

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

Region I

Report No. 50-412/82-09

Docket No. 50-412

License No. CPPR-105

Priority --

Category A

Licensee: Duquesne Light Company

Robinson Plaza Building No. 2

Suite #210, PA Route 60

Pittsburgh, PA 15205

Facility Name: Beaver Valley Power Station, Unit 2

Inspection at: Shippingport, Pennsylvania

Inspection conducted: August 3 - 31, 1982

Inspector: G. Walton

G. Walton, Senior Resident Inspector

Sept. 8, 1982

date signed

Approved by: L. Tripp

L. Tripp, Chief, Reactor Projects Section  
No. 2A, Projects Branch No. 2

9/14/82

date signed

Inspection Summary: Inspection on August 3 - 31, 1982 (Report 50-412/82-09).

Areas Inspected: Routine, unannounced inspection by one resident inspector of welding activities, post weld heat treatment, repair of steam generator nozzles, document review, bulletins and circular activity, concrete placement, storage, and site tours. The inspection involved 83 hours by one resident inspector.

Results: Of the eight areas inspected, one item of noncompliance was identified: Failure to follow procedure for preserving valve seats (Paragraph 4).

## DETAILS

### 1. Persons Contacted

#### Duquesne Light Company (DLC)

- \*W. Arvin, Senior Engineer
- \*R. Coupland, Director, QC
- \*H. Crooks, Assistant Director QC
- \*C. Ewing, QA Manager
- R. Fedin, Compliance Engineer
- S. Hall, Senior Compliance Engineer
- C. Majumdar, Senior QC Engineer
- \*J. Markovich, Compliance Engineer
- P. Orr, Deputy Project Manager
- \*R. Swiderski, Manager of Nuclear Construction
- \*W. Glidden, Senior QA Engineer
- \*C. Davis, Director, Quality Assurance

#### Stone and Webster (S&W)

- S. Adams, Superintendent of Construction
- \*C. Bishop, Resident Manager
- \*R. Faust, Site Structural Engineer
- R. Harris, Site Material Engineer
- A. McIntyre, Head SEO
- \*R. Burgas, Lead Site Power Engineer

\*Present at exit meeting held August 31, 1982.

### 2. Construction Site Walk-Through Inspection

Numerous tours of the construction site were made to observe work activities in progress, completed work and plant status of the construction site. The presence of quality control inspectors and quality control records were observed. Construction is 57% complete as of August 17, 1982.

No violations were identified.

### 3. Licensee Action on Previous Findings

(Closed) Circular 79-02, "Failure of 120 Volt AC Power Supplies." The inspector reviewed the Duquesne Light memorandum to Stone and Webster Engineering Corporation, 2DLC-4951, dated August 25, 1982.

(Closed) Unresolved Item (82-01-03), Ovality Test on Service Water Line.

The inspector had asked for a recheck of the "worst case" ovality problems found on Power Piping supplied pipe because of the following condition noted: The original data from Power Piping on line 2-SWS-66-2 showed a 3.89% maximum ovality. Maximum allowed ovality is 8%. A recheck performed

February 25, 1982 by Power Piping inspectors showed 5.2% ovality on the same area. It was explained that the measurement techniques would account for these changes. However, if measurements can vary by 1.3%, a 7% ovality could exceed 8%. The licensee agreed and has committed to recheck those which exceed the condition found on 2-SWS-66-2.

Power Piping supplied a list of seven bends of "worst case" and the percent ovality recorded at the time of manufacture. Duquesne Light, Site Quality Control, reexamined and took new measurements of the same areas and supplied the data to Stone and Webster (S&W) Engineering for calculations. S&W Engineering calculated the percent ovality using the measurements supplied by DLC-SQC and Power Piping Company and determined that all spools met the requirements of ASME, Section III. The maximum calculated ovality for the spools was 3.5%. This item is resolved.

(Closed) Unresolved Item (82-04-02). The inspector reviewed the changes made to Inspection Procedure, IP-5.2.1 and FCP 11 Appendix 11 for control and disposition of scrap and salvage material. Scrap material is material which will not be used in its initially intended application and which will not be used later for permanent plant installation. Salvage material is material which will not be used in its initially intended application, but which may be used later in a permanent plant installation.

Scrap material will be identified as "scrap" and segregated in an area designated "scrap." Salvage material will be identified as "salvage" and must be maintained under all requirements of the site material control program and in a designated storage area.

On the inspector's daily site tours, note was taken of several areas designated as storage and one area designated as scrap to assure compliance with the changes made to IP 5.2.1 and FCP 11, Appendix 11. This item is considered resolved.

(Closed) Circular 78-07, "Bergen Patterson Test Stand." A memorandum from Stone and Webster to Duquesne Light Company, dated May 15, 1980 states that the above mentioned test stand was not and will not be used.

