

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-334/81-11

Docket No. 50-334

License No. DPR-66 Priority -- Category C

Licensee: Duquesne Light Company

Post Office Box 4

Shippingport, Pennsylvania 15077

Facility Name: Beaver Valley Power Station, Unit No. 1

Inspection at: Shippingport, Pennsylvania

Inspection conducted: April 13-16, 1981

Inspectors: *Peter S. Koltay*

Peter S. Koltay, Reactor Inspector

5/27/81  
date signed

                      
date signed

                      
date signed

Approved by: *S. D. Ebner*

Stewart D. Ebner, Chief, Plant Systems Section

5/27/81  
date signed

Inspection Summary:

Inspection on April 13-16, 1981 (Report No. 50-334/81-11)

Areas Inspected: Routine unannounced inspection of modification to the Fire/Protection/Prevention Program outlined in the Safety Evaluation Report issued with Amendment No. 18 to Facility Operating License No. DPR-66. The modifications include the installation of: water and gaseous suppression systems, fire detection devices, fire doors, electrical penetrations, fire hose stations, modifications to the diesel generator rooms, and miscellaneous fire protection equipment. The inspection also included a review of fire protection equipment surveillance and maintenance records and the status of previously identified outstanding items. The inspection involved 26 hours on site by one NRC regionally-based inspector.

Results: Of the 4 areas inspected, no items of noncompliance were identified in 3 areas, one item of noncompliance was identified in one area. (Violation-failure to follow plant maintenance procedure.)

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## DETAILS

### 1. Persons Contacted

#### Duquesne Light Company

\*R. Galcerek, Nuclear Engineering and Refueling Supervisor  
J. Griffin, Senior Test Engineer  
\*R. Hansen, Maintenance Supervisor  
D. Hunklele, Senior QA Engineer  
F. Lipchick, Senior Compliance Engineer  
\*J. Maracek, Senior Engineer  
\*S. Sovick, Compliance Engineer  
\*H. Williams, Chief Engineer  
P. Verma, Test Engineer

#### Chemtrol Corporation

R. Adrian, Quality Assurance  
T. Lorent, Manager

\*Denotes those personnel who were present at the exit interview.

### 2. Action on Previous Inspection Findings

(Closed) Unresolved Item (334/80-03-03); Instrument utilized for testing smoke detectors requires periodic calibration, in accordance with Procedure OST 1.33.6. Proof of instrument calibration was not available at the site.

The inspector reviewed procedure OST 1.33.16, Smoke Detection Test, and verified that calibration data on the Honeywell TC100 A instrument is attached to the procedure. Date of last calibration is January 16, 1981. The instrument is calibrated prior to each detection system test.

### 3. Fire Protection Modifications Required by Amendment No. 18 to Facility Operating License No. DPR-66

By review and examination of records, including design change procedures, specifications, drawings, and associated quality assurance documents, and by examination of installed fire protection equipment throughout the plant the inspector verified the licensee's implementation of scheduled modifications identified in the Safety Evaluation Report issued with Amendment No. 18.

#### a. Codes and Standards

The inspector verified that for completed fire protection related modifications, the design and installation of equipment is in accordance with the codes and standards of the National Fire

Protection Association. All fire protection equipment is Underwriters Laboratories and/or Factory Mutual listed.

b. Quality Assurance

The inspector reviewed "Quality Assurance Procedure Appendix C, Fire Protection." The inspector verified that the licensee has established quality assurance requirements for fire protection related systems, structures and components, in accordance with the Branch Technical Position 9.5-1.

c. Completed Modifications

The inspector verified that the following modifications identified in section 3 of the Safety Evaluation Report have been completed. The inspector verified that all automatic and manual suppression systems, and automatic fire detection devices alarm in the station control room.

