March 2, 2004

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 POWER STATION, UNIT 2 - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000412/2004002

Dear Mr. Pearce:

On January 30, 2004, the NRC completed a triennial fire protection inspection at your Beaver Valley Power Station Unit 2 facility. The enclosed report documents the inspection findings that were discussed on January 30, 2004, with you and other members of your staff.

This 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.

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We appreciate your cooperation. Please contact me at 610-337-5146 if you have any questions regarding this letter.

Sincerely,

/RA/

John F. Rogge, Chief
Electrical Branch
Division of Reactor Safety

Docket No. 50-412
License No. NPF-73
Enclosure: NRC Inspection Report 05000412/2004002

w/Attachment: Supplemental Information

cc w/encl:
J. Lash, Plant General Manager
V. Kaminskas, Director, Nuclear Maintenance
R. Mende, Director, Nuclear Work Management
T. Cosgrove, Director, Nuclear Engineering/Projects
L. Freeland, Manager, Nuclear Regulatory Affairs & Corrective Actions
M. Clancy, Mayor, Shippingport, PA
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Commonwealth of Pennsylvania
C. O'Claire, State Liaison to the NRC, State of Ohio
D. Hill, Chief Radiological Health Program, State of West Virginia

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U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

Docket No:	50-412
License No:	NPF-73
Report No:	05000412/2004002
Licensee:	FirstEnergy Nuclear Operating Company
Facility:	Beaver Valley Power Station, Unit 2
Location:	Post Office Box 4 Shippingport, Pennsylvania 15077
Inspection Period:	January 12 - 30, 2004
Inspectors:	Larry Scholl, Senior Reactor Inspector, DRS (Team Leader) Aniello Della Greca, Senior Reactor Inspector, DRS Keith Young, Senior Reactor Inspector, DRS Christopher Hott, Reactor Engineer (In-Training), DRS
Approved by:	John F. Rogge, Chief Electrical Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000412/2004-002; 01/12/2004 - 01/30/2004; Beaver Valley Power Station Unit 2; Triennial Fire Protection Inspection.

The report covered a two week team inspection by specialist inspectors. The team identified one unresolved item. 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.

A. NRC-Identified Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None

Report Details

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05, "Fire Protection." The objective of the inspection was to assess whether FirstEnergy Nuclear Operating Company (FENOC) has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the Beaver Valley Power Station (BVPS), Unit 2. The following fire areas (FAs) were selected for detailed review based on risk insights from the BVPS Unit 2 Individual Plant Examination (IPE) and Individual Plant Examination of External Events (IPEEE):

- Service Building Emergency Switchgear Room (FA SB-2)
- Primary Auxiliary Building (FA PA-4)
- Cable Tunnel (FA CT-1)
- Emergency Diesel Generator Room (FA DG-1)

This inspection was a reduced scope inspection in accordance with the March 6, 2003, revision to IP 71111.05, "Fire Protection." Issues regarding equipment malfunction due to fire-induced failures of associated circuits were not inspected. Criteria for review of fire-induced circuit failures are currently the subject of a voluntary industry initiative. The definition of associated circuits of concern used was that contained in the March 22, 1982, memorandum from Mattson to Eisenhut, which clarified the requests for information made in NRC Generic Letter 81-12.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems

1R05 Fire Protection

.1 Fire Area Boundaries and Barriers

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition and the adequacy of design of fire area boundaries, fire doors, and fire dampers. The team reviewed engineering evaluations, as well as surveillance and functional test procedures for selected items. The team also reviewed the licensee submittals and NRC safety evaluation reports (SERs) associated with fire protection features at Beaver Valley Power Station, Unit 2. Additionally, the team reviewed the design and qualification testing of selected barriers and reviewed surveillance procedures for structural fire barriers, penetration seals and structural steel. These reviews were performed to ensure that the passive fire barriers were properly maintained and met the licensing and design bases as described in the licensee submittals, NRC SERs, and the Beaver Valley Power Station Unit 2 Updated Final Safety Analysis Report (UFSAR).

b. Findings

No findings of significance were identified.

