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MAR 17 1969

Roger S. Boyd, Assistant Director for Reactor Projects, DRL
THRU: Saul Levine, Assistant Director for Reactor Technology, DRL

CONSOLIDATED EDISON COMPANY, INDIAN POINT NUCLEAR GENERATING UNIT #2
INSTRUMENTATION, CONTROL AND POWER, DOCKET NO. 50-247

As requested by Mr. Karl Kniel, the I&PT Branch made a cursory examination of the Indian Point #2 FSAR in order to identify major areas of concern. RT-218A dated March 11, 1969, tentatively identified the emergency power as being an area which we would want to probe.

At the initial meeting held with the applicant on March 12, 1969, the following were identified as possible backfit items:

1. The onsite power system is designed identical to that originally proposed for Indian Point #3 and commented on in the ACRS letter. The independence of the onsite power is compromised by the use of automatic breakers between essential buses.

2. The three diesel generators are housed side-by-side in a structure which does not appear to meet present day tornado requirements.

The applicant was notified that these items are of concern to us.

We would like to identify these items to DRL management as possible backfit items. Further, by carbon copy of this letter, we are requesting Mr. A. Dromerick to review the housing for the diesel generators.

Original signed by
Voss A. Moore

V. A. Moore, Chief
Instrumentation & Power
Technology Branch
Division of Reactor Licensing

RT-240A
DRL:I&PTB:ODP

cc: P. A. Morris
F. Schroeder
S. Levine
R. DeYoung
D. Muller
K. Kniel
A. Dromerick

bcc: V. Moore
O. Parr

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OFFICE ▶		DRL:I&PTB	DRL:I&PTB	D/D RT	A/D RL	
SURNAME ▶		Parr:ese	Moore	DeYoung	Levine	
DATE ▶		3/14/69	3/14/69	3/14/69	3/17/69	

Form AEC-318 (Rev. 9-53)

U.S. GOVERNMENT PRINTING OFFICE : 1966—O-214-629

RE: DRAVO INSPECTION

Your attention is invited to pages 4, 5 and 6 of CO Report No. 247/68-6 for Consolidated Edison Company's Indian Point 2 facility. These pages contain information describing the deficiencies that were found during site receipt inspections of Dravo supplied items.

H. D. Thornburg, CO:III X

Original signed by.
J. P. O'Reilly

OFFICE ▶	CO	CO			
SURNAME ▶	FJNolan:kbp	JPO'Reilly	J. P. O'Reilly, CO:HQ	1/16/69	
DATE ▶	1/16/69	1/16/69			

Form AEC-318 (Rev. 9-53)

U.S. GOVERNMENT PRINTING OFFICE : 1966—O-214-629

J. P. O'Reilly, CO

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645-

DEC 24 1968

J. P. O'Reilly, Chief, Reactor Inspection & Enforcement Br.,
Division of Compliance, Headquarters

CONSOLIDATED EDISON COMPANY - INDIAN POINT NO. 2
DOCKET NO. 50-247

The attached report of a visit to the subject facility on November 20 and 21, 1968, is forwarded for information.

An item of safety concern is that additional deficiencies were discovered by the licensee in carbon steel piping furnished by Dravo Company. The licensee is continuing to investigate this problem. Compliance has scheduled a vendor inspection of the Dravo Company on January 7 - 9, 1969. Region I plans to make a detailed review of the Con Ed investigation during the next inspection visit.

During this inspection visit our inspector noted considerable improvement in the storage and protection of equipment.

N. C. Moseley

N. C. Moseley
Senior Reactor Inspector

Attachment:
CO Report No. 247/68-6
by G. L. Madsen, dtd 12/17/68

cc: E. G. Case, DRS
R. S. Boyd, DRL (2)
S. Levine, DRL (6)
D. J. Skovholt, DRL (3)
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U. S. ATOMIC ENERGY COMMISSION
REGION I
DIVISION OF COMPLIANCE

Report of Inspection

CO Report No. 247/68-6

Licensee: CONSOLIDATED EDISON COMPANY
Indian Point No. 2
License No. CPRR-21
Category A

Dates of Inspection: November 20 and 21, 1968

Dates of Previous Inspections: September 27 and 30, 1968 and October 8, 1968

Inspected by: G. L. Madsen 12/17/68
G. L. Madsen, Reactor Inspector — Date

Reviewed by: N. C. Moseley 12/18/68
N. C. Moseley, Senior Reactor Inspector — Date

Proprietary Information: None

SUMMARY

Cadweld splicing and compressive strengths of concrete has been satisfactory.

The reactor vessel has been installed and one steam generator section is inside the containment building. The four primary pump casings are in place.

Repair of the fuel pit liner is in progress.