(1) Item 3.3-2 Auxiliary Feedwater System and Item 3.3-3 Component Cooling Water Pumps

The inspector reviewed Design Change Procedure DCP-268, sections 2, 4, 18, and 19; and test procedure Nos. T33-268-23 and 24; G TP-ET-1 and 2. The inspector verified that the licensee installed early warning smoke detection systems, pre-action sprinkler systems activated by heat detection devices, and curbs around each auxiliary feed water pump to contain oil spills.

(2) Items 3.3-5 Cable Spreading Area CS-1, CV-1, CV-2; 3.3-6 Cable Tunnel CV-3; 3.14 Charging Pump Cubicle; 3.23 Intake Structure

The inspector reviewed Design Change Procedure DCP 268 sections 3, 13, and 5; ER-268-3. The inspector verified that the licensee installed a rapid access hatchway in the Cable Tunnel CV-3 and provided smoke detection devices in all of the subject areas.

(3) Items 3.3-7 Hose Stations; 3.15-1 Booster Hose

The inspector reviewed Design Change Procedure DCP 268-1A and verified that the licensee has installed hose stations and provided additional lengths of hose at existing hose stations to ensure coverage of all areas housing equipment necessary for safe shutdown. The inspector verified installation of hose reels and hose stations in the following areas:

- Air conditioning equipment room, in stairway.
- Control room, in stairway.
- Cable Spreading room (CS-1), in stairway.
- West and east cable vaults (CV-1 and CV-2) in the stairwell between the vaults.
- Primary auxiliary building (PA-1) at elevation 722.5 feet elevation 735.5 feet and elevation 752.5 feet.
- Pipe tunnel areas of elevations 767 feet, 751 feet and 756 feet.

(4) Item 3.5 Hydrant and Post Indicator Valve Guard Posts

The inspector verified that the licensee installed guard posts to protect hydrants and valves from vehicular traffic.

• (5) Item 3.10 Turbine Oil Reservoir

The inspector verified that the licensee installed a curb beneath the turbine lube oil reservoir to contain the entire volume of the reservoir plus water discharged from the fire protection system.

(6) Item 3.11 Diesel Generator Rooms

The inspector reviewed procedure R of the Operating Manual Chapter 33 and determined that the licensee has developed a procedure to deenergize diesel fuel transfer pumps to limit diesel fuel spills in the diesel generator rooms.

The inspector verified the installation of a curb between the diesel generator rooms, the installation of an additional three hour rated fire door separating the diesel generator rooms, the installation of a level-detecting device in the **sump** near the day tank with annunciation in the control room on high **sump** level.

(7) Item 3.13 Fire Rated Penetrations

The inspector reviewed the following documents:

- Penetration Sealing Technology-by Chemtrol Corporation;
- Training Program, General and Medium Density Seals, Chemtrol Corporation;

- Chemtrol Corporation Procedure Manual, March 1, 1979;
- General Work Practice Procedure GWP-3 for Maintenance of Penetration Fire Barriers;
- Maintenance Manual Chapter 1, Section T, Special Administrative Controls and Rules Part 1, Electrical Cable Penetration;

The inspector verified that the licensee upgraded fire wall penetrations between the cable spreading room and the control room benchboards, and between the diesel generator rooms to three hour rated fire barriers. The inspector noted that Chemtrol Corporation technicians are in the process of installing and upgrading fire barrier penetration seals to three hour rated fire barriers, throughout the plant.

The inspector examined quality assurance samples obtained in 1980 and 1981 from the penetration sealant material, silicone foam manufactured by the Dow Corning Corporation.

(8) Item 5.4.6 Halon Extinguishing System

The inspector reviewed Design Change Procedure DCP-268-ER-11, Halon 1301 for Relay Panel and Process Instrument Room; Halon System Piping and Detector Test T-33-268-27, January 12, 1981.

