

U.S. ATOMIC ENERGY COMMISSION

DIRECTORATE OF REGULATORY OPERATIONS

REGION I

RO Inspection Report No: 50-286/74-05

Docket No: 50-286

Licensee: Consolidated Edison Company (Indian Point 3)

License No: CPPR-62

4 Irving Place

Priority: \_\_\_\_\_

New York, New York 10003

Category: B

Location: Buchanan, New York

Type of Licensee: PWR, 1050 MWe (Westinghouse)

Type of Inspection: Routine, Unannounced

Dates of Inspection: March 6-8, 1974

Dates of Previous Inspection: January 7-9, 1974

Reporting Inspector: *J. Allentuck*  
J. Allentuck, Reactor Inspector

3/26/74  
Date

Accompanying Inspectors: None

\_\_\_\_\_  
Date

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\_\_\_\_\_  
Date

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\_\_\_\_\_  
Date

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\_\_\_\_\_  
Date

Other Accompanying Personnel: \_\_\_\_\_

\_\_\_\_\_  
Date

Reviewed By: *R. F. Heishman*  
R. F. Heishman, Senior Reactor Inspector

3-26-74  
Date

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## SUMMARY OF FINDINGS

### Enforcement Action

None

### Licensee Action on Previously Identified Enforcement Items

Not applicable

### Design Changes

Not applicable

### Unusual Occurrences

Not applicable

### Other Significant Findings

#### A. Current Findings

1. Examination of the content and timeliness of the licensee's QA audit program indicates no apparent deficiencies. (Details, Paragraph 3)
2. Examination of QA documentation for installation of certain pipe supports indicates no apparent deficiencies. (Details, Paragraph 4)
3. A revision to the Guidelines for Readiness for Testing Activities has not been agreed upon between the licensee and the Constructor. (Details, Paragraph 5)
4. The Constructor has not been able to complete a meaningful audit of activities required by WCA-0-5B because insufficient field run tubing has been installed. (Details, Paragraph 6)
5. Quality control documents available at the site fail to indicate that the following QA activities or specification requirements relating to the Containment Cooling Recirculation Fan units have been performed:
  - a. Certified fan performance test results furnished, reviewed and approved. (Details, Paragraph 7)
  - b. QCR failed to indicate inspection of plenum welding requirements. (Details, Paragraph 8)

- c. QCR failed to indicate inspection of coil assembly welding requirements or the performance of an Immersion Leak Test. (Details, Paragraph 9)
- d. Approval of documentation of authorization to deviate from specifications was apparently illegible. (Details, Paragraph 10)

B. Status of Previously Reported Unresolved Items

- 1. The following previously reported outstanding items remain unresolved.
  - a. Unresolved items continue outstanding in several NSSS QCR's. (Details, Paragraph 11)
  - b. Defective welds in the Diesel engine jacket water system piping remains uncorrected. (Details; Paragraph 12)
  - c. The final report on Reactor Coolant Pump flywheels has not been issued. (Details, Paragraph 13)
  - d. Test data for station service transformers are available but apparently lack required A/E approvals. (Details, Paragraph 14)
  - e. The filing system which would permit the ready association of pipe supports with quality documentation has not been installed. (Details, Paragraph 15)
  - f. Continued unavailability for examination by the inspector of QA/QC documentation relating to the reactor coolant pumps and pumpdrive motors. (Details, Paragraph 25)
- 2. The following previously reported outstanding items have been resolved:
  - a. The establishment and implementation of criteria for the use of double acting pipe supports. (Details, Paragraph 16)
  - b. The unavailability of original documentation of certain tests on safeguards cable furnished by Lewis Engineering. (Details, Paragraph 17)
  - c. Lack of specific reference to aging tests in certain cable test reports. (Details, Paragraph 18)

- d. Apparent foreign manufacture of certain portions of the reactor coolant pumps. (Details, Paragraph 19)
- e. Apparent unavailability of material certification for wire rope assemblies of pipe restraints. (Details, Paragraph 20)
- f. Apparent failure to include seismic requirements for the Diesel Engine Generators. (Details, Paragraph 21)
- g. Apparent unavailability of material certification for upper and lower heads of the boric acid batch tank. (Details, Paragraph 22)
- h. Apparent unavailability of engineering approval for certain cable reels. (Details, Paragraph 23)
- i. Apparent unavailability of a comprehensive procedure for preventive maintenance inspections. (Details, Paragraph 24)