.2 Post-Fire Safe Shutdown Lighting and Communications

a. Inspection Scope

The team observed the placement and coverage area of eight-hour emergency lights throughout the selected fire areas to evaluate their adequacy for illuminating access and egress pathways and any equipment requiring local operation for post-fire safe shutdown. The team also reviewed preventive maintenance procedures and various documents, including the vendor manual and surveillance tests, to determine if adequate surveillance testing and periodic battery replacements were in place to ensure reliable operation of the emergency lights.

The team reviewed radio repeater location, power sources and preventive maintenance procedures to ensure fire department and operator communications could be maintained for fire fighting and post-fire safe shutdown conditions.

b. Findings

No findings of significance were identified.

.3 Programmatic Controls

a. Inspection Scope

During tours of the facility, the team observed the material condition of fire protection systems and equipment, the storage of permanent and transient combustible materials, and control of ignition sources. The team also reviewed the procedures that controlled hot-work activities and combustibles at the site. These reviews were accomplished to ensure that FENOC was maintaining the fire protection systems, controlling hot-work activities, and controlling combustible materials in accordance with the UFSAR, administrative procedures and other fire protection program procedures.

b. Findings

No findings of significance were identified.

.4 Fire Detection Systems and Equipment

a. Inspection Scope

The team reviewed the adequacy of the fire detection systems in the selected plant fire areas. This included a walkdown of the systems and review of the type of installed detectors as shown per location drawings. The team also reviewed licensee submittals and the NRC SERs associated with the selected fire areas. These reviews were performed to ensure that the fire detection systems for the selected fire areas were installed in accordance with the design and licensing bases of the plant. Additionally, the team reviewed fire detection surveillance procedures to determine the adequacy of the fire detection component testing and to ensure that the detection system would function as required.

b. Findings

No findings of significance were identified.

.5 Fixed Fire Suppression Systems

a. Inspection Scope

Carbon Dioxide Systems and Equipment

The team reviewed the adequacy of the cable tunnel (FA CT-1) and diesel generator building (FA DG-1) total flooding carbon dioxide (CO_2) systems by performing walkdowns of the systems and the room envelopes. The team also reviewed the design and installation specifications, NFPA 12, "Standard on Carbon Dioxide Extinguishing Systems," initial discharge testing and the adequacy of surveillance procedures. These reviews were performed to ensure that the total flooding CO_2 systems met the design and licensing bases as described in the licensee submittals and NRC SERs and that the system could perform its intended function in the event of a fire in either of these rooms.

b. Findings

No findings of significance were identified.

.6 Manual Fire Suppression Capability

b. Inspection Scope

The team walked down selected standpipe systems and observed portable extinguishers to determine the material condition of the manual fire fighting equipment and verify locations as specified in the pre-fire plans and fire protection program documents. The team reviewed electric and diesel fire pump flow and pressure tests to ensure that the pumps were meeting their design requirements. The team also

reviewed the fire main loop flow tests to ensure that the flow distribution circuits were able to meet the design requirements. The team inspected the fire brigade's protective ensembles, self-contained breathing apparatus (SCBA), and various fire brigade equipment to determine operational readiness for fire fighting.

The team reviewed pre-fire plans and smoke removal plans for the selected fire areas to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation, and to facilitate suppression of a fire that could impact safe shutdown.

The team performed in-plant walk downs to evaluate the physical configuration of electrical raceway and safe shutdown components in the selected fire areas to determine whether water from an inadvertent fire suppression system pipe rupture or from manual fire suppression activities in the selected areas could cause damage that could inhibit the ability to safely shut down the plant.

The team reviewed fire brigade initial training and continuing training course materials to verify appropriate training was being conducted for the station firefighting personnel. Additionally, the team reviewed selected fire drills and critiques to ensure that drills were being conducted in risk significant areas.

The team reviewed the qualifications of several fire brigade leaders and members to ensure that they had met and maintained the requirements to be fire brigade leaders and members.

b. Findings

No findings of significance were identified.

