July 25, 2002

Mr. M. Bezilla
Vice President
Post Office Box 4
FirstEnergy Nuclear Operating Company
Shippingport, Pennsylvania 15077

SUBJECT: BEAVER VALLEY POWER STATION - NRC INTEGRATED INSPECTION REPORT 50-334/02-05, 50-412/02-05

Dear Mr. Bezilla:

On June 29, 2002, the NRC completed an inspection at your Beaver Valley Units 1 & 2. The enclosed report documents the inspection findings which were discussed with you and members of your staff on July 8, 2002.

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, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of the low safety significance and because the issue has been entered into your corrective action program, the NRC is treating the issue as a Non-Cited violations, in accordance with Section VI.A of the NRC's Enforcement Policy. If you deny the Non-Cited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, 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 facility.

The NRC has increased security requirements at Beaver Valley in response to terrorist acts on September 11, 2001. Although the NRC is not aware of any specific threat against nuclear facilities, the NRC issued an Order and several threat advisories to commercial power reactors to strengthen licensees' capabilities and readiness to respond to a potential attack. The NRC continues to monitor overall security controls and will issue temporary instructions in the near future to verify by inspection the licensee's compliance with the Order and current security regulations.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures 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 Web site at http://www.nrc.gov/reading-rm.html (the Public Electronic Reading Room).

Sincerely,

/RA/

John F. Rogge, Chief
Projects Branch No. 7
Division of Reactor Projects

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

Enclosures: Inspection Report 50-334/02-05; 50-412/02-05
Attachments: 1) Supplemental Information

cc w/encl:
J. Lash, Plant General Manager
F. von Ahn, Director, Plant Engineering
T. Cosgrove, Director, Work Management
R. Donnellon, Director, Maintenance
M. Pearson, Director, Director Services and Projects
L. Freeland, Manager, Nuclear Regulatory Affairs & Corrective Actions
M. Clancy, Mayor, Shippingport, PA
Commonwealth of Pennsylvania
State of Ohio
State of West Virginia

Distribution w/encl:
Region I Docket Room (with concurrences)
D. Kern, DRP - NRC Resident Inspector
H. Miller, RA
J. Wiggins, DRA
J. Rogge, DRP
S. Barr, DRP
H. Nieh, OEDO
D. Collins, PM, NRR
R. Clark, Backup PM, NRR

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REGION I

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

Report Nos.	50-334/02-05, 50-412/02-05
Licensee:	FirstEnergy Nuclear Operating Company
Facility:	Beaver Valley Power Station, Units 1 and 2
Location:	Post Office Box 4 Shippingport, PA 15077
Dates:	May 12, 2002 - June 29, 2002
Inspectors:	D. Kern, Senior Resident Inspector G. Smith, Resident Inspector N. Perry, Senior Project Engineer S. Barr, Senior Project Engineer G. Smith, Senior Physical Security Inspector J. McFadden, Health Physicist J. Herrera, Project Engineer
Approved by:	J. Rogge, Chief, Projects Branch 7 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000334-02-05; IR 05000412-02-05; FirstEnergy Nuclear Operating Company; on May 12-June 29, 2002; Beaver Valley Power Station; Units 1 & 2. Surveillance Testing.

The inspection was conducted by resident inspectors, a regional health physics inspector, regional security specialist, and regional projects inspectors. The inspection identified one Green finding, which was a Non-Cited violation. The significance of most findings is indicated by their color (green, white, yellow, red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be "green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website http://www.nrc.gov/NRR/OVERSIGHT/index.html.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- **Green** The inspectors identified a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to promptly correct a condition adverse to quality on the Unit 2 turbine driven auxiliary feedwater (TD AFW) pump. In October 2001, inspectors determined that a Unit 1 TD AFW pump critical operational parameter (turbine bearing oil reservoir level) was not properly controlled. This condition could result in inadequate oil lubrication to the turbine bearing and an increase in plant risk due to eventual unavailability of the Auxiliary feedwater pump. The condition was applicable to both Unit 1 and Unit 2. Corrective actions were relatively simple and were promptly implemented for Unit 1. The inspectors identified that Unit 2 corrective actions performed to date were inaccurate and the remaining corrective actions were not scheduled for completion until December 2002.

  This finding was of very low significance because the Auxiliary feedwater pump oil level was found to be adequate and the pump was not inoperable. (Section 1R22)

B. Licensee Identified Violations

None.

Report Details

SUMMARY OF PLANT STATUS: Unit 1 operated at 100 percent power throughout the inspection period.

