

August 13, 2008

Mr. Peter P. Sena, III  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Beaver Valley Power Station  
Mail Stop A-BV-SEB1  
P. O. Box 4, Route 168  
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION – NRC EVALUATED EMERGENCY  
PREPAREDNESS EXERCISE – INSPECTION REPORT NOS.  
05000334/2008502 AND 05000412/2008502

Dear Mr. Sena:

On July 23, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection of the June 24, 2008, evaluated emergency preparedness exercise at your Beaver Valley Power Station. The enclosed inspection report documents the inspection results, which were initially discussed on June 27, 2008, with you and other members of your staff. Following submission of additional information after that meeting, an exit meeting was conducted by phone on July 23, 2008, with Mr. Glenn McKee, the Beaver Valley Emergency Response Manager, 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, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. NRC is treating this violation as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the violation and because it is entered into your corrective action program. If you contest this non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the United States 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.

P. Sena

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Sincerely,

***/RA/***

James A. Trapp, Chief  
Plant Support Branch 1  
Division of Reactor Safety

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

Enclosure: NRC Inspection Reports 05000334/2008502 and 05000412/2008502

P. Sena

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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: 05000334/2008502, 05000412/2008502

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Beaver Valley Power Station, Units 1 and 2

Location: Post Office Box 4  
Shippingport, PA 15077

Dates: June 23 – July 23, 2008

Inspectors: S. Barr, Sr. Emergency Preparedness Inspector, DRS, Region I (Lead)  
D. Silk, Sr. Operations Engineer, DRS, Region I  
D. Spindler, Beaver Valley Resident Inspector, DRP, Region I  
J. Commiskey, Health Physicist, DRS, Region I  
R. Berry, Reactor Engineer, NSIR (Observer)

Approved By: James A. Trapp, Chief  
Plant Support Branch 1  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000334/2008502, 05000412/2008502; 06/23/2008 - 07/23/2008; Beaver Valley Power Station, Units 1 & 2; Exercise Evaluation; Emergency Action Level and Emergency Plan Changes; Emergency Preparedness Performance Indicators.

This was an announced inspection conducted by three region-based inspectors and one resident inspector. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### **Cornerstone: Emergency Preparedness**

#### A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

#### B. Licensee-Identified Findings

A violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspector. Corrective actions taken by the licensee have been entered into the licensee's corrective action program. This violation and corrective actions are listed in Section 4OA7 of this report.

## REPORT DETAILS

### 1. REACTOR SAFETY

Cornerstone: Emergency Preparedness (EP)

#### 1EP1 Exercise Evaluation (71114.01 – 1 Sample)

##### a. Inspection Scope

Prior to the June 24, 2008, emergency preparedness exercise, the NRC inspectors conducted an in-office review of the exercise objectives and scenario, which First Energy Nuclear Operating Company (FENOC) had submitted to the NRC, to determine if the exercise would test major elements of the Beaver Valley Power Station Emergency Plan as required by 10 CFR 50.47(b)(14). This overall exercise inspection activity represented the completion of one sample on a biennial cycle.

The exercise evaluation consisted of the following review and assessment:

- The adequacy of FENOC's performance in the biennial full-participation exercise regarding the implementation of the risk-significant planning standards (RSPS) described in 10 CFR 50.47(b)(4), (5), (9), and (10), which are: emergency classification; offsite notification; radiological assessment; and protective action recommendations, respectively.
- The overall adequacy of FENOC's emergency response facilities with regard to NUREG-0696, "Functional Criteria for Emergency Response Facilities," and Emergency Plan commitments. The facilities assessed were the Control Room Simulator, Technical Support Center (TSC), Operations Support Center (OSC), and Emergency Operations Facility (EOF).
- A review of other performance areas, such as: the emergency response organization's (ERO's) recognition of abnormal plant conditions; command and control; intra- and inter-facility communications; prioritization of mitigating activities; utilization of repair and field monitoring teams; interface with offsite agencies; staffing and procedure adequacy; and the overall implementation of the emergency plan and its implementing procedures.
- A review of past performance issues from the last NRC exercise inspection report and FENOC's EP drill reports, to determine the effectiveness of licensee corrective actions as demonstrated during the June 24 exercise and to ensure compliance with 10 CFR 50.47(b)(14).
- The licensee's post-exercise critiques, to evaluate FENOC's self-assessment of its ERO performance during the June 24 exercise and to ensure compliance with 10 CFR 50, Appendix E, Section IV.F.2.g.

The inspectors reviewed the documents listed in the attachment to this report.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04 – 1 Sample)

a. Inspection Scope

Since the last NRC inspection of this program area, Revision 25 of the Beaver Valley Power Station Emergency Plan was implemented by FENOC. FENOC had determined that in accordance with 10 CFR 50.54(q), any change made to the Plan had resulted in no decrease in effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR 50. The inspectors reviewed all EAL changes made since January 2007, and conducted a sampling review of other Emergency Plan changes, including changes to lower-tier emergency plan implementing procedures, to evaluate for any potential decreases in effectiveness of the Emergency Plan. However, this review was not documented in a Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

4OA1 Performance Indicator (PI) Verification (71151 – 3 Samples)

a. Inspection Scope

The inspectors reviewed data for the Beaver Valley EP PIs, which are: (1) Drill and Exercise Performance (DEP); (2) Emergency Response Organization (ERO) Drill Participation; and, (3) Alert and Notification System (ANS) Reliability. The last EP inspection at Beaver Valley was conducted in the first quarter of 2007, so the inspectors reviewed supporting documentation from EP drills and tests from the first calendar quarter of 2007 through the first quarter of 2008, to verify the accuracy of the reported PI data. The review of these PIs was conducted in accordance with NRC Inspection Procedure 71151, using the acceptance criteria documented in NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 5.

