



UNITED STATES  
ATOMIC ENERGY COMMISSION

DIVISION OF COMPLIANCE  
REGION I

970 BROAD STREET  
NEWARK, NEW JERSEY 07102

201 645-

August 20, 1970

J. P. O'Reilly, Chief, Reactor Inspection and Enforcement Branch, Division of Compliance, HQ

CONSOLIDATED EDISON COMPANY (INDIAN POINT 3)  
DOCKET NO. 50-286

The attached report of inspection of Consolidated Edison Company's Indian Point No. 3 construction site, conducted July 14 through 16, 1970, is forwarded for information.

Two items of nonconformance were found. Welding of carbon steel to stainless steel in the refueling canal liner was being performed without a qualified procedure (P-1 to P-8), and the welding procedure (P-1 to P-1) for Class I carbon steel piping does not stipulate the flow rate of the gas for purging and shielding and specifies two pre-heat rates which vary by more than 100° F.

Repair of the containment liner deviation has been started. Procedures for correcting the deviations were reviewed and approved by UE&C, Westinghouse and Consolidated Edison.

*JS/O'R/Staff 9/23/70*  
*JBH*  
*AG*  
*RHG*

*for* *do m Hunicutt*  
E. M. Howard  
Senior Reactor Inspector

cc: E. G. Case, DRS (3)  
P. A. Morris, DRL  
R. S. Boyd, DRL (2)  
R. C. DeYoung, DRL (2)  
D. J. Skovholt, DRL (3)  
P. W. Howe, DRL (2)  
L. Kornblith, Jr., CO  
Regional Directors, CO  
REG Files

02977

8111180568

*epd*

RECEIVED

1970 AUG 24 AM 9 17

U.S. ATOMIC ENERGY COMM.  
DIVISION OF COMPLIANCE

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

Report of Inspection

CO Report No. 286/70-4

Licensee:

CONSOLIDATED EDISON COMPANY  
Indian Point No. 3 (IP-3)  
Construction Permit No. CPPR-62  
Category A

Dates of Inspection:

July 14, 15 and 16, 1970

Dates of Previous Inspection: - March 24 and 25, 1970

Inspected by:

*R. F. Heishman*  
R. F. Heishman, Principal Reactor Inspector

8/12/70  
Date

*R. L. Brown*  
R. L. Brown, Reactor Inspector (Construction)

8/13/70  
Date

*E. M. Howard for*  
D. E. Whitesell, Reactor Inspector (Construction)

8-13-70  
Date

Reviewed by:

*E. M. Howard*  
E. M. Howard, Senior Reactor Inspector

8-13-70  
Date

Proprietary Information:

None

Scope

A routine announced inspection of the 3023 MWT Pressurized Water reactor (Indian Point No. 3) Construction site at Buchanan, New York, was conducted on July 14, 15 and 16, 1970. The inspection was directed toward the requirements of Attachment C, "Containment", Attachment E, "Other class I Structures," Attachment F, "Reactor Coolant Pressure Boundary Piping" and Attachment G, "Other class I Piping" of Provisional Instruction 3800/2 and other outstanding inspection items.

Summary

Safety Items

None

02977

811 160085

RECEIVED

1970 AUG 24 AM 9 17

U.S. ATOMIC ENERGY COMM.  
DIVISION OF COMPLIANCE

TO: SAC, NEW YORK  
FROM: SAC, PHOENIX  
SUBJECT: [Illegible]

RE: [Illegible]

DATE: [Illegible]

U.S. ATOMIC ENERGY COMM.  
DIVISION OF COMPLIANCE

Nonconformance Items

1. The PSAR in Supplement to Summary of Application dated February 20, 1969, Appendix D, Section III-B states in Part, "The UE&C Field Quality Control group shall: . . . 3. Assure that Vendor Materials documentation and construction conform to the requirements and intent of applicable specifications, drawings and procedures."

Contrary to the statement above, no approved welding procedure was available for welding carbon steel to stainless steel (P1 to P8) for the refueling canal liner required by Specification No. 9321-05-225-3 which specifies welding procedures will be qualified in accordance with Section IX ASME B&PV code.

2. The PSAR in Supplement to Summary of Application date February 20, 1969, Appendix D, Section VI, F. 2. states in part, "Welders and Welding procedures will be certified in accordance with ASME Code requirements."

