U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-334/84-09

Docket No. 50-334 License No. DPR-66

Licensee: Duquesne Light Company
One Oxford Center
301 Grant Street
Pittsburgh, PA 15279

Facility Name: Beaver Valley Power Station, Unit 1

Inspection At: Shippingport, Pennsylvania

Inspection Conducted: April 1 - May 4, 1984

Inspectors: Wm. Troskoski
W. M. Troskoski, Senior Resident Inspector — 5-7-84 date signed

D. M. Johnson
D. M. Johnson, Resident Inspector — 5-7-84 date signed

Approved by: L. E. Tripp
L. E. Tripp, Chief, Reactor Projects Section No. 3A, Reactor Projects Branch 3 — 5/10/84 date signed

Inspection Summary: Inspection No. 50-334/84-09 on April 1 - May 4, 1984.

Areas Inspected: Routine inspections by the resident inspectors (87 hours) of licensee actions on previous inspection findings, plant operations, housekeeping, fire protection, radiological controls, physical security, surveillance program, maintenance activities, engineered safety features verification and followup on TMI Action Plan Items.

Results: No safety issues were identified.

DCS NUMBERS

830311	840319
840424	830722
840312	840315
820510	811002
831026	840313
831228	840410
	800201

DETAILS

1. Persons Contacted

F. Bissert, Manager, Nuclear Support Services
J. Carey, Vice President, Nuclear Division
M. Coppula, Superintendent of Technical Services
K. Grada, Superintendent of Licensing and Compliance
T. Jones, Manager, Nuclear Operations
W. Lacey, Station Superintendent
J. Sieber, Manager, Nuclear Safety and Licensing

The inspectors also contacted other licensee employees and contractors during this inspection.

2. The NRC Outstanding Items (OI) List was reviewed with cognizant licensee personnel. Items selected by the inspectors were subsequently reviewed through discussions with licensee personnel, documentation review and field inspection to determine whether licensee actions specified in the OIs had been satisfactorily completed. The overall status of previously identified inspection findings were reviewed, and planned and completed licensee actions were discussed for those items reported below.

(Closed) Unresolved Item (83-29-01): Determine whether Westinghouse supplied T-L material to BVPS through Capital Pipe and Steel Company per IEB 83-06. By DLC letter of April 24, 1984, the results of the review was forwarded to the NRC. As none of the referenced material was identified as being supplied to BVPS Unit 1, this item is closed.

(Closed) IFI (84-BU-02): Failures of General Electric type HFA relays in use in Class 1E safety systems. This item was reviewed as part of the inspection effort related to IE Information Notice 82-13, Failure of General Electric Type HFA Relays, reviewed in NRC Inspection Report 50-334/83-20. Since the previous licensee review verified that no HFA relays were installed at the plant, no further action is planned.

(Closed) IFI (83-BU-08): Electrical circuit breakers with an undervoltage trip feature in use in safety related applications other than the reactor trip system. By letter dated March 19, 1984, DLC stated that their review identified no safety related circuit breakers with the UVTA device other than the reactor trip breakers. Past routine resident inspection of ESF systems confirms this to be true. This item is closed.

(Closed) IFI (83-BU-07): Apparently Fraudulent Products Sold by Ray Miller, Inc. The inspector reviewed the licensee's response of March 15, 1984. DLC did not identify any suspect Ray Miller, Inc. material as being installed in safety related systems or in stock at BVPS Unit 1. Therefore, the other action items in the bulletin are not applicable and no further action is required.

(Closed) Unresolved Item (83-29-03): Determine that QA audits of the BVPS ISI Program are conducted against NRR approved ISI relief requests. Through discussions with the QA lead auditor and review of Audit No. BVP-1-84-04, Inservice Inspection and Nondestructive Examination of Pumps and Valves, the inspector verified that the annual ISI audit was conducted to the NRR approved program. The inspector further confirmed that the findings of the QA audit were entered into the licensee's corrective action system for resolution. This item is therefore closed.