This inspection activity represented the completion of three samples on an annual cycle.

b. Findings

No findings of significance were identified.

#### 4OA6 Meetings, Including Exit

On June 27, 2008, the inspectors presented the preliminary results of this inspection to Mr. P. Sena, the Beaver Valley Site Vice President, and other members of the FENOC staff. Additional information concerning the inspection was presented to the inspector for in-office review following the June 27 meeting, and a final exit meeting was conducted via teleconference on July 23, 2008, with Mr. G. McKee, the Beaver Valley Emergency Response Manager, and other members of the Beaver Valley staff. No proprietary information was provided to the inspectors during this inspection.

#### 4OA7 Licensee Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a non-cited violation (NCV).

- 10 CFR 50.54(q) requires licensees to follow and maintain in effect an emergency plan which meets the standards of 10 CFR 50.47(b). The Beaver Valley Power Station Emergency Plan states that emergency action level values are based upon criteria established under NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels." In March and October 2006 FENOC made changes to the Unit 1 and Unit 2 emergency action levels (EALs), respectively, as a result of the units' extended power up-rates. The licensee used calculation package 10080-UR(B)-507, "Containment High Range Radiation Area Monitor Readings Due to LOCA With Various Source Terms – Addresses Alternative Source Terms and Power Up-rate," to revise area radiation monitor thresholds in the EAL fission product barrier matrix.

In making the changes, the licensee committed two separate errors. The first error was that the values for the containment radiation monitors listed under the Fuel Cladding Barrier (EAL 1.1.6) were taken from the wrong table in the calculation package, and this affected both Units. The second error was an incorrect mathematical conversion that involved the threshold for Significant Radioactivity in Containment (EAL 1.3.5), which only affected Unit 2.

Upon discovery of this error, in April, 2008, the licensee took immediate action to correct the related EAL radiation values and issued CR 08-38146, which initiated a root cause evaluation and a technical evaluation to understand what redundant EAL thresholds may have been exceeded before the affected EAL 1.1.6 and 1.3.5 thresholds. The inspector determined that the errors associated with these EAL parameters were mathematical in nature and were of very low safety significance because they would not have delayed the declaration of any event, due to redundant EALs.

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**ATTACHMENT**

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

**Licensee Personnel**

G. McKee, Beaver Valley Emergency response Manager

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

None

**LIST OF DOCUMENTS REVIEWED**

**Section 1EP1: Exercise Evaluation**

Beaver Valley Power Station Emergency Plan (Revision 25)

Beaver Valley Power Station Emergency Plan Implementing Procedures

Beaver Valley June 24, 2008, Emergency Exercise Scenario Package

Beaver Valley Emergency Preparedness Drill Reports, January 2007 – May 2008

Condition Reports written for the June 24, 2008, exercise:

08-42299, 08-42313, 08-42322, 08-42325, 08-42349, 08-42351,

08-42352, 08-42356, 08-42359, 08-42367, 08-42368, 08-42415

**Section 1EP4: Emergency Action Level and Emergency Plan Changes**

Procedure NOP-CC-2003, Engineering Changes (Revision 12)

Procedure NOP-CC-2004, Design Interface Reviews and Evaluations (Revision 6)

Procedure NOP-LP-4003, Evaluation of Changes, Tests and Experiments (Revision 4)

Procedure NOP-LP-5002, Evaluation of Changes to Emergency Plans and Supporting Documents 10CFR50.54 (q) (Revision 0)

10 CFR 50.54(q) Reviews, Performed January 2007 –May 2008

**Section 40A1: Performance Indicator Verification**

Procedure 1/2 –ADM-1111, NRC EPP Performance Indicator Instructions (Revision 3)

Condition Reports 08-32836, 08-34526, and 08-42054

ERO Drill Participation PI data, January 2007 – March 2008

Public Notification System PI data, January 2007 – March 2008

DEP PI data, January 2007 – March 2008

**Section 40A7: Licensee Identified Violations**

Condition Report 008-38146

Root Cause Analysis Report: Identification of Incorrect Rad Monitor Values Within EAL Schematic (Dated 07-23-2008)

**LIST OF ACRONYMS**

ANS	Alert Notification System
CR	Condition Report
DEP	Drill and Exercise Performance
EAL	Emergency Action Level
EOF	Emergency Operations Facility
EP	Emergency Preparedness
ERO	Emergency Response Organization
FENOC	First Energy Nuclear Operating Company
NCV	Non-cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OSC	Operations Support Center
PI	Performance Indicator
RSPS	Risk Significant Planning Standard
TSC	Technical Support Center