

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

Region I

Report No. 50-412/80-08  
Docket No. 50-412  
License No. CPPR-105 Priority -- Category A  
Licensee: Duquesne Light Company  
435 Sixth Avenue  
Pittsburgh, Pennsylvania 15219  
Facility Name: Beaver Valley Power Station, Unit 2  
Inspection at: Shippingport, Pennsylvania  
Inspection conducted: August 11-15, 1980  
Inspectors: Lewis Narrow 9/4/80  
L. Narrow, Reactor Inspector date signed  
G. A. Walton Aug. 28, 1980  
G. A. Walton, Reactor Inspector date signed  
J. Paolino 8/28/80  
J. Paolino, Reactor Inspector date signed  
Approved by: R. W. McGaughy date signed  
R. W. McGaughy, Chief, Projects Section  
RC&ES Branch

Inspection Summary:

Inspection on August 11-15, 1980 (Report No. 50-412/80-08)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of the QC program for electrical cable and cable tray procurement and storage; review of containment liner dome and embedment records; visual examination of steam generator support welds; independent verification of pipe wall thickness; and review of the status of outstanding items. The inspection involved 74 inspector hours onsite by three regional based inspectors.

Results: No items of noncompliance were identified.

## DETAILS

### 1. Persons Contacted

#### Duquesne Light Company (DLC)

- A. Abuhaydar, QC Electrical Engineer
- \*R. Coupland, Director of Quality Control
- \*H. N. Crooks, Jr., Assistant Director of Quality Control
- \*C. R. Davis, Senior QA Engineer
- \*D. W. Denning, Assistant Director of Quality Control
- D. Gasper, QC Inspector
- \*A. F. Mosso, QA NDE Specialist
- J. Shoemaker, Supervisor, Receipt Inspection and Storage
- \*W. Sikorski, QA Supervisor
- \*R. J. Swiderski, Superintendent of Construction
- H. Van Wassen, Project Manager
- \*R. Washabaugh, Manager, Quality Assurance Department
- R. L. Williamson, Quality Control Inspector
- A. Zelesnak, Manager, USS

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

- K. M. Bendiksen, Assistant Project Engineer (Boston)
- W. H. Bohlke, Project Engineer (Boston)
- \*S. M. Dew, Assistant Project Engineer
- E. Farino, Engineer, Electrical
- R. Federico, Assistant Project Engineer (Boston)
- \*A. C. McIrtyre, Site Lead Engineer
- C. O. Richardson, Project Manager
- N. Sacco, Engineer, Mechanical
- \*J. E. Williams, Resident Manager

#### Sargent Electric Company (SEC)

- R. Bowser, Electrician
- R. Cannon, QC Technical Assistant

#### Pittsburgh-Des Moines Steel Company (PDM)

- J. Madden, QA Manager

The inspector also interviewed other licensee and contractor personnel during the inspection.

\*Denotes those present at the exit interview.

## 2. Plant Tour

The inspector observed work activities in progress, completed work, and construction status in several areas. Work items were examined for obvious defects and for noncompliance with regulatory requirements and licensee commitments. Specific work activities and completed work observed by the inspector included installation of embedments for the containment wall, completed cadwelds, structural steel installation temporary storage conditions, containment spray system headers and welded connections and fabrication of supports for recirculation and quench spray systems.

No items of noncompliance were identified.

## 3. Electrical Cable Tray Systems - Work Observations

The inspector examined work performance, partially completed work and completed work pertaining to safety related cable trays to determine whether the requirements of applicable specifications, work procedures drawings and instructions have been met.

- a. For this determination the inspector examined the following documentation:
  - Cable Tray Specification No. 2BV5-316 Revision 3, dated March 5, 1980
  - Cable Tray Installation Specification No. 2BVVS-931 dated March 31, 1980
  - Purchase Order No. 2BV-316
  - Cable Tray Installation at elevation 750-0 in the Service Building
  - IEEE Standard 344-1971 (Licensee response to NRC question 3.49, Amendment 3, dated March 19, 1973 states all seismic class 1 electrical equipment will therefore be qualified and documented in general accordance with provisions of IEEE Standard 344-1971.
  - Vendor field surveillance report
- b. The inspector examined the cable tray installation at elevation 750-0 in the service building. He observed that the weld areas of the galvanized steel "T" crossover trays show evidence of melt-through, excessive spatter, apparent lack of fusion and other visual defects. The rungs attached to the "C" channel of the "T" crossover tray appear to be tack welded to the top and bottom of the "C" channel.

The engineering drawing does not specify type of weld to be used. In addition, the vendor field surveillance report states that the inspector inspected all welds after the hot dip galvanizing process. The inspector questioned the adequacy of inspections of welds which have been galvanized.