(Closed) Unresolved Item (82-13-02): Review corrective action for OST 1.1.1, Control Rod Assembly Partial Movement Test, initial conditions and resolve possible OST-BVT procedure conflicts. The OST has since been revised to require that the reactor be in operating mode 1 or 2 or in the process of completing Startup Checklist D when leaving hot standby (Mode 3) conditions to go critical. A further concern that initial conditions and/or acceptance criteria contained in an OST might not be compatible with other test procedures such as BVTs, even though the OST is used as a vehicle to accomplish a task specified in the BVT, has been alleviated through procedure revision. Discussions with test personnel and a sampling review of BVTs indicate that these test procedures are now performed independently of any OST. This item is closed.

(Closed) Unresolved Item (81-20-08): DLC review of recurrent degassifier heat exchanger cracks. As this problem has not recurred during the past two years, no further inspection effort is planned at this time.

(Closed) Unresolved Item (81-20-07): Review long term action for gaseous waste system leakage of August 16, 1981. Because the immediate corrective action taken by the licensee as documented in NRC Inspection Report 50-334/81-20 has been effective in precluding recurrence during the past three years, no further inspection effort will be directed at this item.

(Closed) Unresolved Item (84-04-07): Verify ISI Program corrective action addressed vendor isometric drawing control. The inspector reviewed DLC's letter of March 13, 1984, which addresses the corrective action plan in response to the Notice of Violation contained in NRC Inspection Report 50-334/84-02. Corrective action outlined included a commitment to create a unique controlled set of updated isometric drawings to reflect all plant modifications to date by July 1, 1984. This action satisfactorily addresses the inspector's concern and this item is closed.

3. Plant Operations

a. General

Inspection tours of the plant areas listed below were conducted during both day and night shifts with respect to Technical Specification (TS) compliance, housekeeping and cleanliness, fire protection, radiation control, physical security and plant protection, operational and maintenance administrative controls.

-- Control Room
-- Primary Auxiliary Building
-- Turbine Building
-- Service Building
-- Main Intake Structure
-- Main Steam Valve Room
-- Purge Duct Room
-- East/West Cable Vaults
-- Emergency Diesel Generator Rooms
-- Containment Building
-- Penetration Areas
-- Safeguards Areas
-- Various Switchgear Rooms/Cable Spreading Room
-- Protected Areas

Acceptance criteria for the above areas included the following:

-- Technical Specifications (TS)
-- BVPS FSAR
-- BVPS Operating Manual (OM), Chapter 48, Conduct of Operations
-- OM 1.48.5, Section D, Jumpers and Lifted Leads
-- OM 1.48.6, Clearance Procedures
-- OM 1.48.8, Records
-- OM 1.48.9, Rules of Practice
-- OM Chapter 55A, Periodic Checks - Operating Surveillance Tests
-- BVPS Maintenance Manual (MM), Chapter 1, Conduct of Maintenance
-- BVPS Radcon Manual (RCM)
-- 10 CFR 50.54(k), Control Room Manning Requirements
-- BVPS Site/Station Administrative Procedures (SAP)
-- BVPS Physical Security Plan (PSP)
-- Inspector Judgement

b. Operations

The inspector toured the Control Room regularly to verify compliance with NRC requirements and facility technical specifications (TS). Direct observations of instrumentation, recorder traces and control panels were made for items important to safety. Included in the reviews were the rod position indicators, nuclear instrumentation systems, radiation monitors, containment pressure and temperature parameters, onsite/offsite emergency power sources, availability of reactor protection systems and proper alignment of engineered safety feature systems. Where an abnormal condition existed (such as out-of-service equipment), adherence to appropriate TS action statements was independently verified. Also, various operation logs and records, including completed surveillance tests, equipment clearance permits in progress, status board maintenance and temporary operating procedures were reviewed on a sampling basis for compliance with technical specifications and those administrative controls listed in paragraph 3a.

During the course of the inspection, discussions were conducted with operators concerning reasons for selected annunciators and knowledge of recent changes to procedures, facility configuration and plant conditions. The inspector verified adherence to approved procedures for ongoing activities observed. Shift turnovers were witnessed and staffing requirements confirmed. Except where noted below, inspector comments or questions resulting from these daily reviews were acceptably resolved by licensee personnel.