.7 Safe Shutdown Capability

a. Inspection Scope

The team reviewed the fire response procedures, alarm response procedures and operating procedures for the selected fire areas to evaluate the methods and equipment used to achieve safe shutdown following a fire. The team also reviewed valve operator number diagram (VOND) for post-fire safe shutdown systems to identify required components for establishing flow paths, to identify equipment required to isolate flow diversion paths, and to verify appropriate components were properly evaluated and included in the safe shutdown equipment list. The team also reviewed selected remote shutdown components and their control circuits to ensure that proper isolation was provided for remote shutdown capability, in the event of a fire affecting the control or relay room. The team performed field walkdowns to evaluate the protection of the equipment from the effects of fires.

Post-fire shutdown procedures for the selected areas were also reviewed to determine if appropriate information was provided to plant operators to identify protected equipment

and instrumentation and if recovery actions specified in post-fire shutdown procedures considered manpower needs for performing required actions. The team also reviewed training lesson plans for the alternative shutdown procedures, discussed training with licensed operators, reviewed selected remote shutdown equipment tests, reviewed the adequacy of shift manning, and evaluated the accessibility of the alternative shutdown operating stations and required manual action locations.

Specific procedures reviewed for alternate safe shutdown from outside the control room included the following:

2OM-56.C.4.B, Unit Supervisor Procedure, Rev. 19
2OM-56.C.4.C, NCO Procedure, Rev. 13
2OM-56.C.4.D, Nuclear Operator #1 Procedure, Rev. 16
2OM-56.C.4.E, Nuclear Operator #2 Procedure, Rev. 15
2OM-56.C.4.F-1, ASP Activation, Rev. 10

A procedure walkdown was performed for selected portions of these procedures. The walkdown was performed by a licensed operating crew and focused primarily on the portion of the procedure associated with achieving stable hot shutdown conditions. Plant operators were accompanied by NRC team members during the walkdown and the approximate time for critical steps, such as establishing makeup flow to the reactor vessel, were noted and evaluated to assess the ability of the operators to maintain plant parameters within procedural limits.

b. Findings

No findings of significance were identified.

.8 Safe Shutdown Circuits

a. Inspection Scope

The team reviewed power and control cable routing for a sample of components required for post-fire safe shutdown to determine if the cables were properly evaluated as part of the safe shutdown analyses in the USAR.

The team reviewed electrical fuse and circuit breaker coordination studies to ensure equipment needed to conduct post-fire safe shutdown activities would not be impacted due to a lack of coordination. The team confirmed that coordination studies had addressed multiple faults due to fire. The team also reviewed the electrical isolation capability of selected equipment needed for post-fire safe shutdown to ensure that such equipment could be operated locally, if needed.

Due to the issuance of Change Notice 00-020 to Inspection Procedure 71111.05, “Fire Protection,” the team did not review associated circuit issues during this inspection. This change notice has suspended this review pending completion of an industry initiative in this area.

b. Findings

During review of condition report 03-08460, the team noted that FENOC identified that previous analyses failed to identify a vulnerability associated with high-low pressure interface valves, the power operated relief valves (PORVs). Specifically, FENOC had failed to identify the potential for spurious opening of the PORVs due to multiple cable-to- cable hot shorts caused by fire damage. Generic Letter 86-10 specifies that multiple hot shorts must be postulated for high-low pressure interface valves. Since certain associated circuit issues are the subject of a current industry initiative, this item is unresolved pending generic resolution of guidance for evaluating fire induced cable faults. FENOC has implemented interim compensatory measures pending resolution of this issue. Also, on February 13, 2004, FENOC submitted a proposed revision to a previously approved deviation to Branch Technical Position CMEB 9.5-1 to address this issue. (**URI 05000412/2004002-01**)

.9 Electrical Raceway Fire Barrier Systems (ERFBS)

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition of the electrical raceway fire barrier systems. Additionally, the team selected the 3M Interam E-50 series fire protection material installation in the Primary Auxiliary Building/Elevation 755' (FA PA-4) for detailed review. The review included design and installation drawings, qualifications testing documents and engineering analyses for selected configurations. The NRC safety evaluations of fire protection features for Beaver Valley Power Station, Unit 2 were also reviewed by the team. This was accomplished to verify that the selected portions of the ERFBS system met their design and licensing bases.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.1 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team reviewed the open corrective maintenance work orders for fire protection and safe shutdown equipment, selected condition reports (CRs) for fire protection and safe shutdown issues and the third quarter (2003) Unit 2 fire protection systems health report to evaluate the prioritization for resolving fire protection related deficiencies and the effectiveness of corrective actions. Additionally, the team reviewed a recently completed Latent Issues Report (LIR) which focused on post-fire safe shutdown procedures for Unit 2. The team also reviewed recent Quality Assurance (QA) Audits and QA field observations of the fire protection program to determine if the licensee was identifying program deficiencies and implementing appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA5 Other

(Closed) URI 05000412/2003003-01: Verification and Validation of Post Fire Safe Shutdown Manual Actions Not Complete.

