section 2OS1: Access Control to Radiological Significant Areas

Access Control to Radiological Significant Areas/ALARA Planning & Controls (71121.01/02)
1/2-ADM-1601, Rev 15, Radiation Protection Standards
1/2-ADM-1611, Rev 9, Radiation Protection Administrative Guide
1/2-ADM-1621, Rev 3, ALARA Program
1/2-ADM-1630, Rev 10, Radiation Worker Practices
1/2-ADM-1631, Rev 5, Exposure Control
1/2-HPP-3.02.003, Rev 8, Decontamination Control
1/2-HPP-3.02.004, Rev 4, Area Posting
1/2-HPP-3.04.002, Rev 5, Bioassay Administration
1/2-HPP-3.05.001, Rev 4, Exposure Authorization
1/2-HPP-3.07.002, Rev 5, Radiation Survey Methods
1/2-HPP-3.07.013, Rev 3, Barrier Checks
1/2-HPP-3.08.003, Rev 10, Radiation Barrier Key Control
1/2-HPP-3.08.006, Rev 1, Shielding
BVBP-RP-0003, Rev 4, Dosimetry Practices

BVBP-RP-0013, Rev 2, Radiation Protection Risk Assessment Process
BVBP-RP-0016, Rev 0, Survey Requirements During Plant Transients
BVBP-RP-0020, Rev 6, RP Job Coverage General Guidance
NOP-OP-4005, Rev 0, ALARA Program
NOP-WM-7002, Rev 1, Operational ALARA Program
NOP-OP-4107, Rev 0, Radiation Work Permit
NOP-OP-4101, Rev 0, Access Controls for Radiologically Controlled Areas
NOP-WM-7021, Rev 2, Radiological Postings, Labeling, and Markings
NOP-WM-7025, Rev 0, High Radiation Area Program
BVBP-RP-0024, Rev 1, Remote Monitoring

Nuclear Oversight Reports:
Quality Field observations:
BV220093637, BV120093615, BV320093630, BV320093604, BV220083391, BV220083522, BV220083528, BV120083405, BV120083405, BV320083372, BV320083382, BV320083586,, BV220083532
Second Quarter 2008, Third Quarter 2008 & Fourth Quarter 2008 Nuclear Oversight Performance Reports

Radiation Protection Self-Assessments:
BV-SA-08-074, Negative Emerging Trends
FL-SA-08-097, High Radiation Area Controls
FL-SA-08-077, Negative Performance Trends
FL-SA-08-028, Performance Trends

Condition Reports :

08-48735	08-45687	08-41231	08-41147	08-43720	08-39735
08-39937	08-40208	08-39809	09-53019	09-53155	09-53271
09-53171	08-48735	09-52793	08-42247	08-42998	08-42938

ALARA Council Meeting Minutes:
Meeting Nos: 08-37, 08-36, 08-35, 08-34, 08-33, 08-32, 08-31, 08-29

1 R19 Radiation Work Permits/ALARA Plans:
RWP 109-4000/09-1-16, Radiation Protection Functions in the U-1 RBC
RWP 109-4015/09-1-24, Secondary Side Sludge Lancing and Inspection
RWP 109-4018/09-1-25, U-1 Reactor Disassembly/Reassembly
RWP 109-4022/09-1-28, U-1 Core Offload/Reload

2R13 ALARA Post –Job Reviews:
RWP208-5017/08-2-20, Steam Generator Platform Support
RWP 208-5039/08-2-31, Install/Remove Scaffolding
RWP 208-5058/08-2-61, Under the Reactor Head Repairs

Micro-ALARA Planning Work Sheets:
2CHS-P21C, Repair Seals, System Repairs, and PMPs/RWP 209-2026
FIN Routine Maintenance, Install Sealed Oil Bearings on BR-P-7A/B/RWP 109-1009
1CH-P-1C PMs/ RWP 109-1003
1CH-P-1C, Flush with ALCONOX/RWP 1009-1001