(Closed) Part 21 (78-88-01), (78-88-02), (78-88-03), (80-88-04), (80-88-05). Fairbanks Morse (Colt Industries) Diesel Generator Deficiencies. The inspector reviewed the vendor modifications made to the emergency diesel generator. The vendor had made repairs or modifications to the following items:

- (1) Leak in Fuel Oil Lines - this item pertained to the replacement of the  $1\frac{1}{4}$  inch fuel oil tubing.
- (2) Defects in Fuel Injection Pumps - all injection pumps for the engines were changed to L'Orange plungers and barrels. The valve springs were redesigned.

- (3) Defects in Exhaust Rocker Arm - as a result of an exhaust rocker arm failure on a Millstone III engine, all exhaust rocker arms were inspected and replaced on one engine. The other one was found acceptable.
- (4) Lube Oil Header Failure - on Millstone III's 134th start, a leak developed in a tube oil header weld. A redesign to eliminate the weld was made and modifications were made to both BV-2 engines.
- (5) Omission of Oil Plugs - at another site, one engine was found with a missing oil plug. BV-2 engines were inspected and found to have the plugs inserted.
- (6) Failed Engine Thrust Bearing - at another site, a failure of the engine thrust bearing occurred due to inadequate clearance, between the thrust bearing halves, for thermal expansion. The drawings were revised to the corrected tolerances and modifications were made to BV-2 engines.
- (7) Failure of Adaptor - at another site, a failure of an adaptor in the air start system occurred on a diesel engine. The failure was due to insufficient wall thickness of the adaptor. BV-2 adaptors were changed to new redesigned adaptors.

As required by IEEE387, a 300 start test was performed on one or more engines after inspection and modifications of items (1) through (4). The 300 start test was not performed for items (5), (6), and (7). These items are considered minor and do not require a 300 start test. In addition, the preoperational testing to be conducted as prescribed by Regulatory Guide 1.108 will adequately qualify the modifications. This item is resolved.

#### 4. Review of Records for Compliance with Commitments to NRC Circular 77-11.

The inspector reviewed the documentation associated with NRC Circular 77-11, titled "Leakage of Containment Isolation Valves with Resilient Seats." The valves onsite associated with this problem are manufactured by Henry Pratt Co. and are butterfly valves type 2F11 and Mark 11, purchased on 2BVS69, 76 and 87A. The corrective action was to check the rubber bonding to assure adhesion and if found acceptable, apply silicone grease to the resilient material. The inspection performed by onsite Quality Control found all bonding acceptable.

The leakage problem was a result of general degradation of the resiliency characteristics of the seal and/or cold temperatures and the associated hardening of the seal. To prevent the degradation, Stone and Webster revised Specification 2BVS-981, "General Storage Requirements" to require application of a silicone based grease on a yearly basis. The inspector audited the storage records for the following type valves ordered to specification 2BVS-076, 069 and 087A and the following conditions were found:

- Valve Type 2HVC-MOD 204A&B. These valves were initially inspected and silicone grease applied on January 10, 1980 and received yearly inspections on January 13, 1981 and January 15, 1982.
- Valve Type VVF015-Gr. Initially inspected on January 10, 1980; no record of any subsequent inspections.
- Valve Type VVF012-A-4, VVF012-C-4, VVF015-A-4, VVF030-A-4, VV1015-A-4, and VV1015-AR-4. One card on file for valves VVF012-A-4; no inspection performed. No cards on file for rest of valves.

Nonconformance and Disposition Report 6259 also contained records of initial inspection for some of the valves, but not all of them.

Failure to either perform the inspection or, if the inspections were performed, failure to record the results of the inspection and application of silicone grease is a violation of 10CFR50 Criterion V. (82-09-01).

5. Actions Taken on Circular 77-04.

The inspector reviewed the licensee actions taken on NRC Circular 77-04, titled "Inadequate Lock Assemblies." When the circular was issued in 1977, it was not yet applicable to BVPS-2. Therefore, no actions were taken at that time. As of this review, no actions have been taken regarding this circular. This item is unresolved until the licensee takes measures to assure the information contained in the circular is transmitted to the proper organizations. (82-09-02).

6. Record Review of Bulletins 79-15 and 78-02.

The inspector reviewed the documentation associated with NRC Bulletins 79-15, "Deep Draft Pump Deficiencies" and 78-02, "Terminal Block Qualification." The licensee's response to Bulletin 79-15 stated that all of the information requested was not available at that time and it would be assembled for NRC review when it became available. No further correspondence was initiated to assure this data would be assembled and forwarded to the NRC.

Bulletin 78-02, "Terminal Block." The licensee responded to this bulletin in 1978 stating that terminal blocks will be used in containment, but will be protected within steel boxes or special enclosures. No further correspondence or specification was found that assured that terminal blocks would be contained in protective boxes.

The above two bulletins will remain open pending review of licensee's actions to assure the commitments will be adhered to. (82-09-03).

7. Post Weld Heat Treatment of Steam Generator Main Steam Nozzles.

During review of Nonconformance and Disposition Report 5020A, the inspector found the following discrepancy. The N&D disposition required the main steam nozzles on Steam Generators B and C to be repaired by welding in accordance with ASME III '71 Edition through Winter '72 Addendum and ASME IX '77 Edition through Winter '78 Addendum.