#### Exit Interview

An exit interview was held with the following personnel in attendance:

#### Con Edison

- A. Kohler, Jr., Resident Construction Manager
- D. Hartsfield, Construction Superintendent
- J. White, QA Project Engineer (Corporate Staff)
- D. Milano, Electrical Constuctions

#### Wedco

- M. L. Snow, Reliability Manager
- B. Garrow, QC Electrical, Instrumentation and Control

Items discussed are summarized below:

- A. The inspector stated that on the basis of examination of records and discussions with site personnel the following previously outstanding items were resolved.
  1. The establishment and implementation of criteria for the use of double acting pipe supports. (Details, Paragraph 16)
  2. The unavailability of original documentation of certain tests on safeguards cable furnished by Lewis Engineering. (Details, Paragraph 17)

3. Lack of specific reference to aging tests in certain cable test reports. (Details, Paragraph 18)
  4. Apparent foreign manufacture of certain portions of the reactor coolant pumps. (Details, Paragraph 19)
  5. Apparent unavailability of material certification for wire rope assemblies of pipe restraints. (Details, Paragraph 20)
  6. Apparent failure to include seismic requirements for the Diesel Engine Generators. (Details, Paragraph 21)
  7. Apparent unavailability of material certification for upper and lower heads of the boric acid batch tank. (Details, Paragraph 22)
  8. Apparent unavailability of engineering approval for certain cable reels. (Details, Paragraph 23)
  9. Apparent unavailability of comprehensive procedure for preventive maintenance inspections. (Details, Paragraph 24)
- B. The inspector stated that on the basis of examination of records and discussions with site personnel the following previously outstanding items remained unresolved.
1. Unresolved items continue outstanding in several NSSS QCR's. (Details, Paragraph 11)
  2. Defective welds in the Diesel engine jacket water system piping remains uncorrected. (Details, Paragraph 12)
  3. The final report on Reactor Coolant Pump flywheels has not been issued. (Details, Paragraph 13)
  4. Test data for station service transformers are available but apparently lack required A/E approvals. (Details, Paragraph 14)
  5. The filing system which would permit the ready association of pipe supports with quality documentation has not been installed. (Details, Paragraph 15)
  6. Continued unavailability for examination by the inspector of QA/QC documentation to the reactor coolant pumps and pumpdrive motors. (Details, Paragraph 25)

In each case the licensee acknowledged the inspector's remarks and indicated that action would be taken to resolve the above matters.

- C. The inspector stated that he had examined the following items and had noted no apparent deficiencies.
1. The content and timeliness of licensee QA audits. (Details, Paragraph 3)
  2. The QA documentation for the installation of certain pipe supports. (Details, Paragraph 4)
- D. The inspector stated that, on the basis of examination of records and discussion with site personnel, the following items could not be resolved and were now considered outstanding:
1. A revision to the Guidelines for Readiness for Testing Activities has not been agreed upon between the licensee and the Constructor. (Details, Paragraph 5)
  2. The Constructor has not been able to complete a meaningful audit of activities required by WCA-0-5B because insufficient field run tubing has been installed. (Details, Paragraph 6)
  3. Quality control documents available at the site fail to indicate that the following QA activities or specification requirements relating to the Containment Cooling Recirculation Fan units have been performed:
    - a. Certified fan performance test results furnished, reviewed and approved. (Details, Paragraph 7)
    - b. QCR failed to indicate inspection of plenum welding requirements. (Details, Paragraph 8)
    - c. QCR failed to indicate inspection of coil assembly welding requirements or the performance of an Immersion Leak Test. (Details, Paragraph 9)
    - d. Approval of documentation of authorization to deviate from specifications was apparently illegible. (Details, Paragraph 10)

## DETAILS

### 1. Persons Contacted

#### Con Edison

- A. Kohler, Jr., Resident Construction Manager
- G. I. Coulbourn, Jr., Manager, IP-3 Construction
- J. Deane, QA Superintendent, Site
- D. Hartsfield, Construction Superintendent
- D. Milano, Construction Supervisor, Electrical
- J. White, QA Engineer

#### Wedco

- M. L. Snow, Reliability Manager
- B. Garrow, QC Electrical, Instruction and Control

### 2. Status of Construction

The licensee reported that construction was 87% complete and that the estimated fuel loading date was November 1, 1974.