Miscellaneous Reports:
2R13 Post-Outage ALARA Report
2R 13 Daily Exposure Summaries
Site Occupational Radiation Exposure Report for period 01/01/2008-01/01/2009
Health Physics Readiness Review for 1R19 Insulation Removal/Installation
1R19 Health Physics Outage Readiness Action Items
Dose/Dose Rate Alarm Report 05/01/2008 through 02/03/2009
2009 – 2013 Exposure Reduction Plan
Station ALARA Committee Meeting 02/12/2009, 1R19 Refueling Activities
2009 Station On-Line Dose Reduction Plan

Section2PS1: Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

Procedures:
1/2-ODC-1.01, Rev 5 ODCM: Index, Matrix, and History of ODCM Changes
1/2-ODC-2.01, Rev 5 ODCM: Liquid Effluents
1/2-ODC-2.02, Rev 2 ODCM: Gaseous Effluents
1/2-ODC-3.01, Rev 1 ODCM: Dispersion Calculation Procedure and Source Term Inputs
1/2-ODC-3.02, Rev 2 ODCM: Bases for ODCM Controls
1/2-ODC-3.03, Rev 6 ODCM: Controls for RETS and REMP Program
1-HPP-4.02.008, Rev 2 SA-9/SA-10 Noble Gas Monitors
1-HPP-4.02.010, Rev 2 SPING-4 Particulate, Iodine, and Noble Gas Monitor
2-HPP-4.02.020, Rev 13 DRMS, Process Monitoring Subsystem
2-HPP-4.02.021, Rev 6 DRMS, Effluent Monitoring Subsystem
1/2-ENV-05.04, Rev 0 Radioactive Waste Discharge Authorization-Liquid
NOP-OP-3202, Rev 3 FENOC Radiochemistry Quality Control Program

Test Reports:
BV-1MSP-43.18.1, Calibration of the Unit 1RM-LW 104 Liquid Waste Monitor
BV-2MSP-43.39.1, Calibration of the Unit 2 RM-2SGC-RQ100 Liquid Waste Monitor
BV-1BVT1-16-06, Unit-1 B-Supplementary Leak Collection and Release System (SCLRS) Filter Efficiency Test and Flow Test, 02/24/06
BV-1BV-01-16-07, SLCRS Filter efficiency Test and Flow Test, 08/16/2007
BV-2BVT1-16-06, Unit-2 A-Supplementary Leak Collection and Release System (SCLRS) Filter Efficiency Test and Flow Test, 002/27/2009
BV-2BVT-01-16-11, SLCRS Filter Train B Charcoal Sample Test, 07/11/2005
BV-2BVT-01-16-07, SLCRS Filter Train B Filter Efficiency and Flow Test, 012/05/07
BV-2BVT-01-16-08, Main Filter Bank Charcoal Test, 09/05/2008
BV-1OST-43-09, Liquid & Gaseous Effluent Monitors Instrument Channel Check
BV-1OST-43.02, Area and Process Monitors Channel Functional Test
BV-2OST-43.03, Liquid & Gaseous Effluent Monitors Instrument Channel Check

Nuclear Oversight (NO) Reports:
Multi-Site Chemistry and Environmental Audit, MS-C-08-08-02

Condition Reports:

08-38484	09-55238	09-55070	09-54734	09-55966	09-55879
09-55914	09-53830	08-49089	08-48618	08-44706	08-44582

08-43691 08-41450 08-36611
Miscellaneous Reports:
2007 Annual Radioactive Effluent Release Reports
BVPS Snapshot Self-Assessment, BV-SA-08-085, Provide an Overall Assessment Review of the BVPS Implementation of the NEI Groundwater Protection Initiative
2008 Validation and Verification of LIQDIS and GASDIS Software
Interlaboratory Comparison Program Results for 2008
Monthly Dose Projections for January 2008 thru March 2009

