

U. S. ATOMIC ENERGY COMMISSION  
REGION I  
DIVISION OF COMPLIANCE

Report of Inspection

CO Report No. 247/69-8

Licensee: Consolidated Edison Company  
Indian Point No. 2  
License No. CPPR-21

Dates of Inspection: July 23 and 24, 1969

Dates of Previous Inspection: July 1 and 2, 1969

Inspected By: N. C. Moseley  
G. L. Madsen, Reactor Inspector

8/27/69  
Date

Reviewed By: N. C. Moseley  
N. C. Moseley, Senior Reactor Inspector

8/27/69  
Date

Proprietary Information: None

SCOPE

An announced inspection was made of the Consolidated Edison Company, Indian Point No. 2 construction site on July 23 and 24, 1969. The main purpose of the visit was to review the status of the licensee's investigation relating to previous pipe allegations.

SUMMARY

Con Ed instituted an audit program for all stainless steel components procured from Dravo. Problems identified to date are substitution of materials and apparent deficiencies in mill certification information.

A visual inspection of mechanical components associated with a portion of the safety injection system revealed no discrepancies.

Seal welding of the control rod housings is in progress.

DETAILS

I. Persons Contacted

A. Con Ed

Mr. A. Corcoran, Site Construction Engineer  
Mr. P. Leo, Asst. " " "  
Mr. E. Dadson, Site Quality Assurance Supervisor  
Mr. F. Matra, Piping Engineer

8111030047 690905  
PDR ADOCK 05000247  
Q PDR

B. Westinghouse

Mr. L. Cunningham, APED, Field Service Engineer  
Mr. T. Nader, Welding Inspector

C. United Engineering

Mr. R. Phelps, Mechanical Quality Control

II. Results of Visit

A. Pipe Allegations

1. General

In conjunction with the previously reported\* pipe allegations, Con Ed instituted a pipe audit program for stainless steel pipe and fittings procured from Dravo, the supplier of all class I stainless for IP-2. Mr. Corcoran provided the inspector with an interim report, dated July 9, 1969, which described the status of Con Ed's investigation relating to this matter. Con Ed utilized their own personnel and UST to review mill certifications, visit Dravo, and visit the pipe and fitting suppliers to determine the acceptability of stainless steel components supplied to IP-2. During the investigations, records associated with radiography, hydrostatic testing, chemical properties, and physical testing were audited. Two general problems have been identified. First is the substitution of materials and deviations in chemical and physical properties of materials from purchase specification criteria. The second problem centers around apparent deficiencies in supporting mill certifications relating to physical and chemical properties for material components for class I pipe systems of this plant.

2. Dravo Visits

The following deficiencies were found in one or more mill certificates reviewed at Dravo.

- a. Insufficient identification of base material. (Pipe - seamless or welded, fittings - plate, pipe or forged).
- b. No reference to hydrostatic testing.
- c. No results of radiographic inspection.

- d. Flattening and/or bend test results not reported.
- e. Low carbon content in violation of the purchase specifications requirements.

3. Supplier Visits

The six major materials suppliers used by Dravo were visited by UST to determine the ability to manufacture ASTM A-312 pipe and to review their inspection programs, policies, and documentation methods. This effort was made in order to correlate the deficiencies noted in the mill certifications to the suppliers inspection and testing practices. The UST report covering this effort has not been completed but will be included in the final Con Ed report relating to the pipe allegation investigation.

4. Status

The present status of the investigation as related to the initial allegations\* follows:

- a. One manufacturer, Youngstown Welding and Engineering, visited by UST does manufacture pipe to ASTM A-312 using filler metal and identifies the finished product as A-312 FMA (filler metal added). This is only done on pipe with diameters greater than 12 inches. At this stage, Con Ed has not located any mill certifications of materials with this identification at IP-2. Con Ed plans to continue a field investigation on this subject.
- b. Substitution of A-358 pipe when specification called for A-312 occurred in a limited number of occasions.
- c. Ultrasonic measurements of selected lengths of pipe on the IP-2 site have not disclosed any wall thickness deficiencies.
- d. The visits to Dravo established that some mill certificates are inadequate or are only affidavits made out to cover stock material or lots of material. UST visits were made to correlate these deficiencies in the mill certificates to the suppliers fabrication procedures in order to establish if tests were performed but not reported on the certificates. Examples of deficiencies found and resolution approaches are as follows:

- 1. Fifty-eight Taylor Forge mill certificates for fittings did not

list hydrostatic testing. Thirty-two of these are composed of pipe supplied by Trent Tube Company to Taylor Forge. UST observed that hydrostatic testing is part of Trent Tube's manufacturing process. The remaining twenty-six certificates are being investigated to determine if they are end fittings, weld caps, or elbows.