The team reviewed actions taken by FENOC to address issues associated with manual operator actions necessary to achieve safe shutdown following a fire. Items reviewed included safe shutdown procedures and manual operator action time line studies. The team also performed walkdowns of selected portions of the safe shutdown procedures with plant operators to assess the adequacy of the procedures and to evaluate the ability of operators to perform the manual actions in the times assumed in the safe shutdown analyses. The team concluded that FENOC had performed appropriate verification and validation of the manual actions and no violations of NRC requirements were identified during this review. This item is closed.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

The team presented their preliminary inspection results to Mr. William Pearce, and other members of the Beaver Valley Power Station Unit 2 staff at an exit meeting on January 20, 2003. No proprietary information was included in this inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel:

J. Belfiore	Design Engineering
T. Brown	Fire Brigade Training
P. Dearborn	Design Engineering
J. Devine	Design Engineering
A. Funkhouser	Reactor Operator
H. Kahl	Design Engineering
J. Maracek	Regulatory Affairs
D. Mickinac	Regulatory Affairs
J. Miller	Unit 2 Fire Protection Engineer
L. Miller	Unit 1 Fire Protection Engineer
M. Morgan	QA Auditor
F. Oberlitner	Design Engineering
D. Price	Design Engineering
J. Redman	Design Engineering
M. Ressler	Design Engineering
K. Troxler	Design Engineering
J. Wilcox	Operations

NRC Personnel:

R. Crlenjak, Deputy Director, Division of Reactor Safety
J. Rogge, Chief, Electrical Branch, Division of Reactor Safety
P. Cataldo, Senior Resident Inspector, Beaver Valley Power Station
G. Smith, Resident Inspector, Beaver Valley Power Station

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000412/2004002-01	URI	Potential for Spurious Opening of PORVs Due to Fire Induced Hot Shorts

Closed

05000412/2003003-01	URI	Verification and Validation of Post Fire Safe Shutdown Manual Actions Not Complete.

SUPPLEMENTAL INFORMATION (Cont'd)

LIST OF ACRONYMS USED

BVPS	Beaver Valley Power Station
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
CR	Condition Report
CT	Cable Tunnel
DG	Diesel Generator
DRS	Division of Reactor Safety
ERFBS	Electrical Raceway Fire Barrier Systems
FA	Fire Area
FENOC	FirstEnergy Nuclear Operating Company
IP	Inspection Procedure
IPE	Individual Plant Examination
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
LIR	Latent Issues Report
MCC	Motor Control Center
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
PA	Primary Auxiliary
PAR	Publicly Available Record
P&ID	Piping and Instrumentation Drawing
PORV	Power Operated Relief Valves
QA	Quality Assurance
RHS	Residual Heat Removal System
SAR	Safety Analysis Report
SER	Safety Evaluation Report
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SER	Safety Evaluation Report
UFSAR	Updated Final Safety Analysis Report
USAR	Updated Safety Analysis Report
VOND	Valve Operator Number Diagram

LIST OF DOCUMENTS REVIEWED

Fire Protection Licensing Documents

Beaver Valley Power Station - Unit 2 Updated Final Safety Analysis Report
Fire Protection Safe Shutdown Report, Beaver Valley Power Station Unit 2, Addendum 26
NUREG-1057, Safety Evaluation Report Related to the Operation of Beaver Valley Power Station, Unit 2, October 1985
NUREG-1057, Safety Evaluation Report Related to the Operation of Beaver Valley Power Station, Unit 2, Supplement No. 3, November 1986
NUREG-1057, Safety Evaluation Report Related to the Operation of Beaver Valley Power Station, Unit 2, May 1987
2DBD-33B, Design Basis Document for Fire Protection Systems, Rev. 5