Section 4OA2: Identification and Resolution of Problems

Drawings
72259-4, Rev. D, Fuel Elevator Details-Unit 1
72259-3, Rev. B, Fuel Elevator Assembly and Details-Unit 1
72259-4, Rev. B, Fuel Elevator Details-Unit 1
8700-RV-42A, Rev. 6, Fuel Elevator Spent Fuel Pool-Unit 1

Condition Reports

09-56586	09-53159	08-49431	08-49410
09-56583	09-52776	08-49566	
09-53240	09-52760	08-49694	

Other
1RP-3.2, "Fuel transfer System"
8700-02.102-0010, UE&C Instruction Manual Cable Drive Fuel Transfer System
ANSI B30.2-1976, "Overhead and Gantry Cranes"
ANSI B30.20, American National Standard for Lifting Devices
ANSI N14.6-1978, American National Standard for Special Lifting Devices Book III
Failure Analysis Report for Failed Cable from Spent Fuel Pool Upender from BVPS-1, 11/19/07
Failure Mode Analysis for 07-28471, dated October 13, 2007
Westinghouse Field Anomaly Report FAR DL-07-81 / 83
BVPS Licensee Cross-Cutting Aspect Precursors (Feb08 – Jan09)

Section 4OA3: Event Response

Condition Reports

09-56908	08-50982	08-50477	08-49443
08-51146	08-50577	08-49578	08-49260

Procedures
3BVT-1.44.05, Rev. 3, "Control Room Envelope Air In-Leakage Test"

Work Orders

200345969	200346357	200346152
200346133	200345949	

Other
10080-RM-444A-2, Rev. 15, "Valve Oper No Dia – Computer and Control Room Air-Con"
10080-RM-444A-4, Rev. 12, "Valve Oper No Dia – Control Room Area Air-Conditioning"

BV1&2 Operations Shift Logs, dated November 10 – December 12, 2008
Control Room Design Basis Accident Dose Calculations, BV 1 & 2
Control Room Envelope In-Leakage Testing at Beaver Valley Power Station, Final Report dated December 15, 2008

Section 4OA5: Other Activities

EA-07-199 Confirmatory Order Review
Policy:
NOPL-LP-4002, "Regulatory Communications," Rev. 1, 11/29/2007;
NOPL-LP-4003, "Regulatory Sensitivity," Rev. 0, 11/6/2007;
Business Practice:
NOBP-LP-4013, "Regulatory Impact Assessment Process," Rev. 0, 11/30/2007;
Procedure:
NOP-LP-4007, "Regulatory Agency Communications," Rev 3, 11/30/2007;
NOP-LP-4010, "Regulatory Sensitivity Assessment," Rev. 0, 11/14/07,
Nuclear Operating Reference Material:
NORM-LP-4003, "Communication References," Rev 0, 11/30/2007; and
NORM-LP-4009, "FENOC Regulatory Interface Strategy," Rev. 0, 11/30/2007.

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)
FENOC	First Energy Nuclear Operating Company
HEPA	High Efficiency Particulate Absolute
HRA	High Radiation Area
IMC	Inspection Manual Chapter
INPO	Institute of Nuclear Power Operations
IP	Inspection Procedure
ISI	Inservice Inspection
LCO	Limiting Conditions for Operations
LER	Licensee Event Report
NRC	Nuclear Regulatory Commission
OD	Operability Determinations
ODCM	Off-Site Dose Calculation Manual
OST	Operations Surveillance Test
PCE	Personnel Contamination Event Report
PI	Performance Indicator
PI&R	Problem Identification and Resolution
PMT	Post Maintenance Testing
RCA	Radiological Controlled Area
RETS	Radiological Environmental Technical Specifications
RWP	Radiation Work Permit
SLCRS	Supplemental Leak Collection and Release System
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report

VHRA	Very High Radiation Area