2. Mill certificates issued by Associated Steel Company were deficient as to radiographic, hydrostatic, flattening, and bend testing. Dravo performed independent radiographs of this material and the film is available. Associated Steel Company has been taken over by Tube Associates but the acquisition did not include the transfer of Associated Steel's records which are not now traceable. Dravo, Westinghouse, and UE&C have been asked to provide copies of their audit reports of this manufacturer.

Con Ed stated that investigations relating to piping will continue until all questionable conditions have been resolved. Westinghouse has been requested to provide information relating to substitution of A358 pipe for A-312, existence of chemical property discrepancies, verification of acceptability of Associated Steel Company, and listings of mill certificates numbers which contains identification of specific items supplied by each certification.

#### B. Safety Injection System

The inspector reviewed Con Ed's mechanical systems audit program for the safety injection system. The review included the following:

1. Verification of installation of the proper pipe spool pieces, valves, pumps, and field welds as specified on the field fabrication isometric drawings.
2. Visual examination of all components and welds.
3. Review of records for completeness and proper acceptance of all field welds.
4. Determination of conformance of the system to the requirements of the Final Safety Analysis Report.

The inspector made a visual check of the safety injection system mechanical components from the refueling storage and boric acid tanks to and including the high pressure safety injection and residual heat removal pumps. All components were physically installed in accordance with the safety injection system flow diagram as presented in the FSAR. (Figure 6.2-1). A review of the valve body markings indicated usage of austenitic stainless steel in conformance with the FSAR\* and proper service pressure ratings for the intended function.

The field weld records for this system will be reviewed for completeness during a future visit.

C. Control Rod Drive System

Ten control rod vessel head seal welds have been formed. A review of welding procedures, welder qualifications, weld records and visual observations of the welds revealed the following:

1. Welding Procedure

The Westinghouse welding procedure No. 595681 was found to conform to Section IX of ASME Code. The welding is performed by the automatic gas shield tungsten arc process in the horizontal position only. The procedure provides for cleaning with acetone, grinding restrictions, fit-up requirements, use of ASTM A371-ER 308 electrodes, preheating to a minimum temperature of 60°F, and final inspection of dye penetrant testing and hydrostatic testing at 3110 psig.

2. Welder Qualifications

Two welders have been qualified to perform the CRD seal welds. The qualification records were audited and found to conform to the requirements of ASME Section IX and were dated June 11, 1969 and July 16, 1969.

3. Welding Performance

A visual observation of the ten perviously formed seal welds revealed no deficiencies.

III. Management Interview

A. A management interview was held with Messrs. Corcoran and Dadson at the conclusion of the visit. Items discussed included the following:

a. Pipe Allegation

The inspector indicated that Con Ed's investigation relating to the pipe allegation appears to be responsive. When asked if the use of 304L material was considered a variance from specifications, Mr. Corcoran indicated that this item would be investigated and resolved. Upon request, Mr. Dadson indicated that all stainless steel spool pieces in the IP-2 systems would ultimately be traced to mill certificates that are persently being investigated. Mr. Corcoran concluded that the problems relating to the Associated Steel records appear to be the most questionable condition uncovered to date.

b. Safety Injection System

The inspector indicated satisfactory findings with respect to Con Ed's mechanical system audit program and physical arrangement of components in the portion of the safety injection system which was visually reviewed.

c. Control Rod Drive Systems

The inspector indicated favorable findings relative to the control rod drive system seal weld procedures, qualifications, and visual conditions of ten completed welds.

RECEIVED  
U.S. NUCLEAR REGULATORY COMMISSION

APR 11 1978

RECEIVED

RECEIVED

1969 SEP 8 AM 11 01

U.S. ATOMIC ENERGY COMM.  
DIVISION OF COMPLIANCE

TO: [Illegible]

FROM: [Illegible]

SUBJECT: [Illegible]

DATE: [Illegible]