The inspector verified that the licensee installed a Halon 1301 automatic total flooding extinguishing system to protect the under-floor cable area of the process instrument room. Test results indicated that upon system activation a 5% concentration is reached within 10 seconds and the concentration is maintained for at least 10 minutes.

d. Modifications Not Completed

- (1) Item 3.1-3 Procedures-Fire Fighting Strategies. The inspector reviewed draft procedures for fire fighting strategies prepared by the licensee for several critical fire areas. The licensee stated that the procedure will be issued by August 1981, and will be part of the fire brigade training program.
- (2) The following items will be completed during the next refueling:

Item 3.3-1 Containment Penetration Area

Manually activated water suppression system

Item 3.3-7 Containment

Addition of hose stations

Item 3.3-4 Residual Heat Removal Pump

## Automatic Water Suppression system

4. Review of Surveillance Test and Maintenance Records Associated with Technical Specifications Requirementsa. Surveillance Tests

The inspector selected and reviewed the following records to verify that the associated required Fire Protection Program surveillances had been performed and acceptance criteria had been met.

- OST 1.33.9, Carbon Dioxide Fire Protection System Inspection Test, January 19, 1980;
- OST 1.33.2, Fire Protection System Hose Station Test, December 2, 1980;
- OST 1.33.3, Fire Protection System Drain Test, December 14, 1980;
- OST 1.33.8, Diesel Engine Driven Fire Pump Operation Test, December 29, 1980;
- OST 1.33.7, Motor Driven Fire Pump Operational Test, November 3, 1980;
- OST 1.33.12, Fire Pumps Flow Test, April 8, 1981.

The inspector reviewed licensee Event Report LER 80-069/OIT-2 and noted that the electric motor drive of the fire pump has failed three times since February 26, 1980. The electric motor was repaired once on site and twice off site. The latest repair was concluded by Westinghouse and the pump was re-installed at the site in April, 1981. The exact cause of the three failures has not been determined. The licensee is performing a reliability study. A fire pump test in accordance with operating surveillance test OST 1.33.12 was conducted on April 8, 1981. The fire pump was placed back in service upon completion of the test. The inspector reviewed the test results and found them inconclusive based on the following:

- The test did not include flow data at 150% of pump capacity, as required by Code No. 20 of the National Fire Protection Association.



- The net head at flows of 2500 gpm, 3000 gpm and 3500 gpm, stayed essentially flat at approximately 100 psi. This may be indicative that the relief valve was lifting below the assumed setting of 150 psi.
- The test did not include current and voltage readings as required by NFPA Code No. 20.

The licensee stated that a possible relief valve malfunction is being investigated. Also some of the above data is available from the insurance carrier, and will be forwarded to the NRC.

This item is considered unresolved pending NRC review and evaluation of additional test data. (81-11-01)

b. Maintenance Records

The inspector reviewed the following maintenance surveillance and preventive maintenance records:

MSP33.03, Revision 2, Diesel Engine Driven Fire Pump Battery, 18 Month Inspection, February 5, 1979;

MSP33.04, Revision 2, Diesel Engine Driven Fire Pump Battery Quarterly Inspection; February 5, 1979;

MSP33.02, Revision 1, Diesel Engine Driven Fire Pump Lubrication and Inspection, March 28, 1979;

MSP33.01, Revision 1, Diesel Engine Driven Fire Pump Inspection and Maintenance.

Technical Specification Section 4.7.14.1.2.C.1 states in part: "At least once per 18 months. . . Subjecting the diesel to an inspection in accordance with procedure prepared. . ."

Procedures MSP33.01 and MSP33.02 state in part: "The purpose of this procedure is to ensure that the diesel fire pump has been subjected to an inspection in accordance with procedures prepared . . . This procedure is required to be performed at least once every 6 months. (MSP33.01)... every 18 months..."(MSP33.02)

Contrary to the above, diesel engine driven fire pump maintenance based on the above procedure has not been performed by the licensee during the past 18 months.

This item is considered a violation (334/81-11-02).

5. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable, items of noncompliance or deviations. An unresolved item is discussed in paragraph 4a.

6. Exit Interview

The inspector met with the licensee representatives (Denoted in paragraph 1) at the conclusion of the inspection, on April 16, 1981 and summarized the purpose and scope of the inspection findings.