1. While discussing a recent reactor vessel head vent system modification with licensed operators during a routine control room tour, the inspector discovered that the Emergency Operating Procedures(EOP)no longer referenced the Operating Manual procedure. The inspector discussed this with the Superintendent of Technical Services and cognizant persons involved in this area. Apparently, the original EOP was inadvertently issued with references to the Operating Manual at inappropriate places and is currently being revised. Verification that the EOPs contain appropriate flags to direct operators to the vent system procedures when needed is an unresolved item (84-09-01).

c. Plant Security/Physical Protection

Implementation of the Physical Security Plan was observed in the areas listed in paragraph 3a above with regard to the following:

-- Protected area barriers were not degraded;

-- Isolation zones were clear;

-- Persons and packages were checked prior to allowing entry into the Protected Area;

-- Vehicles were properly searched and vehicle access to the Protected Area was in accordance with approved procedures;

-- Security access controls to Vital Areas were being maintained and that persons in Vital Areas were properly authorized;

-- Security posts were adequately manned, equipped, and security personnel were alert and knowledgeable regarding position requirements, and that written procedures were available; and

-- Adequate lighting maintained.

No deficiencies were observed.

d. Radiation Controls

Radiation controls, including posting of radiation areas, the conditions of step-off pads, disposal of protective clothing, completion of Radiation Work Permits, compliance with Radiation Work Permits, personnel monitoring devices being worn, cleanliness of work areas, radiation control job coverage, area monitor operability (portable and permanent), area monitor calibration, and personnel frisking procedures were observed on a sampling basis.

No problems were identified.

e. Plant Housekeeping and Fire Protection

Plant housekeeping conditions including general cleanliness conditions and control of material to prevent fire hazards were observed in areas listed in paragraph 3a. Maintenance of fire barriers, fire barrier penetrations, and verification of posted fire watches in these areas was also observed. No inadequacies were noted.

4. Engineered Safety Features (ESF) Verification

The operability of the River Water System was verified during the week of April 30, 1984, by performing a walkdown of accessible portions that included the following as appropriate:

(1) System lineup procedures match plant drawings and the as-built configuration.

(2) Equipment conditions were observed for items which might degrade performance. Hangers and supports are operable.

(3) The interior of breakers, electrical and instrumentation cabinets were inspected for debris, loose material, jumpers, etc.

(4) Instrumentation was properly valved in and functioning; and had current calibration dates.

(5) Valves were verified to be in the proper position with power available. Valve locking mechanisms were checked, where required.

(6) Technical specification required surveillance testing was current.

The inspector verified that Unit 2 construction tie-in activities did not adversely affect Unit 1 equipment located in the River Water intake structure. No deficiencies were identified.

Other selected ESF trains were inspected on a weekly basis to verify operability of major flow paths and components. ESF trains so inspected were:

-- Safety Injection Accumulators

-- Outside Recirculation Spray System

-- Diesel Generators

During the inspection period, ERF computer tie-in work was performed for various safety related equipment per DCP 296/366. The jobs involved electrically removing safety related equipment from service, connecting wiring to breaker terminals, performance of continuity checks under the direction of the Construction Department, release of equipment back to Operations, and functional checking to verify operability. The inspector verified that those activities were conducted under established administrative controls and in accordance with technical specifications for the following equipment:

-- Recirculation Spray Heat Exchanger 1D, April 12, 1984.

-- Outside Recirculation Spray Pump 2A, April 16, 1984.

-- Quench Spray Pump 4A and associated valves, April 23, 1984.

-- MOV-SI-836, May 1, 1984.

No deficiencies were noted.

5. Surveillance Activities

To ascertain that surveillance of safety-related systems or components is being conducted in accordance with license requirements, the inspector observed portions of selected tests to verify that:

a. The surveillance test procedure conforms to technical specification requirements.

b. Required administrative approvals and tagouts are obtained before initiating the test.

c. Testing is being accomplished by qualified personnel in accordance with an approved test procedure.

d. Required test instrumentation is calibrated.

e. LCOs are met.

f. The test data are accurate and complete. Selected test result data was independently reviewed to verify accuracy.

g. Independently verify the system was properly returned to service, with double verification of alignments, where required.

h. Test results meet technical specification requirements and test discrepancies are rectified.

i. The surveillance test was completed at the required frequency.

Surveillance tests observed were:

-- OST 1.24.4, Steam Turbine Driven Auxiliary Feed Pump Test (FW-P-2), May 1, 1984.

-- LCP 32-L104A2, Primary Plant Demineralized Water (PPDW) Storage Tank Level Loop Calibration, April 30 - May 2, 1984.