Site receipt inspection revealed apparent quality deficiencies of pipe procured from Dravo. This item is receiving active followup by the licensee and will require additional compliance followup.

A considerable improvement in component storage was noted.

DETAILS

I. Scope of Visit

The Consolidated Edison Company (Con Ed), Indian Point 2 (IP-2) site was inspected by G. L. Madsen on November 20 and 21, 1968. Mr. D. Whitesell of Region I, Division of Compliance, accompanied the inspector.

The following persons were contacted during the visit:

Con Ed

Mr. A. Corcoran, Site Construction Engineer

Mr. P. Leo, Site Construction Engineer Assistant

Mr. J. Verberst, Site Construction Engineer Assistant

Westinghouse

Mr. Glynn Waldrop, Quality Assurance Engineer

Mr. L. Cunningham, Field Service Engineer

United Engineers and Constructors (UE&C)

Mr. J. Fant, Quality Control Supervisor

Mr. R. Phelps, Mechanical Quality Control

U. S. Testing (UST)

Mr. E. Dadsen, Quality Control Inspector

II. Results of Visit

A. General Construction Status

1. Containment Building

Concrete has been placed to the 153 foot elevation. The reactor vessel has been installed. The tube section of one steam generator has been moved inside

the containment building. The four primary pump casings are in place and were being aligned.

2. Turbine Building

The installation of the turbine condenser tubes is in progress. The turbine rotors and generator installation are nearly complete.

3. Fuel Handling and Storage Facility

The installation of the pit liner has been resumed. The floor sections of the liner were removed because of a previously noted weld leakage problem.* The floor section is being reinstalled.

4. Primary Auxiliary Building

The installation of the various components is progressing smoothly.

B. Containment Liner

As previously reported,** the containment liner is considered dimensionally acceptable to elevation 190 feet. Measurement of the dome is presently in progress.

C. Cadweld Splicing

A review of test results, since the last inspection, revealed that the minimum ultimate strength encountered was 84,500 psi and the average weekly ultimate strengths ranged from 92,200 to 104,000 psi. The quality of the splicing operation continues to be acceptable.

D. Concrete

A review of test cylinder results for concrete placed since the last inspection revealed that compressive strengths, for 28-day curing, exceeded the design specification of 3000 psi.

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*CO Report No. 247/68-3, Paragraph II.G.
**CO Report No. 247/68-5, Paragraph II.B.

The average compressive strength was about 3700 psi and the lowest recorded value was 3409 psi.

Discussions with Con Ed and UE&C revealed no new deficiencies with respect to the batch plant operation. Based on this review, the inspector believes that the batch plant operation is under control.

E. Mechanical Systems Fabrication

As previously reported*, site receipt inspections revealed apparent quality deficiencies in the conventional and safety injection pipe procured from the Dravo fabrication facility. As a result of the apparent deficiencies, the following actions have been taken by the licensee:

1. Conventional System Pipe

a. A visual inspection of all weld joints (about 900) was performed by UE&C and the presence of approximately 160 pieces of weld wire was found.

b. Westinghouse, UE&C, and UST personnel visited the Dravo plant to review their quality control program. A review of the UST report to Con Ed noted the following discrepancies:

1) Some of the certificates of compliance did not list the weld procedure employed. Therefore, the supporting documents, in terms of qualification, could not be verified.

2) The mill test reports cannot be traced to a specific loop in the secondary system. It was stated that the material was checked upon receipt by Dravo and segregated as to "accept" or "reject" at that time. It was therefore recorded by Dravo that all material used on the IP-2 was physically and chemically in conformance with specifications.

*CO Report No. 247/68-5, Paragraph II.F.
Inquiry Memorandum No. 247/68-B.

3) Six sets of radiographs were selected at random from a group of about 500. One set of film identified as 1431 weld A contained four film. Each of the four film appeared to have been taken by different techniques since each had a different film density; however, the log book indicated a single procedure.

One film of this set (area 1-2) was taken with a procedure which was not capable of producing a visible hole in the penetrameter.

4) Dravo did not perform a quality control visual inspection on the pipe welds. Dravo indicated that the purchase specification did not require this test. The purchaser indicated that the specification did indeed require the visual inspection and the inspector verified that the specification available at the IP-2 site so indicated.

Based on the above listed unsatisfactory conditions, UST recommended that a detailed investigation of the pipe should be made to ensure that the pipe supplied by Dravo is capable of meeting the quality requirements for the IP-2 project.

c. Westinghouse and UE&C initiated an additional site inspection, which included a spot radiographic inspection of the weld joints to the requirements of ASME Section VIII, paragraph UW-52. This inspection revealed 180 conditions that did not meet this code. These deficiencies were then evaluated with respect to the existing condition and the plant system to which it was associated. As a result of this evaluation all but about 80 deficiencies were deemed to be acceptable. The inspector reviewed the inspection findings for the main steam and feedwater systems and found that 43 conditions did not meet the UW-52 criteria and the final evaluation determined 40 of these conditions to be unacceptable and requiring repair.

d. Repair of the weld wire and radiographically identified deficiencies is in progress.