Unit 2 began this inspection period at 100 percent power. On May 24, operators shut down Unit 2 to 3 percent power (Mode 2) for a planned maintenance outage (Section 1R13). The turbine was synchronized to the offsite power distribution grid on May 26 and achieved full power on May 27. On May 29, operators performed an unplanned power reduction to 42 percent power to repair a cooling water leak on the 'A' heater drain pump motor (Section 1R13). An May 30, operators restored full power.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

.1 Hot Weather Preparations

a. Inspection Scope

The inspectors reviewed the station's seasonal preparations for hot weather to determine whether appropriate procedures, maintenance, and evaluations were performed to support continued mitigating system operability and minimize plant risk associated with hot weather related initiating events. Hot weather and corresponding warm river water (RW) temperatures pose challenges to various mitigating systems and increase the likelihood of initiating events. Material condition and heat exchanger performance of the Unit 1 RW system, Unit 2 service water (SW) system, and Units 1&2 circulating water systems were evaluated. During this inspection period, Unit 2 condenser vacuum frequently fell below the low vacuum alarm setpoint due to the effects of warm weather. Additionally, both units recently experienced elevated main feedwater (FW) pump motor bearing temperatures, some of which required rapid power reductions, as documented in NRC Inspection Reports 50-334(412)/02-02. The inspectors evaluated bearing temperatures to verify corrective actions remained effective. The inspectors interviewed station personnel, performed partial system walkdowns, reviewed completed test and maintenance documents, and observed portions of the activities listed below to determine whether equipment performance was effectively maintained as specified by the acceptance criteria in the listed procedures.

- 1/2 Operational Surveillance Test (OST) 30.19A, "Main Intake Structure 'A' Bay Silt Check and Bay Cleaning," Rev. 2
- 1/2 OST-30.19C, "Main Intake Structure 'C' Bay Silt Check and Bay Cleaning," Rev. 2
- 1/2 OST-30.19D, "Main Intake Structure 'D' Bay Silt Check and Bay Cleaning," Rev. 2
- 1/2 OST-30.19E, "Alternate Intake Structure 'A' Bay Silt Check and Bay Cleaning," Rev. 2
- 1 Beaver Valley Test 1.30.3, "River Water Heat Exchanger Performance Program," Rev. 3
- 1 Operating Manual (OM)-30.4.AJ, "BV-1 Asiatic Clam and Zebra Mussel Chemical Treatment Program," Rev. 15

- 2OM-26.4.AAK, “Condenser Vacuum Low/Low-Low,” Rev. 8
- Unit 1&2 Condenser Parameter Monitoring Log Sheets
- 1 Temporary Operating Procedure-02-04, “Clearing Component Cooling-Turbine Heat Exchangers [1CC-E-3A, B or C] with River Water Outlet Isolation Valve Leakby,” Rev. 0
- Plant Engineering Summer Readiness Report - 2002

Station management directed engineers to develop a formal hot weather preparation procedure. As an interim measure, engineers generated a list of known equipment deficiencies which could effect mitigating system operability or initiate a plant transient. The inspectors reviewed the schedule for correcting these deficiencies and determined that, in general, work was properly prioritized.

b. Findings

No findings of significance were identified.

.2 Adverse River Conditions

a. The inspectors reviewed the station’s preparation and response to high river water level and increased debris (e.g., silt, leaves, branches) to determine whether appropriate procedures, maintenance, and evaluations were performed to support continued mitigating system operability and minimize plant risk associated with hot weather related initiating events. On several occasions, planned preventive maintenance on service water motorized strainers (2SWS-STRM47, 48) had to be postponed due to the adverse river water conditions. The bypass strainers quickly plugged with river debris, and were unable to provide sufficient seal water flow to the service water pumps when placed in service to support isolating the motorized strainers (CR 02-4390). The inspectors verified operators maintained adequate seal water flow for service water systems (SWS) pump operability and properly implemented 1/2OM-53C.4A.75.2, “Acts of Nature - Flood,” Rev. 18, when during periods of adverse river conditions.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments

a. Inspection Scope

Unit 1 OST-30.1A, “[1WR-P-9A] Auxiliary River Water Pump Test ,” Rev. 24, temporarily increases plant risk due to associated river water (RW) system configuration changes. The inspectors performed a partial system walkdown of the RW system to verify unaffected portions of the RW system remained available. The inspectors reviewed the system alignment to verify that it was aligned properly as described in OM Figures 30-1, 30-2, 30-3, 30-4 and procedure 1OM-30.3.B.1, “Valve List 1RW”, Rev. 29. In addition, the inspectors reviewed condition report (CR) 02-03689, the system health report issued 4th quarter, 2001, daily plant status report, and the recent operating logs to identify recent

operational evolutions involving the RW system. The RW system was selected because it is a risk important system.