The inspector noted that the Loop Calibration Procedure (LCP) required a control room annunciator switch to be pulled for the channel being tested, but the annunciator panel had no out-of-service sticker placed on the alarm. This was discussed with the on duty reactor operator, who was aware of the condition. Though no administrative requirement existed, an OOS sticker was placed on the alarm plate because the test would carry over to another shift due to instrumentation problems. Further discussions indicated that the status of LCPs carried over to other shifts was tracked in an informal basis for information only, since no technical specification action statements were entered. The inspector reviewed the surveillance requirements of TS 4.7.1.3, which requires that the PPDW tank level be verified once per 12 hours, and verified thru log reviews that a redundant control room and a local level instrument were used to verify TS compliance. Licensee action was acceptable.

6. Maintenance Activities

The inspectors observed portions of selected maintenance activities on safety-related systems and components to verify that those activities were being conducted in accordance with approved procedures, technical specifications and appropriate industrial codes and standards. The inspectors conducted record reviews and direct observations to determine that:

-- Those activities did not violate a limiting condition for operations.

-- Redundant components were operable.

-- Required administrative approvals and tagouts had been obtained prior to initiating work.

-- Approved procedures were used or the activity was within the "skills of the trade."

-- The work was performed by qualified personnel.

-- The procedures used were adequate to control the activity.

-- Replacement parts and materials were properly certified.

-- Radiological controls were properly implemented when necessary.

-- Ignition/fire prevention controls were appropriate for the activity.

-- QC hold points were established where required and observed.

-- Equipment was properly tested before being returned to service.

-- An independent verification was conducted to verify that the equipment was properly returned to service.

(A) Changeout of the 9 lube oil cooling water thermostatic valves for the No. 2 diesel generator was observed by the inspector on April 6, 1984. The work was acceptably performed.

(B) The inspectors observed portions of the mechanical seal work performed on the 1B charging pump during the week of April 9, 1984. The 1C charging pump (swing pump) was aligned to the B ESF train and no technical specification action statement was entered. No deficiencies were noted.

(C) Several tube leaks were discovered in the 1C component cooling water (CCR) heat exchanger after scheduled tube cleaning on April 7, 1984. Through discussions with licensee personnel, the inspector determined that eddy current testing is planned to aid in determining the extent of tube degradation and identifying possible causes. A review of TS 3.7.3.1, which requires two CCR subsystems to be operable, and plant heat loads, indicates that temporary removal of one of the three heat exchangers should present no immediate operational problems.

7. Inoffice Review of Licensee Event Reports (LERs)

The inspectors reviewed LERs submitted to the NRC:RI office to verify that the details of the event were clearly reported, including the accuracy of the description of cause and adequacy of corrective action. The inspectors determined whether further information was required from the licensee, whether generic implications were indicated, and whether the event warranted onsite followup. The following LER was reviewed:

-- LER 84-03 Reactor Trip on Source Range High Flux during Manual Reactor Shutdown.

No deficiencies were noted.

8. TMI Action Plan Followup

I.A.1.3.2 - Shift Manning. The NRC regulatory position on staffing of nuclear power plants are contained in the following documents:

1. Rule change to 10 CFR 50.54(m), Licensed Operator Staffing at Nuclear Power Plants, 48 FR 31611, effective January 1, 1984.

2. IE Circular, 80-02, Nuclear Power Plant Staff Working Hours, February 1, 1980.

3. NUREG-0737 (Supplement 1), Clarification of TMI Action Plan Requirements for Emergency Response Capability, January, 1983.

The inspector reviewed Amendment No. 70 to Technical Specification Section 6.2-1, Minimum Shift Crew Composition - Single Unit Facility, Chapter 4 of the Station Administrative Procedures, and applicable portions of the BVPS Emergency Preparedness Plan to verify that administrative procedures were in place that implemented minimum shift crew composition and over-time requirements as specified in the above documents. Additionally, the inspector conducted numerous regular and back shift inspections of the control room to verify that those requirements were being adequately implemented by the licensee. This item is closed.

9. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable, items of noncompliance or deviations. One new unresolved item was identified and is discussed in detail 3. Followup on several previous unresolved items is discussed in Section 2.

10. Exit Interview

Meetings were held with senior facility management periodically during the course of this inspection to discuss the inspection scope and findings. A summary of inspection findings was further discussed with the licensee at the conclusion of the report period.