ASME Code, Section IX, paragraph Q-11 states: "The Welding procedures must be set up as a New Procedure Specification and must be completely requalified when any of the applicable changes listed below are made in the procedure.: . . . V-5 (a) A decrease of 100 F or more in the minimum specified preheating temperature.: . . . V-10 (b) An increase of 25 percent or more, or a decrease of 10 percent or more in the rate of flow of shielding gas or mixture.

Contrary to the statement above, Courter's Welding Procedures No. 1 & 20 for field welding carbon steel to carbon steel (P1 to P1) does not stipulate the flow rate of the gas for purging and shielding. Two preheat temperatures are stipulated; one for 200°F if the carbon content is 0.15 percent - 0.20 percent; and 500°F if the carbon content is 0.20 percent - 0.35 percent.

Unusual Occurrences

None

Status of Previously Reported Problems

1. Staggering of Horizontal Rebar Splices (CO Report No. 286169-5)

The previously reported problem of improper horizontal separation of rebar splices in the containment wall has been resolved by engineering evaluation and replacement of cadwells where possible. An engineering evaluation by the designer (UE&C) was performed to

evaluate those areas where the splices could not practically be replaced and was approved by Con Ed. Consolidated Edison indicated that the evaluation was discussed with Dr. Gluckman and DRL. This item is considered resolved.

2. Quality Control Assumption by WEDCO (CO Report No. 286/69-9)

Wedco assumed first level Quality Control responsibility of Indian Point No. 3 on April 20, 1970, replacing UE&C. The change was approved by Con Ed for IP2 and 3 and reported for IP2 only to the AEC under Docket No. 50-247 (Indian Point No. 2); however, no documentation has been submitted regarding the assumption of Quality Control responsibility by Wedco at Indian Point No. 3. This item remains outstanding.

3. Containment Out-of-Round (CO Report No. 286/70-2)

CB&I has developed a plan for correction of containment liner deviations which is outlined in a letter from CB&I to Wedco dated February 24, 1970. This plan was reviewed and approved by the designer (UE&C) and by the Westinghouse, PWR Systems Division in a letter from Mr. R. F. Devine, Manager, Architect Engineering, Westinghouse to Mr. J. J. Grob, Jr., Con Ed dated May 13, 1970. Con Ed concurred with this method of repair and the repair is in progress.

Repair consists of using jacking pipes, wedges and mechanical jacks braced against timber softeners on the crane wall to return the shell of the liner to tolerance. At areas of maximum variation, either vertical wide flanges or horizontal angles were installed as softeners for the jacking pipe. This was to be followed by thorough examination of plates at jacking points for assurance that no local deformations resulted. Visual inspection of all plate-to-plate welds and plate-to-channel welds at the jacking points and retest of weld pressurization system was required. In addition the results of the above will be documented and made a part of the QC records. CO:I will review this documentation when completed. This item remains outstanding.

4. WEDCO Procedure, (Calibration Frequency) (CO Report No. 286/70-2)

The Wedco procedure describing the frequency for calibrating the equipment used for calibration and test was not completed at the time of the inspection. A completion date of September 15, 1970 was given to the inspector by Wedco. This item remains outstanding.

5. Concrete Repairs (CO Report No. 286/70-3)

a. Crack in Floor Slab of Primary Auxiliary Building (PAB)

Investigation of the small crack in the floor slab at elevation 34 feet of the PAB revealed the crack to be slight. The investigation consisted of probing and chipping to solid concrete ( 3-inches) after which repairs were completed by grouting. The inspector reviewed the documentation and found it to be adequate. This item is considered resolved.

b. Polar Crane Wall (Biological Shield) Honey Combing (CO Report No. 286/70-2)

The 2-foot by 2-foot area in the polar crane wall reported as a possible area of honey combing was investigated by probing and chipping. The results indicated only surface voids which were repaired by hand placed mortar after removal of the defective concrete. This item is considered resolved.

c. Containment Floor Slab Cracks (CO Report No. 286/70-2)

The surface cracks in the containment floor slab (elevation 46 feet) have been investigated, by chipping, probing, and visual examinations and found to be surface conditions. The plan is to use EPOLITH patcher, which is an epoxy patching compound for concrete, to repair the surface cracks. The manufacturer of the patching compound is currently writing a procedure for preparation of the surface to be repaired which will be utilized in the repair of these cracks. This item remains outstanding pending the completed repair and review of the documentation by CO:I.