The Unit 2 main condenser steam jet air ejector radiation monitor (2ARC-RQ100), which would be the first indication of a steam generator (SG) tube leak, became inoperable in early May 2002. The inspectors performed a partial system walkdown of the Unit 2 gaseous waste system (GWS) and liquid waste radiation monitoring systems to verify that the backup indications of a SG tube leak were operable and properly aligned. The inspectors verified components were aligned as specified in 2OM-19.3.B.1; "Valve List - 2GWS." Rev. 8; OM Figure 14A-1, "Reactor Plant Sample," Rev 13; OM Figure 19-2, "Gaseous Waste Disposal Piping," Rev. 6; OM 25-1, "Steam Generator Blowdown," Rev. 11, and OM Figure 26-3, "Condenser Air Removal & Gland Exhaust," Rev. 6.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors reviewed the Unit 1 Updated Fire Protection Appendix 'R' Review, Rev. 16, and the Unit 2 Fire Protection Safe Shutdown Report, Addendum 18, and identified the following risk significant areas:

- Unit 1 Communication equipment and relay room (fire area zone CR-3)
- Unit 1 Intake Structure Cubicles (fire area zone IS-1 through IS-4)
- Unit 2 Control Building Main Control Room (fire area zone CB-3)
- Unit 2 Rod Control and Cable Tunnel (fire area zone CV-3)
- Unit 2 Control Building Instrumentation and Relay Area (fire area zone CB-1)
- Unit 2 'DF' Emergency Switchgear Room (fire area zone SB-2)

The inspectors reviewed the fire protection conditions of the above listed areas in accordance with the criteria delineated in Nuclear Power Administrative Manual, 1/2-ADM-1900, "Fire Protection," Rev. 0. Control of transient combustibles, material condition of fire protection equipment, and the adequacy of any fire protection impairments and compensatory measures were included in these plant specific reviews.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors walked down Unit 1 and 2 plant areas, with safety-related equipment, susceptible to flooding due to high river water level, and monitored plant management's response to current springtime river water level changes. The intake structure and the alternate intake structure were inspected since they contain risk significant systems potentially affected by external flooding. The inspectors verified that penetrations were properly sealed, watertight doors between flood areas were adequate, the condition of flood barriers was acceptable, and the procedures for coping with flooding could reasonably be used to achieve the desired actions. The inspectors reviewed the following licensee documents :

- 1/2OM-53C.4A.75.2, "Acts of Nature - Flood", Rev. 17
- 1/2OST-30.21A (and B), "Group 1 (and 2) Flood Door Seal System Operability Check," Rev. 1 (most recent two completed procedures done in 9/12/2001 and 5/1/2002
- Maintenance Rule System Basis Document Unit 1/2 Shared Structures, Rev. 2
- Licensing Requirements Manual, Section 6.3, Flood Protection
- System Health Report, Unit 1, River Water, Fourth Quarter 2001
- System Improvement Plan, Unit 1, River Water System

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors evaluated Maintenance Rule (MR) implementation for the issues listed below. Specific attributes reviewed included MR scoping, characterization of failed structures, systems, and components (SSCs), MR risk categorization of SSCs, SSC performance criteria or goals, and appropriateness of corrective actions. The inspectors verified that the issues were addressed as required by 10 Code of Federal Regulations (CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance of Nuclear Power Plants," and System and Performance Engineering Administrative Manual 3.2, " Maintenance Rule Program Administration," Rev. 3. For selected systems, the inspectors observed maintenance rule steering committee (MRSC) meetings to determine whether system performance was properly dispositioned for MR category (a)(1) or (a)(2) performance monitoring.

- In October 1997, the Unit 1 120 volt alternating current distribution system was placed in category (a)(1) status due to repeated main fuse failures of vital bus inverter 1-3. Corrective actions, including inverter replacement were effective in correcting the fuse failure issue. Engineers determined that the system now met established performance goals and returned the system to category (a)(2) performance monitoring.

- In December 2000, the Unit 1 main turbine system was placed in category (a)(1) performance monitoring status due to excessive unplanned plant capacity loss (UPCL). An electro hydraulic control power supply failure which resulted in a reactor

trip and failure of the turbine to latch during a startup accounted for the UPCL. Corrective actions including design change 2431, "AEH Upgrades Project," newly established preventive maintenance, and power supply replacements improved system reliability and the system was returned to category (a)(2) performance monitoring.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the scheduling and control of maintenance activities in order to evaluate the effect on plant risk. This review was against criteria contained in Nuclear Power Division Administrative Procedure (NPDAP) 7.12, "Non-outage Planning, Scheduling, and Risk Assessment," Rev. 11; NPDAP 8.30, "Maintenance Rule Program," Rev. 6; and Conduct of Operations Procedure 1/2OM-48.1.I, "Technical Specification Compliance," Rev. 9. The inspectors reviewed the routine planned maintenance, restoration actions, and/or emergent work for the following equipment removed from service:

- On May 24, Unit 2 operators reduced power to 3 percent and took the main turbine off line to repair a leak on the nitrogen supply line to the main transformer. Mechanics determined the leak resulted from an inadequate weld performed during the February 2002 refueling outage. Additional risk related activities performed during the downpower included alignment of 2FWS-P21A2 motor to address elevated bearing temperature, cleaning of the 'C' condenser waterbox, 2HDH-P21B shaft repacking, repair of feedwater receiver level control valve 2HDH-LCV-106A1, and partial implementation of engineering change package (ECP) 02-0270 which modified the condensate polishing air compressor.

