

November 26, 2003

Mr. L. William Pearce
Site Vice President
FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
Post Office Box 4
Shippingport, Pennsylvania 15077

SUBJECT: BEAVER VALLEY - NRC SUPPLEMENTAL INSPECTION REPORT
NOS. 05000334/2003009 AND 05000412/2003009

Dear Mr. Pearce:

On November 4-6, 2003, the U.S. Nuclear Regulatory Commission (NRC) conducted an emergency preparedness (EP) supplemental inspection at your Beaver Valley Power Station. The inspection was conducted to assess the evaluation and corrective actions associated with the untimely augmentation of radiation protection technicians which was identified on January 31, 2003, during an augmentation drill. This issue resulted in a violation with White significance which was documented in Inspection Report No. 05000334/2003006;05000412/2003006. The enclosed report documents the supplemental inspection findings which were discussed on November 6, 2003, with you and other members of your staff.

The supplemental inspection was conducted to determine if the root and contributing causes of the White finding were understood, to assess the extent of the condition review, and to determine if the corrective actions for risk significant performance issues were sufficient to address the causes and to prevent recurrence. To accomplish these objectives, the inspector reviewed your root cause analysis report, condition reports and self-assessments associated with the issue. Based on our inspection, we concluded that your staff understood the root and contributing causes of the White finding, adequately addressed the extent of condition, and took adequate corrective actions for the underlying causes to prevent recurrence.

Given your acceptable performance in addressing this issue, the associated White finding will only be considered in assessing plant performance through the period concluding at the end of the first calendar quarter of 2004, in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program."

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Sincerely,

/RA/

Wayne D. Lanning, Director
Division of Reactor Safety

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

Enclosure: Inspection Report 05000334/2003009 and 05000412/2003009

cc w/encl:

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REGION I

Docket Nos: 50-334
50-412

License No: DPR-66
NPF-73

Report No: 05000334/2003009
05000412/2003009

Licensee: First Energy Nuclear Operating Company

Facility: Beaver Valley Power Station

Location: Shippingport, Pennsylvania

Dates: November 4 - 6, 2003

Inspector: D. Silk, Senior Emergency Preparedness Inspector

Observer: R. Sacchet, Radiological Analyst, Ohio Emergency Management Agency

Approved by: R. J. Conte, Chief
Operational Safety Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000334/03-009 and 05000412/03-009; 11/4-6/2003; Beaver Valley Power Station; Supplemental Inspection.

The emergency preparedness (EP) supplemental inspection was performed on site by a region-based inspector. An in-office EP plan change inspection was also conducted. No findings 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 3, dated July 2000.

Cornerstone: Emergency Preparedness

The NRC performed this supplemental inspection in accordance with Inspection Procedure 95001, to assess the licensee's evaluation and corrective actions regarding the untimely augmentation of radiation protection (RP) technicians as identified during the January 31, 2003, augmentation drill. During this inspection, it was determined that FirstEnergy performed a comprehensive evaluation of the causes resulting in the untimely response of RP technicians. FirstEnergy's evaluation identified the primary root cause of this issue to be standards, policies or administrative controls that were less than adequate in that the testing did not include all appropriate personnel. The contributing causes were that: 1) the manual call out procedure was difficult to use and 2) communications were not timely because the process was relying on contacting individuals through home telephone numbers thus limiting the opportunities for successful notification. The licensee's extent of condition review was acceptable. The primary corrective action was distributing pagers and cellular telephones to the RP technicians. Effectiveness reviews were determined to be appropriate.

Given the licensee's acceptable performance in addressing the RP technician augmentation issue, the White finding associated with this issue will only be considered in assessing plant performance through the period concluding at the end of the first calendar quarter of 2004, in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program."