Calculations/Engineering Evaluations

8700-DMC-3079, Fire Pump Minimum Operating Curve, Rev. 1
10080-B-085, Fire Hazards Analysis, Rev. 10
10080-B-438, Turbine Building, Under Operating Floor Sprinkler System, Conformance with NFPA - 850, Rev. 0
10080-DMC-3443, GL 86-10 Evaluation of Excessive Clearances Between Fire Rated Doors and Frames, Rev. 0
2BVS-174, Specification for CO2 and Halon Systems, August 18, 1987
ER-NRF-011, Engineering Evaluations of 3M Interam 50 Series Fire Barrier Configurations, November 2003
8700-DMC-3006, Low River Temperature Effects on Charging Pump Lube Oil, Rev. 0
10080-DEC-0240, Fire Protection Safe Shutdown Breaker Coordination Analysis, Rev. 0
10080-DMC-0811, BVPS2 Cycle 11 Appendix R Shutdown Margin Verification, Rev. 0
10080-E-120, 120V Fault Current Calculations for Protective Device Coordination, Rev. 2, and Addenda A1, A2 and A3
10080-E-122, Cable Operation at Elevated Temperature, Rev. 0
10080-E-207, Short Circuit Analysis, 125 VDC Class 1E DC System, Addenda A1, A2, & A3, dated 9/19/02
10080-E-208, Short Circuit Analysis, 125 VDC Normal DC Distribution System, Rev. 0
10080-E-240, Fire Protection Safe Shutdown Breaker Coordination Analysis, Rev. 0

Initial CO_2 Testing

SOV-2.33A.01, Main Plant Carbon Dioxide System Test (Fire Protection), Rev. 0

Procedures

1/2ADM-1900, Fire Protection, Rev. 7
1/2ADM-1902, Fire Brigade, Rev. 1
1/2ADM-2021, Control of Penetrations (Including HELB Doors), Rev. 2
1/2OM-56.4AA, Plant Fire Prevention Procedure, Rev. 1
1/2OM-56B.4AB, Fire Brigade and Fire Fighting Procedures, Rev. 1
2OM-56B.4.A, Safe Shutdown Following a Serious Fire in the Primary Auxiliary Building, Rev. 1
20M-56B.4.E, Safe Shutdown Following a Serious Fire in the Diesel Generator Building, Rev. 1
2OM-56B.4.I, Safe Shutdown Following a Serious Fire in the Service Building, Rev. 1
2OM-56C.4.D, Unit 2 Nuclear Operator #1 Procedure Step-by-Step, Rev. 16
2OM-56C.4.F-11, Operation of Primary Component Cooling Water Valves, Rev. 9
2OM-56C.4.F-18, Restoring Power Operation of Motorized Strainer (2SWS*STRM47), Rev. 0
1/2CMP-75-MCB-2E, Testing of ITE 480V Molded Case Circuit Breakers, Issue 4, Rev. 6
1/2PMP-E-36-015, ITE Medium Voltage Circuit Breaker Inspection and Test, Model 5HK-250/350, Issue 4, Rev. 10
1/2PMP-E-37-010, ITE Low Voltage Circuit Breaker Inspection and Test Model: K600S, K800S, K1600S, K2000S, Issue 4, Rev. 8
2-PMP-E-39-013, ITE Low Voltage DC Circuit Breaker Inspection and Test Model: K600, K800, K1600, Issue 4, Rev. 1
2OM-56C.4.B, Operating Procedure - Alternate Safe Shutdown from Outside Control Room, Rev. 19, Unit Supervisor Procedure
2OM-56C.4.C, Operating Procedure - Alternate Safe Shutdown from Outside Control Room, Rev. 13, NCO Procedure