- On May 29, Unit 2 operators performed an unplanned power reduction to 42 percent to repair heater drain pump 2HDH-P21A, which had developed a cooling water leak to its motor. Operators also repaired a steam leak near FW reheater drain receiver tank 2HDH-TK23C. Additional risk related activities included surveillance testing on the emergency response facility diesel generator, 'B' train solid state protection system, and supplemental leakage and collection system fan 2HVS-FN204B.

- Emergent repair of Unit 2 'B' steam generator atmospheric steam dump valve 2SVS-PCV-101B.

- Planned testing and subsequent replacement of RV-1FW-130, the suction line relief valve for the dedicated auxiliary feedwater pump (1FW-P-4). Mechanics determined the relief valve was inoperable due to excessive corrosion. Reevaluation of the relief valve test program and extent of condition considerations were documented in CR 02-0494.

- Preventive maintenance on the 'B' low pressure safety injection (LPSI) pump. This activity involved verification of torque on the wedge control rods/securing nuts and is performed on a periodic basis in conjunction with the quarterly pump surveillance (1OST-11.2, "Safety Injection Pump Test," Rev 14). The LPSI pump was declared inoperable and unavailable during past OST performances because the pump control switch was placed in pull-to-lock (human clearance) for personnel safety during the torque verification. Based on a discussion between operators and maintenance personnel, the decision was made to forgo the human clearance as it was deemed unnecessary for personnel safety while also minimizing station risk.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions

(Closed) Licensee Event Report (LER) 05000334/01-04: Manual Reactor Trip Due to Loss of Station Instrument Air.

Human performance deficiencies were the primary causes of this event as discussed in NRC Inspection Report Nos. 50-334(412)/01-10. No new issues were revealed by the LER. This LER was closed during an onsite review.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability evaluations in order to determine that proper operability justifications were performed for the following items. In addition, where a component was determined to be inoperable, the inspectors verified the technical specification (TS) limiting condition for operation implications were properly addressed.

- Unit 2 main condenser steam jet air ejector radiation monitor (2ARC-RQ100) was declared inoperable due to frequent indication spikes and associated alarms. Chemists sampled SG blowdown effluent and verified a high radiation condition did not exist. The inspectors verified that alternate SG blowdown and gaseous waste effluent radiation monitoring instruments remained operable. The inspectors also determined that no TS or licensing requirement actions applied. 2ARC-RQ100 remained inoperable after corrective maintenance to replace an amplifier and detector were ineffective. Operators increased the SG blowdown sample frequency to daily as a compensatory measure for the inoperable radiation monitor.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed permanent modifications completed in September 2001 on Unit 1 safety injection valve SI-V890C. The modifications resulted in the replacement of the valve motor with a smaller motor and the bypass of the close torque switch (also for SI-V890A and B). The inspectors verified that the following items were addressed by the licensee: electrical energy requirements; seismic qualifications; environmental qualifications; valve response time; and acceptability of conclusions that evaluation in accordance with 10 CFR 50.59 was not performed. The inspectors reviewed completed paperwork and discussed the modifications with the appropriate system engineer. The inspectors reviewed the following licensee documents :

- ECP-00056-ESTOC, "MOV-1SI-890C - Motor Replacement," Rev. 1
- ECP-00056-ISTOC, "MOV-1SI-890C - Motor Replacement," Rev. 1
- ECP-00116-ESTOC, "Bypass Close Torque Switch For MOV-1SI-890A(B)," Rev. 0
- 1OST-1.10, "Cold Shutdown Valve Exercise Test," Rev. 22
- 1/2-CMP-E-75-021, "Testing of Motor Operated Valves," Rev. 3
- 1OST-1.10, "Cold Shutdown Valve Exercise Test," Rev. 19

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed and/or observed several post-maintenance tests (PMTs) to ensure: 1) the PMT was appropriate for the scope of the maintenance work completed; 2) the acceptance criteria were clear and demonstrated operability of the component; and 3) the PMT was performed in accordance with procedures. The following PMTs were observed:

- Multiple starts and voltage/current monitoring of 2HVS-ACU207A in accordance with Work Order 02-015612-001, following repairs to the power supply breaker.

- 2OST-30.3, "Service Water Pump (2SWS*P21B) Test," Rev. 22, following motor inspection, test, and lubrication in accordance with 1/2-PMP-E-75-001, 4160 BAC Motor Inspection and Lubrication," Rev. 1. Although the pump was operable, engineers expressed concern that motor vibrations had been elevated since a recent motor overhaul by a vendor. Engineers scheduled the motor for removal and corrective maintenance the week of 7/15/02.