### 3. Status of Licensee's QA Audit Program

In the period January 1, 1974 to March 1, 1974, the following audits were performed.

- A. Engineering Administration
- B. Equipment Receipt and Storage
- C. Welding Records
- D. Test Equipment Calibration
- E. Cable Installation
- F. NCR's and OIR's
- G. Wedco Audit Program
- J. Concrete and Coilwelding
- M. NSSS Equipment Installation
- N. Hangers

- O. Electrical Penetrations
- P. Electrical Equipment Installation
- Q. In-plant Instrument Calibration
- S. Bolt Torquing
- T. Instrument Tubing

4. Pipe Support, Installation

The inspector examined the constructor's QA documentation for the installation of hangers in Line 202 of the CVCS system. These documents consisted of inspection check-lists completed by QC inspectors.

5. Readiness For Testing Activities

The licensee's audit report made against Guidelines for Readiness for Testing indicated certain deficiencies and lack of comprehension on the part of constructor personnel as evidenced by the licensee's letter to Wedco dated January 3, 1974. This audit, Q-7-R, was conducted in connection with these activities for the Instrument Air Closed Cooling Water System. It has resulted in a proposed revision to the guidelines and a meeting between the licensee and Wedco. The inspector examined a "Report of Meeting to Resolve Differences in Conduct of Readiness for Testing Activities."

The inspector stated that this item would be considered outstanding until such time as the revised guidelines had been implemented and licensee's audit reports would indicate satisfactory conformance.

6. Field Run Tubing

Wedco's audit #3-112B indicated that deficiencies discovered in audit #3-112A against Procedure WCA-0-5B had not been corrected because there had been insufficient progress in field run tubing installation to implement QC procedures. The inspector stated that this item would continue unresolved until such time that QC procedures would be satisfactorily implemented.

7. Fan Performance Tests

Certified test reports of fan performance for the Reactor Containment Fan Coolers (RCFC) are required by NSSS Spec 677113. Performance tests were indicated as "Not Applicable" on NSSS QCR 06396. This matter is outstanding until such time as the NSSS documents receipt, review and approval of certified test reports of fan performance.



8. Reactor Containment Fan Cooler Plenum Welding

The specifications for the RCFC enclosures impose by reference to certain standards and NSSS process specifications, welding requirements. While the QCR for the enclosures indicate that the shop inspector reviewed compliance with these requirements for the enclosures he indicated that they were not reviewed for the plenum.

9. RCFC Coil Assembly

NSSS Process Specification PS 290393-12 requires an Immersion Leak Test for the RCFC Coil Assembly. In addition the specification for this component states that all welds and brazes are to be inspected and tested in accordance with relevant referenced process specifications. The following process specifications are referenced:

PSSD-291319  
-290326  
-291347-4  
-292323-1

The QCR for this component fails to indicate the examination by the shop inspector of either test reports of an Immersion Leak Test or documentation of weld examination.

10. Approval of Deviation from Specification Illegible

Associated with QCR 10961 for the RCFC enclosures were requests for certain deviations from the specification requirements by the RCFC fabricator. The approval portion of these request forms were entirely illegible. The matter will remain outstanding until the approval documentation in the constructor's records is legible.

11. Unresolved Items in NSSS QCR's

In RO Reports No. 50-286/73-12 and 50-286/73-16 the inspector reported that open items existed in certain NSSS QCR's. Wedco had requested by memorandum that the NSSS review all QCR's for open items. In his memo to Wedco, dated February 25, 1974 the NSSS made a commitment to resolve this matter.

12. Defective Welds on Diesel Engine Jacket Water Systems

Defective welds reported in site document OIR 3-P-322 have not been repaired.

13. Reactor Coolant Pump Flywheel UT

The constructor performed UT's on RC Pump flywheels in place during September, 1973. A draft test report has been available on the site since November, 1973. To date a formal approved document is unavailable for inspection at the site.

14. Station Service Transformer Test Report

A test report of electrical tests on the 6900/4800 station service transformer dated 12/3/71 was examined. It was certified to be in accordance with Test Code C57.2 of ASA. There was no indication of review and approval of this document by the A/E.