REPORT DETAILS

01 INSPECTION SCOPE

Summary of the Performance Issue

During an emergency response organization (ERO) activation drill conducted by FirstEnergy on January 31, 2003, the licensee determined that it took 95 minutes to staff the 12 radiation protection (RP) technician response positions. The inspector determined that the licensee's established controls were not capable of meeting the minimum and timely staffing requirements in Emergency Preparedness Plan (EPP), Section 5, Table 5-1. This requirement is to augment the shift with 12 RP technicians within 30 or 60 minutes for the following four functions: offsite surveys (two in 30 and two in 60 minutes), onsite surveys (one in 30 and one in 60 minutes), in-plant surveys (one in 30 and one in 60 minutes), and in-plant protective actions (two in 30 and two in 60 minutes). These positions are filled by personnel who do not carry ERO pagers and who are manually called one at a time by telephone to respond. Before January 31, 2003, FirstEnergy had not tested the capability to augment shift staff with these personnel and they are not called as part of the monthly pager test. However, the EP staff conducted an unannounced activation drill (personnel actually reported to the site when called) on January 31, 2003, which revealed that only one of the 12 RP response positions was filled in the allowed time period. Full staffing of the positions did not occur until after 95 minutes had elapsed. This information resulted in interim compensatory measures and a substantial change in the call out process for RP technicians. This performance deficiency was a violation of 10 CFR 50.47(b)(2) and the related EPP requirements for not ensuring that adequate and timely emergency response staffing was maintained at all times.

In a letter from the NRC to FirstEnergy dated July 10, 2003, the NRC issued a final significance determination (White) and a notice of violation for not augmenting the emergency response organization with radiation protection technicians within the required times as demonstrated during an unannounced activation drill on January 31, 2003.

Supplemental Inspection Scope

On November 4-6, 2003, the NRC performed a supplemental inspection using Inspection Procedure 95001 to assess FirstEnergy's evaluation of the issues associated with the untimely augmentation of radiation protection technicians as identified during the January 31, 2003, augmentation drill. This performance issue was previously characterized as a White finding in NRC Inspection Report 50-334&412/03-06 and is related to the emergency preparedness (EP) cornerstone in the reactor safety strategic performance area. The objectives of this supplemental inspection are 1) to provide assurance that the root causes and contributing causes of risk significant performance issues are understood, 2) to provide assurance that the extent of condition of risk significant issues is identified, and 3) to provide assurance that licensee's corrective

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actions to risk significant performance issues are sufficient to address the root causes and contributing causes, and to prevent recurrence.

02 EVALUATION OF INSPECTION REQUIREMENTS

02.01 Problem Identification

- a. Determination of who (i.e., licensee, self-revealing, or NRC) identified the issue and under what conditions.

The issue was identified by the licensee during the January 31, 2003, augmentation drill. This was the first augmentation drill which involved the RP technicians. According to the licensee, the RP technicians were included in this test as a result of their extent of condition review pertaining to the personal home alerting device (PHAD) issue. That review indicated that the licensee may not be able to meet the 60 minute augmentation criteria because the RP technicians do not carry pagers nor are they contacted by BVERS (Beaver Valley Emergency Response System) - the licensee's automated call-out system. They were contacted individually by a manual process.

- b. Determination of how long the issue existed, and prior opportunities for identification.

This condition had existed throughout the life of the plant since the RP technicians had never been included in activation drills prior to January 31, 2003. When the licensee reviewed ERO augmentations that had occurred in past actual events, there was no definitive indication that there had been problems with the RP technicians responding in a timely manner.

- c. Determination of the plant-specific risk consequences (as applicable) and compliance concerns associated with the issue.

Untimely RP technician augmentation had no plant-specific risk consequences (to core damage) due to the nature of the issue. The licensee's RCA Report recognized that the response times of the RP technicians did not meet the requirement of Table 5.1 of the emergency plan which corresponds to 10 CFR50.47(b)(2).

02.02 Root Cause and Extent of Condition Evaluation

- a. Evaluation of methods used to identify the root causes and contributing causes.

To evaluate this issue, the licensee used two methods. Immediately after the January 31, 2003, drill, the licensee used the Kepner-Tregoe (K-T) method to review the cause of the failed test. Following the NRC exit meeting on February 28, 2003, in which a potential greater than green finding was identified, the licensee performed a TapRoot Analysis (Causal Factor Flow Charting). This second method was used so as to not

duplicate the K-T method. The investigations were performed by personnel qualified in RCA investigations. The results of both methods were similar.