- 1OST-7.6, "Centrifugal Charging Pump Test (1CH-P-1C)," Rev. 23, following replacement of the 1C Charging Pump.

- 2OST-47.3B, "Containment Penetration and American Society of Mechanical Engineers (ASME) Section XI Valve Test," Rev. 28, following hydraulic motor, control panel, controller logic board, and relief valve replacement for 2SVS-PCV101B.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed and reviewed the following OSTs and maintenance surveillance procedures (MSPs), concentrating on verification of the adequacy of the test to demonstrate the operability of the required system or component safety function.

- 2OST-24.4, "Auxiliary Feed Pump [2FWE*P22] Quarterly Test, Rev. 42.
- 1OST-11.2, "Safety Injection Pump Test," Rev 14.
- 1MSP-1.05-I, "Solid State Protection System Train B Bi-Monthly Test," Rev 15.

b. Findings

Introduction

The inspectors identified a Non-Cited Violation (NCV) for failure to promptly correct a condition adverse to quality on the Unit 2 turbine driven auxiliary feedwater (TD AFW) pump. In October 2001, inspectors determined that a Unit 1 TD AFW pump critical operational parameter (turbine bearing oil reservoir level) was not properly controlled (see NRC Inspection Report 50-334(412)/01-09). The condition was applicable to both Unit 1 and Unit 2. Corrective actions were relatively simple and were promptly implemented for Unit 1. The inspectors identified that Unit 2 corrective actions performed to date were inaccurate and the remaining corrective actions were not scheduled for completion until December 2002. The inspectors determined the finding was of very low safety significance (Green) because the TD AFW pump remained operable. However, if left uncorrected, the potential remained for the failure of the TD AFW pump to perform its intended function when called upon.

Description

During 2OST-24.4, the NRC inspectors observed that the turbine outboard bearing oil level sightglass did not have level marks for high and low oil level as specified in vendor technical manual 225022.180-208-001, "Turbine Driven Auxiliary Feedwater Pump Instruction Manual," Rev. Y, Section 8, "Lubrication." The manual specifies turbine oil level be maintained between 2.625 and 3 inches below centerline of the turbine shaft to preclude bearing damage during turbine startup. 2OST-24.4 directs operators to verify "oil level is visible" in turbine oilers, but does not address a specified oil level band. The inspectors determined that oil level was currently 3 inches below the shaft centerline and an active oil leak created the potential to reduce oil level further.

The inspectors previously identified the same issue on the Unit 1 TD AFW pump as documented in NRC Inspection Report 50-334(412)/01-09. During investigation of the Unit 1 issue, engineers determined the issue applied to Unit 2 and identified appropriate

corrective actions to mark the oil level sightglass and revise procedures (CR 01-6834). The inspectors reviewed CR 01-6834 and noted corrective actions were not due until December 2002. Temporary markings on the Unit 2 TD AFW oil sightglass were inaccurate and incomplete, and procedures were not revised. The inspectors determined that corrective action timeliness was not commensurate with the TD AFW pump's importance to safety.

Analysis

The inspectors determined the safety significance of this finding was very low (Green) using the phase one screening process of IMC 0609, appendix 'A'. The issue is more than minor because it degraded the reliability of the TD AFW pump to respond to an initiating event and thereby affected Equipment Performance under the Mitigation System cornerstone. The assumption made was that if there was an oil level greater than the maximum or an oil leak in the lubrication system, having no minimum oil level marking in the sight glass, the operators would not have the ability to recognize the degraded condition of the TD AFW pump. Turbine oil level outside of the vendor specified band could cause inadequate lubrication and pump failure when called upon for it's intended safety function. The inspectors verified the as found turbine oil level was within the vendor specified band. Therefore, the auxiliary feedwater pump remained operable and did not represent an actual loss of safety function.

Enforcement

10 CFR appendix B Criterion XVI, "Corrective Actions" specifies that measures shall be established to assure that conditions adverse to quality such as deficiencies are promptly identified and corrected. Contrary to this requirement, from October 2001 until June 2002, corrective actions for deficient Unit 2 TD AFW pump oil level indication were not promptly corrected. This violation is being treated as a NCV consistent with Section VI. A.1 of the NRC Enforcement Policy **(NCV 50-334/02-05-01)**. This issue was entered into the licensee's corrective action program as CRs 02-5067, 5068.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed a temporary modification (TM) and associated implementing documents to verify the plant's design basis and effected system or component operability were maintained. Nuclear Power Division Administrative Procedure 7.4, "Temporary Modifications," Rev. 8, specified requirements for development and installation of TMs. The inspectors reviewed the TM associated with the following items:

- TM 02-02-06 was installed on 2SVS-PCV101B, Unit 2 'B' steam generator atmospheric steam dump (ASD) valve. The ASD is a hydraulically controlled valve located in the main steam valve room. This modification installed a jumper wire on the control circuitry of the valve's associated hydraulic motor. The jumper effectively prevented a low current signal path which had previously been causing contact film development on the pressure switch (PS-2) contact. This pressure switch contact

functioned to secure the ASD valve hydraulic motor when the valve had stroked fully open. The resulting film on the PS-2 contact caused a high resistance in the circuit and ultimately prevented the securing of the hydraulic motor following valve operation.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control to Radiologically Significant Areas

a. Inspection Scope

The inspectors reviewed the effectiveness of access controls to radiologically significant areas. On May 21, 2002, the inspectors toured the radiologically controlled areas (RCAs) including: various elevations of the auxiliary building, solid radioactive waste building, and the health physics (HP) access control point of Unit 1 and, in Unit 2, the HP access control point, the radiological work permit office, and various elevations in the auxiliary building and in the fuel and decontamination building.

During this RCA walk-down, the inspectors observed and verified the appropriateness of the radiological safety controls for active radiological work permits (RWPs). The inspectors reviewed posting, labeling, and barricading (as appropriate) of radiation, contamination and high radiation areas, and the status of locked high radiation areas. The inspectors also observed activities at the main RCA-access-control points to verify compliance with requirements for RCA entry and exit, wearing of dosimetry, and issuance and use of alarming radiation dosimeters. During this inspection week, the inspectors interviewed various HP supervisors and technicians on the appropriateness of aspects of radiological access control including RWP-prescribed controls and job coverage.

On May 22, 2002, the inspectors reviewed RWPs and associated records in the RWP office and observed the radiological access control activities performed in this office.

The inspection included a selective review of RWPs, procedures, and documents (as listed in the List of Documents Reviewed section) to evaluate the adequacy of radiological controls.

The inspection included a selective review of seven CRs (i.e., CR 02-01462, 02-01567, 02-01692, 02-01723, 02-01746, 02-03798, and 02-03934) for the appropriateness and adequacy of event categorization, immediate corrective action, corrective action to prevent recurrence, and timeliness of corrective action.

The review of the above-cited documents and activities was against criteria contained in: 10CFR 20.1201 (Occupational dose limits for adults), 20.1204 (Determination of internal

exposure), 20.1208 (Dose equivalent to an embryo/fetus), Subpart F (Surveys and monitoring), 20.1601 (Control of access to high radiation areas), Subpart H (Respiratory protection and controls to restrict internal exposures in restricted areas), 20.1902 (Posting requirements), site TS 6.12 (High Radiation Area), and site procedures.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls

a. Inspection Scope

The inspectors reviewed the effectiveness of the licensee's program to maintain occupational radiation exposure as low as is reasonably achievable (ALARA).

During the tour in the RCA on May 21, 2002, the inspectors evaluated the use of posting to identify low dose areas and the use of shielding for adequacy in providing for ALARA measures.

On May 23, 2002, the inspectors met with one of the ALARA health physicists and discussed the collective radiation dose results for 2001 for each unit, the current actual vs. projected collective radiation dose results for 2002 for each unit, the collective radiation dose for the last Unit 2 refueling outage (2R09), and dose-reduction initiatives including the plans for zinc addition to the reactor coolant systems for each unit. The inspectors noted that the actual collective radiation dose for Unit 2 for the year of 2001 was 2.188 person-rem.

The inspectors performed a selective examination of procedures and documents (as listed in the List of Documents Reviewed section) for regulatory compliance and for adequacy of control of radiation exposure.

The review was against criteria contained in 10 CFR 20.1101 (Radiation protection programs), 10 CFR 20.1701(Use of process or other engineering controls) and in site procedures.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

The inspectors reviewed the program for HP instrumentation to determine the accuracy and operability of the instrumentation.

During the plant tour on May 21, 2002, the inspectors reviewed field instrumentation utilized by HP technicians and plant workers to measure radioactivity and radiation levels, including portable field survey instruments, hand-held contamination frisking instruments,

and continuous air monitors. The inspectors conducted a review of the instruments observed in the toured areas, specifically verification of current calibration, of appropriate source checks, and of proper function. The inspectors reviewed the licensee's 10 CFR 61 source term reviews to determine if the calibration sources used for contamination monitoring equipment were representative of the current plant source terms, if scaling factors were used to account for hard-to-detect radionuclides, and if the source terms were reviewed on a periodic basis for changes which could require changes in scaling factors.

On May 22, 2002, the inspectors discussed the whole-body counter calibration procedure and the adequacy of the current calibration results with the supervisor of that operation. On the same day, the inspectors met with the HP supervisor responsible for HP detection instrumentation and discussed the adequacy of the calibration processes used and the calibration results for the radioactive-contamination-monitoring equipment used at the site. On May 23, 2002, the inspectors met with another HP supervisor to discuss the contaminated-tool-control program and the methods used to periodically check the detection efficiencies of the radioactive-contamination-monitoring equipment used at the site for the current mix of radionuclides.