15. Pipe Support Documentation Filing System

As noted in RO Inspection Report 50-285/73-12 a filing of an inspection performance 9/12-15/73 system which permits the ready association of QC documentation with the pipe support to which it applies was not available at the site. It continues unavailable.

16. Criteria For Double Action Pipe Supports

The inspector examined a licensee memo which stated in part:  
"...It is suggested that the following revised statement be used for design in this unit: If at a rigid restraint the upward seismic loading is equal to or greater than 75% of the algebraic sum of the dead weight plus thermal forces acting down, then the restraint must be double acting.

It is suggested that this statement be added to UE&C's "Criteria for the Design of Safety Class Systems".

...Although not explicitly stated before, this is the type of information that would be examined in an engineering review of hangers."

In addition the inspector examined a memo EUP-762 dated February 1, 1974, from Wedco Engineering to Wedco Site which stated in part:  
"in complying with the criteria specified for piping support design of INT, the upward vertical seismic plus thermal effect loads were considered. If these loads exceeded the deadweight support section, a U-bolt was added capable of withstanding the net upward load. We believe this to be entirely sound technically..."

17. Original Cable Test Documentation: Lewis Engineering

The inspector examined an internal licensee memo dated February 8, 1974 originating in the Electrical Engineering Department which stated in part: "After review of the available documentation on the subject cable, I find that cable is suitable and acceptable for its intended use even though copies of the manufacturer's original certifications are not available."

The UE and C letter to Wedco dated October 9, 1973 supports this position.

18. Reference to Aging Tests in Cable Test Reports

The inspector examined the provisions of IPCEA-NEMA S61-402 2nd edition and a material certification dated 11/19/73 prepared by Revere which stated in part: "all the test specimens of the primary insulation material meet the tensile strength, elongation, heat shock and cold bend test requirements of IPCEA S-61-402, Paragraph 3.8.1..." This statement indicates by reference to tensile strength and elongation that the aging test was performed since the only requirements for tensile strength and elongation measurements are as part of the aging test.

19. Reactor Coolant Pump: Foreign Manufacture

The NSSS interpretation of the response given in the FSAR question No. 4.8 is included in EUP-718 dated 1/10/74 which states in part: "the answer to the question No. 4.8 of INT FSAR Supplement 7 is technically correct if the ASHE, Section III, definition of the word "Components" is accepted. The 1970 edition, Section NA 1210, as well as previous editions, define the word "Components". The definition reads in part, "The components of a nuclear power plant include vessels, piping systems, pumps, valves and core support structures. The pumps are considered components... (and) may have been fabricated using foreign made parts."

20. Material Certification for Wire-Rope Assemblies

The acceptability of material certifications on plate material was evidenced by a QCR dated 7/11/73. The inspector determined that the purchase order did not require a material certification.

21. Diesel Engine Generators Seismic Requirements

The inspector examined a letter from UE&C to Wedco dated January 9, 1974 bearing the designation APD #18295 which stated in part "...the Diesel Generator sets are considered to be Class I Seismic. The Diesel Generator sets have been accepted at meeting seismic criteria on the basis of an engineering evaluation of vendor's supplied data".

22. Boric Acid Batch Tank Upper and Lower Heads

The inspector examined certified records for the chemical and mechanical properties of the upper and lower head material. These items came from heats F68658 and F58459. There were no deficiencies.

23. Approved of Test Reports for Safeguards Cable

The inspector examined a UE&C letter of transmittal approving test reports for the following cable reels:

<u>Cable Reel</u>	<u>Date of Approval</u>
6036	12/13/73
6069	3/4/72
5398	9/14/70

24. Procedure for Preventive Maintenance Inspections

The inspector examined Wedco Quality Guide - Mechanical Equipment Preventive Maintenance Inspection Program, QCG-7 dated 2/7/74. This procedure is designed to assure that all inspectors assigned to preventive maintenance have available in a single instruction all requirements for preventive maintenance inspections.

25. RC Pump QC Documentation

As reported in RO Inspection Report 50-286/73-16 the NSSS had committed to making available at the site QC documentation for the RC Pump which was at the time of that inspection in permanent storage. The NSSS made available instead, QCR's dated January 10, 1974, which attested to the existence of the required documents. The commitment has not been fulfilled.