This item is unresolved pending NRC review of licensee evaluation and determination of acceptability of welds on "T" crossover trays. (50-412/80-08-02)

- c. The inspector observed that the licensee was using threaded bolts on the cable tray splice plates in lieu of the knurled round shank or plain round shank sized for press fit as stated in the specification 2BVS-316. The licensee was requested to provide engineering justification for the change from the specification requirement. This item is unresolved pending NRC review of licensee justification. (50-412/80-08-02)

#### 4. Electrical Cable Tray Systems - Records Review

The inspector reviewed pertinent work and quality records for seismic qualification of Category 1 safety related cable trays to determine whether the records reflect work accomplishments consistent with NRC requirements and licensee commitments in the area of receipt inspection, certificate of compliance, type and qualification of materials.

Documents reviewed for this determination include:

- Stone & Webster letter to Duquesne Light Company dated March 28, 1978 no. 2DLS-6633, DS7803280020
- Vendor load test data (Sequence No. DL790112-0005, -0007, 0008 and 0009; Sequence No. DN781221-0003, 0005)

The documentation reviewed was not adequate by itself to assure that the cable tray system including the tray mounting technique would meet seismic conditions at the plant. The licensee's AE stated that the cable tray system is designed via a computer code and that a description of this could be made available. This item is unresolved pending a review of additional documentation to be supplied by the licensee. (50-412/80-08-04)

#### 5. Interim Storage of Equipment

During the plant tour the inspector observed three component cooling system valves temporarily located in the reactor building at Elevation 692'-11". The building is not fully enclosed and the valves were protected by a waterproof wrapping from rain and other adverse conditions. Inspection of the valves disclosed no evidence of corrosion in areas which might affect

operation of the valves. However, in view of the delay in the construction schedule it is anticipated that the equipment will remain in this location for an extended time period. The inspector questioned the effectiveness of such storage conditions over the lengthy storage period which is anticipated.

This question was discussed with representatives of the licensee. They stated that an inspection would be conducted of all equipment stored in buildings which are not fully enclosed and storage conditions would be upgraded as necessary for the anticipated storage period. This item is unresolved pending review by an NRC inspector of the corrective action. (80-08-01)

#### 6. Electrical Cable-Storage and Control

The inspector examined the cable storage area to determine whether the work activities are accomplished in accordance with established procedures and instructions in the areas of storage, identification, records surveillance inspection and cable issue.

For this determination the inspector examined the following:

- Cable reels numbers 1, 4 and 26 for type NKZ-10 cable and cable reel numbers 1 and 17 for type NKZ-15 cable
- Cable specification 2BVS-316
- Purchase Order No. 2BV-316
- Cable record card for above referenced cable reels
- Cable storage yard

No items of noncompliance were identified.

#### 7. Verification of Pipe Wall Thickness

The inspector performed pipe wall thickness checks using the ultrasonics method with a Nortec 123D instrument. The following welds and adjacent base materials were examined.

<u>System</u>	<u>Nominal Wall</u>	<u>Measured Wall</u>
N1141-RSS-22-1	.312"-12.5%	.315"
RSS-63-1	.322"-12.5%	.303"
RSI-63-1	.322"-12.5%	.316"
SIS-69-1	1.312"-12.5%	1.203"
SIS-68-1A	1.312"-12.5%	1.180"
SIS-251-1	.375"-12.5%	.353"
SIS-69-4	1.312"-12.5%	1.158"

<u>System</u>	<u>Nominal Wall</u>	<u>Measured Wall</u>
SWS-300-7	.322"-12.5%	.310"
SWS-329-9	.322"-12.5%	.346"
RHS-16-5	.365"-12.5%	.426"

The verifications were made against the drawing requirements, the ASME Section III Code and ordering requirements as specified in ASA-B36.10 and B36.19. The wall thicknesses are within the allowable tolerances and all areas checked exceeded the minimum wall thickness requirements.

No items of noncompliance were identified.

8. Visual Examination of Steam Generator Supports

The inspector performed a visual examination of the steam generator supports which are presently stored on site. The inspectors performed the visual examination using the acceptance criteria of AWS D.1.1. The areas reviewed were in accordance with the applicable acceptance standards.

No items of noncompliance were observed.

9. Record Review-Containment Lines

The inspector performed a record review of the onsite fabrication of certain welds in the containment liner head. The fabrication was by PDM in accordance with ASME Section III 1971 Edition, Winter 72 Addenda, Class MC. The nondestructive examinations were performed in accordance with Section V, Article 3. The inspector selected seam weld number 43 and reviewed the following documentation.

- . Vacuum Box Report Number 263
- . Radiographic report number DB1-1007 Station 18-19
- . Welder identification M1, K1, W4
- . Welder qualification - SMAW-M1, K1
- . Audit conducted by PDM, Eastern Division number 80-103 conducted June 2, 1980
- . Audit conducted by PDM Corporate Q.A. number 79-510 conducted November 24, 1979
- . Authorized Inspector Audit conducted by Factory Mutual Engineering on May 13, 1980

The areas reviewed met the applicable requirements, including timely corrective action of audit findings.