The inspectors performed a selective examination of procedures, records, and documents (as listed in the List of Documents Reviewed section) for regulatory compliance and adequacy.

The review was against criteria contained in 10 CFR 20.1501, 10 CFR 20 Subpart H, site TSs, and site procedures.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

3PP1 Access Authorization Program

- Inspection Scope

The following activities were conducted to determine the effectiveness of the licensee's behavior observation portion of the personnel screening and fitness-for-duty programs as measured against the requirements of 10 CFR 26.22 and the Licensee's Fitness for Duty Program documents.

Five supervisors representing the Radiation Protection, Security, Maintenance, and Operations departments were interviewed on June 19, 2002, regarding their understanding of behavior observation responsibilities and the ability to recognize aberrant behavior traits. Two Access Authorization/Fitness-for-Duty self-assessments, two semi-annual Fitness for Duty performance data reports, an audit, and event reports and loggable events for the four previous quarters were reviewed during June 18-20, 2002. On June 19, 2002, five individuals who perform escort duties were interviewed to evaluate their knowledge level of those duties. Behavior observation training procedures and records were reviewed on June 18, 2002.

- Findings

No findings of significance were identified.

3PP2 Access Control

a. Inspection Scope

The following activities were conducted during the inspection period to verify that the licensee has effective site access controls, and equipment in place designed to detect and prevent the introduction of contraband (firearms, explosives, incendiary devices) into the protected area as measured against 10 CFR 73.55(d) and the Physical Security Plan and Procedures.

Site access control activities were observed, including personnel and package processing through the search equipment during peak ingress periods on June 18 and 19, 2002. On June 19, 2002, testing of all access control equipment; including metal detectors, explosive material detectors, and X-ray examination equipment was observed. The Access Control Event Log, an audit, and three self-assessments were also reviewed.

b. Findings

No findings of significance were identified.

3PP4 Security Plan Changes

a. Inspection Scope

An in-office review was conducted of changes to the Physical Security Plan, identified as Revision 41 to Issue 4, submitted to the NRC on June 14, 2001, in accordance with the provisions of 10 CFR 50.54(p). The review was conducted to confirm that the changes were made in accordance with 10 CFR 50.54(p), and did not decrease the effectiveness of the plan.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspector reviewed the licensee's programs for gathering, processing, evaluating, and submitting data for the Fitness-for-Duty, Personnel Screening, and Protected Area Security Equipment Performance Indicators. The review included the licensee's tracking

and trending reports, personnel interviews and security event reports for the Performance Indicator data collected from the 2nd quarter of 2001 through the 1st quarter of 2002.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed a selected sample of condition reports within each of the baseline inspection activities documented in this report to determine whether problems were properly identified and resolved.

b. Findings

The inspectors identified a Non-Cited Violation (NCV) for failure to promptly correct a condition adverse to quality on the Unit 2 turbine driven auxiliary feedwater (TD AFW) pump (1R22).

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Mark Bezilla and other members of licensee management following the conclusion of the inspection on July 8, 2002. The licensee acknowledged the findings presented.

The licensee did not indicate that any of the information presented at the exit meeting was proprietary.

.2 Site Management Visit

On June 19-21, 2002, Mr. John Rogge, Chief, Reactor Projects Branch 7, toured Beaver Valley Power Station and met with station personnel to review plant performance.

.3 Regulatory Conference to Discuss Preliminary Yellow Finding

On May 15, 2002, Mr. Lew Myers, Chief Operating Officer, FENOC, and other members of his staff met with J. Wiggins, Deputy Regional Administrator, Region 1 and other NRC staff in King of Prussia, Pennsylvania, to discuss a preliminary yellow finding regarding personal home alerting devices which are part of the alert notification system.

.4 FirstEnergy Nuclear Operating Company Senior Management Changes

On June 20, 2002, FENOC announced three permanent senior management changes as presented below:

Jim Lash, Director of Personnel Development, has been named Plant General Manager, replacing Bill Pearce, who recently was appointed to the newly created position of Vice President - FENOC Oversight. His appointment is effective immediately.

Tom Cosgrove, Director of FENOC Oversight and Process Improvement, assumes the new position of Director of Work Management. His appointment is effective immediately.

Pete Sena, Shift Manager, has been promoted to the position of Operations Manager. His appointment is effective immediately.