6. Cadwell Difficulties (CO RI&E, Memo September 20, 1969)

The faulty cadwell powder discussed in memo, Reactor Inspection and Enforcement Branch, CO:HQ, dated September 20, 1969 has been discussed with the licensee. Verification by the licensee, that the powder used in cadwelding at IP-3 was not from the faulty lots, has been accomplished. This item is considered resolved.

7. Anchor Valves (CO, RI&E, Memo February 18, 1970)

The use of Anchor Valves was discussed with the licensee in accordance with and in the context described in Memo, Reactor Inspection and Enforcement Branch, CO:HQ, dated February 18, 1970. No valves are being procured from Anchor according to the licensee. This item is considered resolved.

8. Concrete Pumped through Aluminum Pipe (CO RI&E Memo, April 22, 1970)

In accordance with memo, Reactor Inspection and Enforcement Branch, CO:HQ, dated April 22, 1970, the use of aluminum pipe for pumping concrete was reviewed. Con Ed stated that aluminum pipe for pumping concrete had not and would not be used. Wedco (UE&C) concrete specifications prohibit the use of aluminum pipe for pumping concrete. This item is considered resolved.

9. ATAPCO piping (CO RI&E, Memo, December 8, 1969)

Discussions were held with Con Ed in accordance with memo, Reactor Inspection and Enforcement Branch, CO:HQ, dated December 8, 1969 regarding ATAPCO piping. The licensee stated no piping was being procured from ATAPCO. This item is considered resolved.

Other Significant Items

1. Branch Radiography Laboratory, Incorporated has been awarded a contract by Wedco to provide nondestructive testing for Unit No. 3.
2. The Reactor Pressure Vessel is scheduled to be shipped to the site for storage on or about July 25, 1970. No approved procedures for handling and storage were available.

Containment (Attachment C, PI 3800/2)

The containment vessel is supplied complete by CB&I who is responsible for supplying material, shop fabrication, site erection, welding, inspection and testing.

The inspector was unable to determine if CB&I procedures and other documents covering their activities do exist, because CB&I management personnel were not on the construction site in sufficient time to arrange an audit during this inspection.

The inspection<sup>ons</sup> reviewed the Con Ed, Wedco, and CB&I documents (specifications, procedures, drawings, records, etc.) that were available. The following procedural deficiencies were found:

1. Weld Material Control procedure not available (4805.04-g).
2. Detail drawings do not specify the applicable welding procedure for a specific weld (5405.04-f4).



8. Concrete Pumped through Aluminum Pipe (CO RI&E Memo, April 22, 1970)

In accordance with memo, Reactor Inspection and Enforcement Branch, CO:HQ, dated April 22, 1970, the use of aluminum pipe for pumping concrete was reviewed. Con Ed stated that aluminum pipe for pumping concrete had not and would not be used. Wedco (UE&C) concrete specifications prohibit the use of aluminum pipe for pumping concrete. This item is considered resolved.

9. ATAPCO piping (CO RI&E, Memo, December 8, 1969)

Discussions were held with Con Ed in accordance with memo, Reactor Inspection and Enforcement Branch, CO:HQ, dated December 8, 1969 regarding ATAPCO piping. The licensee stated no piping was being procured from ATAPCO. This item is considered resolved.

Other Significant Items

1. Branch Radiography Laboratory, Incorporated has been awarded a contract by Wedco to provide nondestructive testing for Unit No. 3.
2. The Reactor Pressure Vessel is scheduled to be shipped to the site for storage on or about July 25, 1970. No approved procedures for handling and storage were available.

Containment (Attachment C, PI 3800/2)

The containment vessel is supplied complete by CB&I who is responsible for supplying material, shop fabrication, site erection, welding, inspection and testing.

The inspector was unable to determine if CB&I procedures and other documents covering their activities do exist, because CB&I management personnel were not on the construction site in sufficient time to arrange an audit during this inspection.