Surveillance Procedures

OST 2.33.2, Fire Protection Hose Station Test, Rev. 8
1OST-33.7, Motor Driven Fire Pump Operation Test, Rev. 11, Completed November 22, 2003, and December 20, 2003
1OST-33.8, Diesel Driven Tire Pump Operation Test, Rev. 16, Completed November 29, 2003, and December 27, 2003
1-PMP-E-58-001, Maintenance of The ERF and ERFS Batteries, Rev. 8
1-PMP-E-58-002, Monthly Battery Inspection of “ERFS” Batteries, Rev. 2
1/2MI-C-58-010, Maintenance of Communication Battery, Rev. 1, Completed August 4, 2003, and January 26, 2004
1/2OM-56B.4A.B, Fire Brigade and Fire Fighting Procedures, Rev. 1
1/2OST-33.12, Fire Protection System Loop Flow Test, Rev. 9, Completed October 27, 2001, August 11, 2002, and September 11, 2003
1/2OST-33.31, Fire Brigade Test, Rev. 8
1/2OST-58E.1, RG Diesel Generator (RG-EG-1) Test, Rev. 24, Completed December 13, 2003, January 9, 2004, and January 10, 2004
1/2PMP-75VS-VNT-4M, Ventilation System Fire Damper Maintenance and Trip Check, Rev. 6, Completed February 21, 2002, April 3, 2002, November 12, 2003, November 16, 2003, November 26, 2003, December 31, 2003
2 BVT 1.33, Fire Rated Assemblies Visual Inspection, Rev. 7, Completed December 13, 2001, and December 5, 2003

2 OST-33.2A, Fire Protection System Monthly Hose Stations Test, Rev. 4, Completed November 16, 2003, and December 11, 2003
2 OST-33.2B, Fire Protection System Hose Stations Inspection, Flush, and Hose Replacement, Rev. 5, Completed December 3, 2003, and January 1, 2004
2 OST-33.13A, Smoke Detector Test, Rev. 8, Completed January 20, 2002, June 3, 2002, July 22, 2002, and January 19, 2003
2 OST-33.13C, Main Plant CO2 Zone "Puff" Tests, Rev. 9, Completed November 17, 2001, August 25, 2003, September 10, 2003, and January 6, 2004
2 OST-33.13H, CO2 System Heat Detector Test Operating Surveillance Test, CO2 System Heat Detector Test, Rev. 1, Completed December 11, 2001 and July 8, 2003
2 OST-33.16, Early Warning Smoke Detection Instrumentation Test, Completed August 11, 2002, January 8, 2003, and January 18, 2003
2 OST-33.16A, Early Warning Ultraviolet Detector Instrumentation Test, Rev. 5, Completed February 23, 2003, and September 12, 2003
2 PMP-38-EMERLGT-4E, Appendix R and Non-Appendix R Emergency Lighting Operability Test, Inspection and Repair, Rev. 6, Completed August 9, 2003
2-PMP-E-39-005, Maintenance of BAT-2-5 and BAT-2-6 Batteries, Rev. 5
2-PMP-E-39-006, Battery Inspection [BAT-2-5 and BAT-2-6], Rev. 2
2OST-45.2, Operating Surveillance Test - Alternate Shutdown Panel Instrumentation Channel Checks, Rev. 13, completed 12/8/03
2OST-45.2, Operating Surveillance Test - Alternate Shutdown Panel Instrumentation Channel Checks, Rev. 13, completed 1/5/04
2OST-45.9 (ISS1), Operating Surveillance Test - Alternate Shutdown Panel Checks, Issue 1, Rev. 8, completed 1/18/02
2OST-45.9, Operating Surveillance Test - Alternate Shutdown Panel Checks in Modes 1, 2, 3, Rev. 11, completed 8/28/03

Latent Issues Report

Beaver Valley Power Station Unit 2 Fire Protection Safe Shutdown Latent Issues Report, September 15, 2003

Quality Assurance Self-Assessments and Field Observations

BV-C-01-05, BVPS Fire Protection Program, June 14, 2001
BV-C-03-01, First Quarter, 2003 BV Assessment Report, May 9, 2003
BV-C-03-02, Second Quarter, 2003 BV Assessment Report, August 8, 2003
BV-C-03-03, Third Quarter, 2003 BV Assessment Report, November 25, 2003
BV32002118, Appendix R/Alternate Safe Shutdown Related Emergency Lights, June 24, 2002
BV32002131, Administrative Controls, July 2, 2002
BV32002326, Adequacy of Measures Established to Implement The Fire Protection Program, September 9, 2002
BV32002640, Pre-Fire Plans in The Control Room's, June 11, 2002
BV32003107, Fire Protection Program and Prevention, Maintenance, Compensatory Measures, Impairments, Communication, October 14, 2003
BV32003873, Fire Protection Program Fire Hazards Analysis Review, July 1, 2003