ATTACHMENT

SUPPLEMENTAL INFORMATION

LIST OF PERSONS CONTACTED

Licensee:

M. Bezilla	Vice President
T. Cosgrove	Director, Work Management
R. Donnellon	Director, Maintenance
L. Freeland	Manager, Nuclear Regulatory Affairs & Corrective Actions
J. Lash	Plant General Manager
M. Pearson	Director, Services & Projects
P. Sena	Manager, Nuclear Operations
B. Sepelak	Regulatory Affairs
J. Sipp	Health Physics Manager
F. von Ahn	Director, Plant Engineering

LIST OF ITEMS OPENED AND CLOSED

Opened/Closed

50-412/02-05-01	NCV	Inaccurate and Untimely Corrective Actions for Control of Unit 2 Turbine Driven Auxiliary Feedwater Pump Turbine Oil Level (Section 1R22)

Closed

50-334/01-04	LER	Manual Reactor Trip Due to Loss of Station Instrument Air (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

FirstEngergy Fitness-for-Duty Training Requirements
Fitness-for-Duty Performance Data Report, January-June 2001
Fitness-for-Duty Performance Data Report, June-December 2001
BV-C-01-02, QA Assessment
BV-C-02-02, QA Assessment
Access Control to Radiologically Significant Areas

- RWP 102-1047, Remove boral assembly from spent fuel pool/ship boral coupon, Rev. 0
- RWP 102-1032,Inspect/add oil/troubleshoot/replace spare compressor if needed/entry per NSS log, Rev. 0
- Procedure RP 4.2, Bioassay administration, Rev. 2
- Procedure RP 7.1, Contamination survey methods, Rev. 3
- Procedure RP 8.1, Radiological work permit, Rev. 14
- Procedure RP 8.3, Radiation barrier key control, Rev. 3
- Procedure ½-ADM-1627, Bioassay program, Rev. 0
- Radiation Protection Program Core Responsibilities

- Nuclear Quality Assessment Surveillance Results Report No. 2-RDP-02-02, Health Physics, February 5, 2002
- Nuclear Quality Assessment Surveillance Results Report No. 2-RDP-02-02, Health Physics, February 6, 2002
- Nuclear Quality Assessment Surveillance Results Report No. 2-RDP-03-02, Health Physics, February 13, 2002
- Nuclear Quality Assessment Surveillance Results Report No. 2-RDP-04-02, Health Physics, April 19, 2002

ALARA Planning and Controls

- Health Physics Manual, Appendix 11, ALARA program, Rev. 2
- Procedure RP 8.1, Radiological work permit, Rev. 14
- Procedure RP 8.5, ALARA review program, Rev. 4
- Minutes for ALARA committee meeting 02-01 dated January 15, 2002
- Minutes for ALARA committee meeting 02-02 dated January 29, 2002
- Minutes for ALARA committee meetings 02-03 and 02-04 dated February 15, 2002
- Minutes for ALARA committee meeting 02-05dated February 16, 2002
- ALARA report for fourteenth refueling outage at Unit 1 dated April 28, 2002

Radiation Monitoring Instrumentation and Protective Equipment

- Procedure RIP 4.23, Eberline personnel contamination monitor (PCM-2), Rev. 3
- Procedure ½-HPP-4.04.025, Calibration and use of the Bicron SPM-906
- Procedure ½-HPP-6.02.002, Fastscan calibration, Rev. 0
- Procedure RDP 2.1, Fastscan routine operation, Rev. 3
- Fastscan calibration records, February 11 and 12, 2002
- SPM-906 calibration records for January 2002
- SAM-11 daily alarm check records for April 2002
- SAM-11 calibration records, September 24, 2001 to March 7, 2002
- Records of reactor coolant system activity from May 2001 to May 2002 for Units 1 and 2
- Fastscan minimum detectable activity report for 2001
- Memorandum, SAM-11 operating parameters, January 28, 1999
- ERS-DKY-88-033, Average beta/gamma energy for PCM-1B, April 7, 1998
- ERS-AJL-98-003, PCM-2 internal exposure monitoring evaluation, February 28, 2001
- ERS-RJF-00-002, PCM-2 radon subtraction mode of operation, January 18, 2000
- ERS-RJF-00-004, Basis for PCM type instrument calibration and periodic response check, May 19, 2000
- Interoffice memorandum titled BVPS Unit 1 and Unit 2 scaling factors dated December 26, 2001
- Action plan for screening all equipment at the site tool facility with target completion date of June 15, 2002

LIST OF ACRONYMS

ASD	Atmospheric Steam Dump
CFR	Code of Federal Regulations
CR	Condition Report
ECP	Engineering Change Package
FENOC	FirstEnergy Nuclear Operating Company
FW	Feedwater
GSW	Gaseous Waste System
HP	Health Physics
LER	Licencee Event Report
LPSI	Low Pressure Safety Injection
MR	Maintenance Rule
MRSC	Maintenance Rule Steering Committee
MSP	Maintenance Surveillance Procedure
OM	Operating Manual
OS	Occupational Radiation Safety
OST	Operational Surveillance Test
PMT	Post Maintenance Test
RCA	Radiologically Controlled Area
RW	River Water
RWP	Radiological Work Permit
SG	Steam Generator
SSC	Structures, Systems, and Components
SW	Service Water
TD AFW	Turbine Drive Auxiliary Feedwater
TM	Temporary Modifiction
WO	Work Order