The inspection reviewed the Con Ed, Wedco, and CB&I documents (specifications, procedures, drawings, records, etc.) that were available. The following procedural deficiencies were found:

1. Weld Material Control procedure not available (4805.04-g).
2. Detail drawings do not specify the applicable welding procedure for a specific weld (5405.04-f4).

8. Concrete Pumped through Aluminum Pipe (CO RI&E Memo, April 22, 1970)

In accordance with memo, Reactor Inspection and Enforcement Branch, CO:HQ, dated April 22, 1970, the use of aluminum pipe for pumping concrete was reviewed. Con Ed stated that aluminum pipe for pumping concrete had not and would not be used. Wedco (UE&C) concrete specifications prohibit the use of aluminum pipe for pumping concrete. This item is considered resolved.

9. ATAPCO piping (CO RI&E, Memo, December 8, 1969)

Discussions were held with Con Ed in accordance with memo, Reactor Inspection and Enforcement Branch, CO:HQ, dated December 8, 1969 regarding ATAPCO piping. The licensee stated no piping was being procured from ATAPCO. This item is considered resolved.

Other Significant Items

1. Branch Radiography Laboratory, Incorporated has been awarded a contract by Wedco to provide nondestructive testing for Unit No. 3.
2. The Reactor Pressure Vessel is scheduled to be shipped to the site for storage on or about July 25, 1970. No approved procedures for handling and storage were available.

Containment (Attachment C, PI 3800/2)

The containment vessel is supplied complete by CB&I who is responsible for supplying material, shop fabrication, site erection, welding, inspection and testing.

The inspector was unable to determine if CB&I procedures and other documents covering their activities do exist, because CB&I management personnel were not on the construction site in sufficient time to arrange an audit during this inspection.

The inspection reviewed the Con Ed, Wedco, and CB&I documents (specifications, procedures, drawings, records, etc.) that were available. The following procedural deficiencies were found:

1. Weld Material Control procedure not available (4805.04-g).
2. Detail drawings do not specify the applicable welding procedure for a specific weld (5405.04-f4).

Other Class I Structures (Refueling Canal) (Attachment E, PI 3800/2)

The refueling canal was selected for inspection under Attachment E, PI 3800/2. The following significant items were found:

1. No approved welding procedure for welding P1 to P8 material was available for inspection.
2. No weld material control procedures were available for inspection.
3. Inconsistencies exist between the specification, welding procedure and actual practice for electrode to be used when welding P8 to P8 material.
4. No NDT procedures were available for inspection.

Piping (Attachments F and G, PI 3800/2)

Reactor Coolant Piping and Main Steam Piping were inspected using applicable portions of Attachments F and G, PI 3800/2. The following significant items were found:

1. Grade 308 filler metal is used in joining grade 316 base metals, (Attachment F, 4805.04-a.1.1)
2. Weld procedure qualification certifications do not meet Section IX of the ASME Boiler and Pressure Vessel Code. (Attachment F and G 4805.04-a.1.2)
3. NDT techniques are not required to be qualified. (Attachment F, 4805.04 a.3)
4. Acceptance standards have been omitted from Branch's NDT techniques for dye check and magnetic particle.
5. Branch's dye penetrant technique permits the use of trichloroethylene and perchlorethylene for cleaning stainless steel. (Attachment F, 4805.04 e.4)
6. Wedco does not have written procedures for issue control of welding consumables in order to maintain the identity and traceability of such consumables in the work. (Attachment F, 4805.04 g.3)
7. There is no procedure or instructions relative to the disposal of unused materials. (Attachment F 4805.04 g.5)

8. No provisions were found relative to the removal and repair of arc-strikes. (Misc.)

#### Management Interview

An exit management interview was held on July 16, 1970. The following personnel were in attendance:

##### Consolidated Edison Company

Mr. J. A. Corcoran, Site Superintendent  
Mr. E. J. Dadson, QA Engineer  
Mr. F. M. Matra, IP3 project Superintendent

##### WEDCO Corporation

Mr. E. J. Staffel, Technical Assistant to Executive Vice President  
Mr. M. L. Snow, Manager, PA and Reliability  
Mr. J. P. Knight, Manager, Quality Planning  
Mr. T. A. Lawson, Manager, Quality Control

The following significant items were discussed:

1. Containment (Attachment C, PI 3800/2)

The inspector stated no procedures for welding material control for the containment subcontractor (Chicago Bridge and Iron) was found. Mr. Dadson stated that because CB&I was not on site at the time of the inspection, the findings should be deferred until review of CB&I methods and procedures could be determined. The inspector stated these items would be reinspected when CB&I was available on site.