Fire Qualification Test Reports

Promotec, Final Report CTP 1063, ANI/MAERP Standard Method of Fire Tests of Cable and Pipe Penetration Fire Stops, January 21, 1985
Promotec, Final Report CTP 1092, Three Hour Qualification Test Internal and External Seals - Aluminum Conduits, October 22, 1985
Promotec, Final Report CTP 1119, Three Hour Fire Qualification Test, December 16, 1986
Final Report 414186-969, Fire Tests 86-79 & 86-80, Qualification Fire Tests of 3M Interam E-50 Series Fire Protection Mat for 1-Hour Rated Electrical Raceways, September 1986

Drawings

12241-RE-37E-16, Concealed Conduit Sleeves Auxiliary Building, Rev. 16
14343-3, Schedule for DWG 14343, DAF-P-5171 Ver. MTD Fire Damper
14343-5, Multiblade Fire Damper Model DAF-P-5171Double Damper Vertical MTD, Rev. C-1
14631, Multiblade Fire Damper Model No. DAF-P-5171, Double Damper Horz. MTD, Rev. 14
14631-201, Notes and Spec. For DWG No. 14631 Multiblade Horiz. MTD Fire Damper, Rev. F
14631-900-1, Schedule for DWG 14631 Multiblade Horiz. MTD Fire DMPR., Rev. G
2601.337-844-082, Electrical Fire Seals, EL-1, 2, Rev. B
2601.337-844-083, Internal Conduit Fire Seals EC-1, 2, 3, 4, 5, 6, Rev. 3
10080-RE-1BC, One Line Diagram Essential Bus, Rev. 10
10080-RE-1BD, One Line Diagram Essential Bus, Rev. 27
10080-RE-34BQ, Cable Tray Identification Auxiliary Building EL 755'-6", Rev. 7
10080-RE-34CX, Table For Fire Protection of Cables and Raceways, Rev. 8
10080-RE-64A - 64Q, CND Plan-Fire Detection
10080-RE-64AV, Cable Block Diagram - Fire Detection System Interfaces and Fire ALM Horn Supv. Panel, Rev. 3
10080-RE-65, Sh. 1-4, Lighting Plan Control Building
10080-RE-69, Sh. 1-4, Lighting Plan Auxiliary Building
10080-RE-265A - 265F, Egress Emerg. Lighting Plan and Details - Control Building
10080-RE-269, Sh. 1-4, Egress Emerg. Lighting Plan and Details Auxiliary Building
10080-RE-274B, Egress Emerg. LTG Plan Diesel Gen. Bldg and Valve Pit, Rev. 1
10080-RM-433-1A, Valve Oper. No. Diagram, WTR-Distribution Network, Rev. 16
10080-RM-433-1B, Valve Oper. No. Diagram, Fire Protection WTR-MISC. Buildings, Rev. 7
10080-RM-433-1C, Valve Oper. No. Diagram, Fire Protection Water-Aux. Building, Rev. 12
10080-RM-433-1D,Valve Oper. No. Diagram, Fire Protection Water Containment Building, Rev. 9
10080-RM-433-1E, Valve Oper. No. Diagram, Fire Protection Water-Turbine Building, Rev. 7
10080-RM-433-2A, Valve Oper. No. Diagram, CO2 Fire Protection System, Rev. 2
10080-RM-433-2B, Valve Oper. No. Diagram, CO2 Fire Protection System, Rev. 2
10080-E-5F, Elementary Diagram - 4160V - Reactor Coolant Pump 2RCS*P21A, Rev. 21
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10080-TLD-007-089-01 to -08, Test Loop Diag. - Chemical & Volume Control System - Blender Boric Acid Feed Control Valve 2CHS*FCV113A
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10080-TLD-44F-007-01 to -04, Test Loop Diag. - Secondary Plant Buildings HVAC System - Emergency Switchgear Room Temperature Control