The Westinghouse instruction manual for the Steam Generators (S&W file #2504.130-001-001A) Figure 1-1, specifies the main steam nozzle material as SA-508 Class 2, P-3 material. Post weld heat treatment of this repair is required by ASME III '71 Winter '72. The initial N&D disposition states that post weld heat treatment will be performed during the flow limiter device installation as described in Section G of FCP-901.4. However, as pointed out by Mr. C. E. Staples (DLC-SQC) in an IOC to S. Dew (S&W SFO) dated August 27, 1979, the post weld heat treatment of the flow limiter device, as defined in Section G of FCP-901.4, was performed prior to the welding specified in the N&D disposition. The disposition of the N&D was therefore revised to specify post weld heat treatment per Section I.5 of FCP-901.5 which calls for raising the temperature of the weld to between 400<sup>0</sup>F and 500<sup>0</sup>F and holding for two hours. This "post weld heat treatment" was performed and the N&D was closed. The heat treatment which was performed does not satisfy the post weld heat treatment requirements of ASME III. In view of this, the inspector inquired whether the weld between the main steam piping and the generator nozzles would be post weld heat treated.

The isometric (100213-3) which details the connection of the main steam line to steam generator nozzle was reviewed and the drawing indicated "yes" in the block indicating post weld heat treatment.

The inspector then asked to review the weld data sheets for these welds and was informed that they had not been issued because a new isometric revision had just been received by Schneider welding department for review and approval, ISO 100213-3A. This revision had eliminated the post weld heat treatment requirement for the weld in question. When questioned about the deletion, the Schneider engineer stated he was unaware of the requirements for PWHT of P-3 material. He further advised that the drawing was not through the complete review cycle. It was approved by Schneider Construction and Engineering. Final review would have been by Quality Control. The inspector interviewed the Quality Control engineer and was satisfied that he was aware of the requirements for PWHT of P-3 material.

A drawing revision (3A) was made on June 19, 1982 which properly reflect the PWHT requirements. The inspector had no further questions on this matter.

8. Reactor Coolant Loop and Safety Injection Piping.

The inspector selected two piping systems being installed in the reactor coolant loop and low head safety injection for review in the following areas:

- Handling and handling protection;
- Installation of pipe spools, fittings, and elbows is being accomplished in accordance with the drawing and onsite procedures;
- Cutting, grinding, bending and method of supporting are meeting onsite procedures.

The following findings were observed:

- Drawing 12241-RV-168B-4B, restraint number 2-SIS-PRR823 gives only the hot gap. The cold gap is necessary for positioning the line during installation. It was observed that this restraint has not been installed and a "Request for Information" inquiring about the cold setting was made to S&W Engineering in August 1981.
- On the reactor coolant line, 2RCS-3-1, tack welds were noted at three locations where an apparent temporary fixture had been removed. The inspector questioned the site quality control inspector on the controls used to assure that the tacks would be removed without damaging the piping. The only authorization used was a speed letter from Schneider to Westinghouse. Westinghouse's response was to remove the guard piping before installation. In further discussions with the Schneider QA manager, he further advised that a hold tag would be placed on the pipe and an "Inprocess Inspection Check List" would be issued to assure code compliance. The check list was issued on August 27, 1982 and reviewed by the inspector prior to the completion of this inspection interval. The inspector had no further questions on this matter.

9. Structural Steel Records

The inspector reviewed the following documentation associated with Category I structural steel to ascertain compliance with AWS D1.1 (1973) and AISC.

- Structural Steel Specification 2BVS-412;
- Receiving inspection reports for Mark Number 1048D1, 1048M1, 1095D1, 1122D1, 1122D2, 1093M4, 1065B1;
- Material test report from Modulus Corporation for A325 bolts, nuts and washers;

- Inspection Procedure 6.3;
- Installation inspection report.

The above inspected items met the applicable requirements and no violations were identified.

10. Record Review.

The inspector reviewed the documentation package for a Walworth Company valve, fabricated to the requirements of ASME Section III, Class 2. The valve is a 4 inch 600 pound wedge gate valve, serial 5232 WE, fabricated to order number 2BV-73. The following records were reviewed:

- NPV-1, Data Report and Certificate of Compliance;
- Chemistry and mechanical test for heats 977JP3 (Body), 716L (Bonnet), 971J wedge;
- Wall thickness verification, liquid penetrant and radiographic inspection report;
- Heat treatment record;
- Weld inspection record and weld repair map;
- Hydrostatic test.

The above inspected items met the requirements of ASME Section III, Class 2. No violations were identified.

11. Concrete Placement

The inspector observed portions of a concrete pour being made on the top dome of the reactor containment building to determine compliance with the PSAR and ACI commitments. The inspector observed pumping and discharge methods including chute controls and vibration controls and quality control activities associated with the pour. The inspector found all areas inspected in compliance with the licensee's commitments. No violations were identified.

12. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable, items of noncompliance, or deviations. Two unresolved items were identified and are discussed in paragraphs 5 and 6 of this report.

13. Exit Interview

A meeting was held with the licensee representatives indicated in paragraph 1 on August 31, 1982 to discuss the inspection scope and findings.