- b. Evaluation of the level of detail of the root cause investigation.

The licensee's root cause evaluation identified a root cause and several contributing causes. The root cause was that standards, policies or administrative controls were less than adequate in that the testing did not include all appropriate personnel. The contributing causes were that: 1) the manual call out procedure was difficult to use in that it took 47 minutes to implement and 2) communication was not timely because the process was relying on contacting individuals through home telephone numbers which limited the opportunities for success. (Pagers had not been provided to these individuals.) The causes identified by the licensee were reasonable and were evaluated at the appropriate level of detail.

- c. Consideration of prior occurrences of the problem and knowledge of prior operating experience.

The licensee's evaluation included a review of their records for similar events to determine if this issue had been previously identified at the Beaver Valley Power Station. There were several actual events that caused the ERO to be augmented. The licensee determined that there were no augmentation problems noted for those events. The licensee also searched for similar events at their "sister" plants (Perry and Davis Besse) and in the industry at large. No similar issues were identified. The inspector determined that the licensee's search for prior occurrences for this specific issue was acceptable.

- d. Consideration of potential common causes and extent of condition of the problem.

The licensee applied its extent of condition review to all of the emergency response positions listed in Table 5.1 of the EPP. No similar augmentation issues were identified. Because this augmentation issue had existed unnoticed during the life of the plant, the extent of condition review included a review of the entire emergency plan to identify and ensure that all commitments are being met and documented. During this review, no unmet commitments were discovered but several enhancements to the EP program were identified. The inspector determined that the licensee's review was sufficiently broad and in-depth to address the issue.

02.03 Corrective Actions

- a. Evaluation of the appropriateness of the corrective actions.

The licensee established appropriate immediate and long term corrective actions to address the root cause and contributing causes for this issue. Shortly after the event, management personnel, with radiation protection expertise, were placed on call to respond to fill the 12 RP technician positions within 60 minutes. (They would be relieved when the called out RP technicians arrived.) Long term corrective actions included

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offering pagers and cellular telephones to the RP technicians. The RP technicians used to be contacted by a supervisor manually dialing each RP technician one at a time. These individuals, who are union personnel, had not been given pagers or cellular telephones in the past because of compensation issues. The agreement now is that the licensee will only contact these individuals through these means for emergency response purposes only. Most RP technicians accepted either a pager or cellular telephone. In addition, the licensee entered the RP technicians' home telephone numbers and cellular telephone numbers into BVERs. The inspector interviewed five RP technicians to verify that they had been offered pagers and/or cellular telephones and that they had received training on the notification process and expectations regarding response times. Call out drills and augmentation drills had been performed subsequent to the distribution of the pagers and cellular telephones. No problems were identified with RP technicians during these drills. The inspector concluded that corrective actions were appropriate.

b. Evaluation of the prioritization of the corrective actions.

The inspector determined that immediate and long term corrective actions were appropriately prioritized and implemented in a timely manner. There are only two uncompleted corrective actions. One is the conducting of another augmentation drill and the second is performing an effectiveness review of the corrective actions after this drill. The inspector determined that the prioritization of the corrective actions was appropriate.

c. Establishment of schedule for implementing and completing the corrective actions.

The inspector determined that the licensee's schedule for implementing and completing the corrective actions was prompt. As stated above, all but two of the corrective actions had been completed before this inspection.

d. Establishment of quantitative or qualitative measures of success for determining the effectiveness of the corrective actions to prevent recurrence.

The effectiveness review for corrective actions will be completed after one additional augmentation drill. Prior to this inspection, the licensee performed drills to assess the timeliness of the RP technicians to augment the on shift crew. No problems were indicated based upon those drills. Because the RP technicians were added to the BVERs call out system, the licensee is monitoring the impact of having approximately 30 additional individuals being called and responding to the system. These reviews quantitatively assess the effectiveness of corrective actions to ensure time RP technician response. Qualitatively, the entire emergency plan had been reviewed to ensure that all commitments were being met and documented.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

An in-office review was performed on October 31, 2003, of recent licensee's changes to the EPP and implementing procedures to determine if the changes had decreased the effectiveness of the EPP. The changes reviewed are listed in the attachment to this report. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, and the applicable requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings of significance were identified in this area.