Pre-Fire Plans

2PFP-AXLB-755, Primary Auxiliary Building Fire Areas PA-4, PA-6 and PA-7, Rev. 0
2PFP-CBLT-712, Cable Tunnel Fire Area CT-1, Rev. 0
2PFP-DGBX-732, Diesel Generator 2-1 Room Fire Area DG-1, Rev. 0
2PFP-SRVB-730, DF Switchgear Room Fire Area SB-2, Rev. 0

Fire Drills, Scenarios & Critiques

Unit 2 Battery Room, Drills Completed September 4, 2002, September 11, 2002, and September 18, 2002
Unit 2 Cable Spreading Room, Drills Completed February 19, 2003, March 15, 2003, April 14, 2003, May 21, 2003, and June 18, 2003
Unit 2 Diesel Generator Building, Drills Completed November 19, 2003, and November 26, 2003

Fire Brigade/Operator Training

FB-9337, Fire Brigade Training, Rev. 4
FB-9340, Fire Brigade Training Administrative Review, Rev. 4
FB-9342, Instructor Scenario Guidance For BVPS 2003 Fire Brigade Training
3SQS-56B.1, OM-56B Fire Prevention and Control, Rev. 3
2SQS-56C.1, Alternate Safe Shutdown, Rev. 2

Hot Work Permits

Turbine Building 774 Above # 1 LP Turbine 2SVS-80 - September 14, 2003
2-RCBX-EC.692 - October 6, 2003
Turbine Basement 2 FWS-P21A - October 7, 2003
Turbine Basement 738 EL. - October 7, 2003
752 Turbine Mezz SE Corner - October 8, 2003
2-TRBB-752-762 Above LO RES South - October 8, 2003
Turbine Mezz - October 9, 2003

Fire Barrier Permits

1-SRVB-713, Wall Between CR Vent and Process Rooms
2-SRVB-760-2-5, BATT RM, August 28, 2003

Condition Reports

01-00144	01-01920	02-11303	03-08791	03-09249	03-11059
03-11059	03-08538	03-08923	03-08924	04-00522	03-11306
03-11243	03-08460	03-09247	04-00676	04-00766	04-00783
04-00413	04-00805	04-00849	04-00376		

Work Orders

01-005123	01-005157	01-012602	01-012626	200025321	200025439
200028378	200029639	200042868	200042869	200042871	200042872
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Miscellaneous Documents

Fire Protection Impairments Report for Unit 2
Fire Protection System Health Report BVPS Unit 2, 2nd Quarter 2003
Fire Protection System Improvement Plan, 2nd Quarter 2003
Industry Operating Experience Program, Fire Protection System Design Deficiencies and Common-Mode Flooding of Emergency Core Cooling System Rooms at Washington Nuclear Project Unit 2, February 19, 1999
Letter Dated October 10, 1983, American Warming and Ventilation Inc. to Duquesne Light, Fire Dampers
Letter Dated May 3, 1983, American Warming and Ventilation Inc. to Duquesne Light, Fire Dampers
Letter Dated March 27, 1985, Duquesne Light to NRC, Fire Protection
Letter Dated February 27, 1991, Holophane to Duquesne Light, E Light Batteries
Root Cause Analysis Report, Fire in BV, Unit 2, Cold Chemistry Laboratory, May 4, 2001
SOER 85-5, Internal Flooding of Power Plant Buildings, September 9, 1986
Vendor Manual (E-Lights) 2501.931-852-001, 12 VDC Emergency Lights Installation and Maintenance Instructions, Rev. J
Vendor Manual (Dampers) 90247-36, Fire Damper Certification as 1-½ Hour Fire Barrier, May 8, 1984
Vendor Manual (3M Installation Booklet), 3M Interam E-50 Series Fire Protection Mat, 1 Hour Flexible Wrap System For Electrical Raceways, June 19, 1987
Cable Block Diagrams Associated with Elementary Diagrams Listed under Drawings, Above Safety and Nonsafety-Related Panel Lists
RTL# A1-080J, Fire Protection Safe Shutdown Report, Addendum 26, Appendix A4, Cable Routing