No items of noncompliance were observed.

10. Record Review-Embedment Supports

The inspector performed a record review of the shop fabricated items designated RC752A-4S, Piece Mark Number VIIMF shown on drawing M752-4S. The records reviewed were those from the fabricators shop and included material test reports. The items reviewed are embedments supports presently being installed inside containment at elevation 801'2". They were fabricated to the requirements of AWS D1.1 by Cives Steel Company. The inspector reviewed the following documentation.

- . Receipt Inspection Package
- . Magnetic Particle Test Reports
- . Material Test Report for Heat 70D341.

All items reviewed met the applicable requirements.

No items of noncompliance were identified.

11. Review of Deficiencies Reported by Vendors

The omission of a test of safety injection circuitry in their test program had been reported by Westinghouse on November 7, 1979 in accordance with 10 CFR 21 and had recommended corrective action to the licensee. The inspector examined correspondence 2DLS-1045P and 2DLC-3643 between S&W and DLC which provides that Westinghouse be instructed to incorporate the recommended safety circuit test in the test procedure package to be provided for the plant.

The inspector had no further questions concerning this item.

During 1978 and 1980 Fairbanks Morse Engine Division of Colt Industries had reported several deficiencies which had been identified during assembly and tests of the emergency diesel generators. These deficiencies had been reported in accordance with 10 CFR 21 and had been reviewed during inspections 50-412/80-03 and 50-412/80-07.

The status of these units was discussed with representatives of the licensee. The inspector was informed that all N&D's have been cleared and both units have been released for shipment, except for some minor items. The inspector was also informed that similar units had been in use for several years at the Farley nuclear facility.

This item remains open pending review by an NRC inspector of vendor documentation.

12. Review of Nonroutine Events Reported by the Licensee

On August 1, 1980 the licensee reported a significant deficiency in accordance with 10 CFR 50.55(e). The report was by telephone and stated that as a result of a breakdown in weld rod control, type E-309 weld rod had been issued and used for a weld for which type E-308 rod was specified. Since this was the latest in a series nonconformances identified by NRC and by the licensee; all of which reflected deficiencies in weld rod control, the licensee issued a stop work order for all welding activities by the subcontractor.

The inspector examined the following documents:

- . Stop Work Order dated August 1, 1980 S&W to Schneider, Inc.
- . N&D Report No. 6260 which describes the problem and identifies the welds involved.
- . Memorandum DLC-SQC-#0652-A which describes the organization and purpose of a Surveillance Group to provide additional QC surveillance of piping installation.
- . Letter dated August 8, 1980 from S&W to Schneider, Inc. requesting information to be provided prior to consideration of work resumption.

The inspector was informed that IE Region I would be notified prior to resumption of work and informed of the corrective actions taken.

This item remains open.

13. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (80-04-01): Failure to record and provide interpretation of indications identified during radiography.

The inspector reviewed the licensee's corrective actions and actions taken to prevent recurrence of similar nonconformances. The licensee had performed a re-review of approximately one thousand six hundred radiographs to ascertain that radiographs and their interpretations met all requirements. In addition, those radiographs which showed film artifacts in the area of interest, and which had been processed by automatic processing were reradiographed and manually processed.

The licensee has also added a "Section V" to the Site Quality Control NDE Manual and issued a new procedure "NDE/ADMIN-1" entitled "Interpretation and Review of Radiographic Film/Reports" dated May 19, 1980. The inspector reviewed the above listed procedural changes. Also the inspector reviewed



the following 6 welds to ascertain code compliance with interpretation, overview, recording of acceptable revelant and nonrevelant film markings, film densities, and corrective actions taken as a result of rejectable indications. The following welds were reviewed.

2-RHS-010-004-2  
2-SIS-251-F02  
2-SIS-070-F01  
2-SIS-008-005-2  
2-CHS-004-14-2  
2-CHS-016-F01

The licensee had rejected five of the above welds and repairs were in progress. The inspector had no further questions and this item is considered to be resolved.

During review of the radiographs as described above, the licensee identified a condition which was orally reported on May 22, 1980 as a potential significant deficiency. The potential deficiency concerning a linear indication in the weld overlay on a six-inch recirculation spray line pipe spool furnished by Power Piping Company. Further review of over 120 radiographs of similar welds identified no additional similar defects. The licensee has therefore concluded that this one error was not a significant deficiency. The suspect area has been repaired by the licensee.

The inspector had no further questions concerning this item.

14. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, or items of noncompliance. Unresolved item identified during this inspection are discussed in Paragraphs 3, 4 and 5.

15. Exit Interview

The inspector met with licensee and contractor representatives (denoted in Paragraph 1) at the conclusion of the inspection on August 15, 1980. The inspector summarized the scope and findings of the inspection as described in this report.