2. Refueling Canal (Attachment E, PI 3800/2)

The inspector stated the specifications for the refueling canal specified welding P8 to P8 material would be with 308SS or 310 SS filler metal. The welding procedure specified using 308SS filler metal and actual welding observed by the inspector was being done with 309SS filler metal. In addition the welders qualification records indicated use of 309SS electrode. Mr. Dadson stated corrective action would be taken. The inspector further stated mill certs for filler metal showed SS310 for shipments 1 through 5 and SS309 for shipment 6 with no change in the specification. Mr. Snow stated a complete audit of records would be performed and corrective action taken as required. The inspector stated the records system appeared marginal as evidenced by the lack of

documents in the files labeled "Refueling Canal Specification 9321-05-225-3, mill certs. and other QC documentation." Numerous documents were asked for by the inspector which were later found in other parts of the files. Mr. Snow acknowledged the inspectors' comments and stated manpower problems and other extenuating circumstances had caused the temporary problem. Mr. Corcoran stated there was no excuse for the situation and prompt corrective action would be taken. On July 24, 1970, Mr. Dadson, Con Ed, called Mr. Heishman CO:I and stated the responsibility for maintenance of site QC records was being transferred from the Wedco QC Manager to the Wedco Quality Planning Manager effective August 17, 1970 and an audit of IP3 QC records was in progress.

3. Piping (Attachment F and G, PI 3800/2)

The inspector stated no evidence of engineering analysis was found to support the changing from grade 316 filler metal to grade 308 filler metal in welding grade 316 base metals. Mr. Dadson stated Westinghouse had made the analysis and copies of the reports would be available during the next inspection. The inspector stated inconsistencies existed between the welding contractor's procedures and certain code requirements. These include omission of gas flow rates for purge shielding and post weld heat treat range, stipulated as 1,000°F - 1,200°F in the procedure while the code requires a range of 1,100°F - 1,200°F.

Mr. Snow stated these inconsistencies would be included in the complete audit and modification of the procedures for welding on IP3. The inspector stated the inconsistencies between procedures and code requirements indicated the subcontractor documents were not being reviewed as thoroughly as the Wedco QA plan indicated.

The NDT subcontractor's (Branch Laboratories) procedures for LP and MP techniques did not specify the acceptance standards and qualification certificates were lacking. Mr. Snow stated this item would be corrected.

Persons Contacted

Consolidated Edison Company

Mr. J. A. Corcoran, Site Superintendent

Mr. E. J. Dadson, QA Engineer  
Mr. F. M. Matra, IP3 Project Superintendent  
Mr. C. H. McDonnell, US Testing Company

WEDCO Corporation

Mr. M. Snow, Manager, QA and Reliability  
Mr. T. Lawson, Manager, Site Quality Control  
Mr. J. Knight, Quality Planning  
Mr. S. Roberts, Reliability Engineer  
Mr. J. J. Ford, Structural Engineer  
Mr. J. Jaillet, QC-NDT Field Supervisor  
Mr. R. Viola, QC-NDT Supervisor  
Mr. J. Schmidt, QC Records  
Mr. H. Werle, Chief Mechanic  
Mr. R. Gerdoney, Welding Foreman, McCormack - Champion Company  
Mr. S. Farrell, General Foreman, Boilermakers, McCormack - Champion Co.

Status of Construction

Mr. Matra informed the inspector that the status of construction on July 1, 1970 was  $\approx$  36 percent complete.

NDT Subcontract

Branch Radiography Laboratory, (Branch) Incorporated has been awarded a contract by Wedco for nondestructive testing as directed by the Wedco QC Manager for Indian Point No. 3. This contract commits Branch to the Wedco Specification RT70, Radiographic Testing Procedure and Wedco has approved the Branch Procedures for UT, MP and LP. This contract excludes the containment liner NDT and other subcontracts which have a requirement to provide NDT.