2. Safety Injection Pipe

One section of stainless steel safety injection pipe was observed to have surface fissures. Grinding repairs were initiated; however, subsequent dye penetrant checking indicated that the fissures were continuing to excessive depths. Dye penetrant checking of eight additional sections of the safety injection piping revealed no additional unsatisfactory conditions. A visual inspection by UE&C, of other stainless steel piping, procured from Dravo, revealed no additional deficiencies. The defective section of safety injection pipe is scheduled for replacement.

The inspector asked if additional sections of pipe were fabricated from the same heat but to no avail. Con Ed indicated that they are pursuing this matter and presently have not received sufficient information on this subject to permit a final conclusion.

F. Storage

A review of the component storage areas during the last site inspection,* revealed conditions which the inspector considered only marginally acceptable with respect to outside storage. As a result of these observations, Westinghouse initiated a corrective action program. This program included the following:

1. Westinghouse took an inventory of all components stored outside and made a determination of the degree of care required for each component.

2. Westinghouse prepared a list of corrective actions required to fulfill the previously determined storage criteria. This listing was given to UE&C for implementation.

*CO Report No. 247/68-5, Paragraph II.G.

3. An engineer is presently making daily checks of the storage facilities to monitor the status of the corrective action program. Once the program gets under control, the plan calls for periodic surveillance plus monthly formal reviews of all storage.

4. The component receipt schedule for the next several months was reviewed and storage requirements have been specified. This includes component receipts for IP-3.

A review of records indicated to the inspector that the majority of the previously determined corrective actions have been completed. A visit to the outside storage areas by the inspectors, revealed no apparent discrepancies. The inspector feels that the present storage plan is acceptable. The status of the component storage will be reviewed during future visits to the site.

G. Reactor Vessel

The reactor vessel has been installed. Visual observation by the inspectors of external surfaces revealed no evidence of physical damage during shipment or installation. The reactor vessel insulation was being installed. Preliminary work was in progress toward installation of the vessel internals.

H. Steam Generators

The end closures and associated welds were removed from four steam generator sections in preparation for movement to the containment building. The open ends were protected from the weather by using tarps, during the pre-installation work. On completion of this preparation, the end closures were re-installed using spot welds and sealing with tape. The inspector feels that adequate steps are being taken to prevent introduction of contaminants to the vessels. The tube bundle section of one steam generator has been moved to the containment building and a similar section has been loaded on a truck in preparation for movement to the containment building.

I. Primary Pumps

The four primary pump casings have been installed. The inspector asked if there was any concern relative to these components having been subjected to adverse atmospheric conditions during storage. Following a brief discussion, Con Ed volunteered to make a chemical analysis of the kraft paper which had been wrapped around the casings during storage to determine the existing chloride content. This item will be reviewed with the licensee during the next visit. The primary pump internals and bearing sections have been received and are presently stored out of doors. The internals are surrounded by a "can" for protective purposes. The entire unit has been wrapped in a tarp and heating lamps have been installed for additional environmental control. The inspector believes that adequate protective storage is thereby attained.

III. Management Interview

Separate management interviews were held with Messrs. Prestele and Corcoran at the conclusion of the visit. The following items were included in the discussions:

A. Containment Building

The construction status of the containment building was discussed. Mr. Corcoran indicated that the liner measurement program was nearing completion and that present plans call for curtailment of concrete placement until the spring of 1969.

B. Mechanical Systems Fabrication

The quality problems associated with the piping procured from Dravo were discussed. Mr. Corcoran indicated that a meeting was planned between Con Ed and Westinghouse on this subject. The inspector indicated this subject to be an area of concern and that Compliance would consider visiting the Dravo plant and would review Con Ed's resolution of the potentially defective pipe problem during future visits. Mr. Corcoran indicated a desire to have satisfactory resolution of the question prior to the next Compliance inspection of the IP-2 site.

C. Storage

The subject of outdoor storage of components was discussed. The inspector indicated satisfactory findings with respect to the recently initiated storage program of Westinghouse. Mr. Corcoran indicated a desire to continue to push for improvements on this subject.

D. Reactor Vessel

The subject of reactor vessel installation was reviewed. Mr. Corcoran presented a series of pictures taken throughout the installation. The inspector indicated that he had detected no problems in the review of this subject.

E. Primary Pumps

The possible existence of unfavorable surface contaminants on the primary pump casings was reviewed. Mr. Corcoran indicated that he would await the results of chemical analysis of the kraft paper cover and would then take a position relative to a need for any corrective actions.