03 MANAGEMENT MEETINGS

Exit Meeting Summary

The inspector presented the inspection results in a Regulatory Performance Review Meeting to Mr. Pearce, Site Vice President, and other members of licensee management, on November 6, 2003, at the conclusion of the inspection. Also present by telephone from Region I were Messrs. W. Lanning, Director, Division of Reactor Safety and R. Conte, Chief, Operational Safety Branch. At that time, the White Finding was left open due to NRC questions about the adequacy of the licensee's extent of condition review. After internal discussion among the NRC staff, it was determined that the extent of condition review was adequate. The licensee was informed of this decision via telephone on November 14, 2003. The licensee acknowledged the findings presented. The licensee did not indicate that any of the information presented during this inspection was proprietary.

Attachment 1

SUPPLEMENTAL INFORMATION

Key Points of Contact

Licensee Personnel:

C. Contreras	Nuclear Technologist
H. Szklinski	Senior Nuclear Technologist
S. Vicinie	Emergency Preparedness Manager

NRC Personnel:

P. Cataldo	Senior Resident Inspector
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List of Items Opened, Closed, and Discussed

Opened: None

Closed:

AV 50-334;50-412/03-006-01	VIO	Adequate and timely emergency response staffing in four key functional area not maintained at all times as per 10CFR50.54 (q) and 10CFR50.47(b)(2).
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Discussed: None

List of Documents Reviewed

Root Cause Analysis Report - Condition Report 03-02202
Condition Report 02-02202 (Personal Home Alert Devices not Adequately Tested)
Condition Report 03-00259 (Blanket CR to track performance of required 2003 EP Test)
Condition Report 03-01078 (E-Plan Requirement to call out 12 RP Techs was not met)
Condition Report 03-02202 (Potential greater than green finding debriefed by NRC)
BV-SA-03-68, Ongoing Self-Assessment: BVPS Implementation of the Requirements of NUREG 0654, Table B.1 (3/1-5/9/03)
BV-SA-03-77, Ongoing Self-Assessment: BVPS Emergency Plan Implementation (6/23-8/29/03)
July 10, 2003, letter from NRC to Mr. Pearce forwarding the final significance determination for the white finding and notice of violation
NRC Inspection Report 50-334&412/03-06
Emergency Plan Section 5, Table 5.1, Minimum Staffing Requirements (Rev 18)
½-ADM-1102, BVPS Emergency Notification Testing, Review and Trending, Rev 0

½-ADM-1106, Drill/Exercise Scenario Development, Preparation and Conduct, Rev 0
 ½-ADM-2204, Commitment Management, Rev 0

Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes

Emergency Plan Section 2, Rev 13
 Emergency Plan Section 5, Rev 18
 Emergency Plan Section 6, Rev 18
 Emergency Plan Section 8, Rev 18
 EPP/IP 2.1, Emergency Radiological Monitoring, Rev 11
 EPP/IP 2.6.2, Dose Projection-ARERAS/MIDAS with FSAR Defaults, Rev 13
 EPP/IP 2.6.3, Dose Projection-ARERAS/MIDAS with Real-Time Inputs, Rev 13
 EPP/IP 2.6.4, Dose Projection-ARERAS/MIDAS with Manual Inputs, Rev 14
 EPP/IP 2.6.12, Dose Projection-ARERAS/MIDAS with Severe Accident Assessment, Rev 10
 EPP/IP 2.7.1, Liquid Release Estimate - Computer Method, Rev 10

List of Acronyms

BVERS	Beaver Valley Emergency Response System
CA	Corrective Action
CR	Condition Report
EP	Emergency Preparedness
EPP	Emergency Preparedness Plan
ERO	Emergency Response Organization
K-T	Kepner-Tregoe
NRC	Nuclear Regulatory Commission
OE	Operating Experience
PHAD	Personal Home Alerting Device
RCA	Root Cause Analysis
RP	Radiation Protection