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

Report of Inspection

CO Report No. 286/70-6

Licensee: Consolidated Edison Company
(Indiam Point Unit 3)
License No. CPPR-62
Category A

Date of Inspection: November 16-17, 1970

Date of Previous Inspection: August 24-27, 1970

Inspected by: D. E. Whitesell, Reactor Inspector (Construction) — 12/16/70 Date

A. A. Varela, Reactor Inspector (Construction) — 12/17/70 Date

Reviewed by: E. M. Howard, Senior Reactor Inspector — 12-17-70 Date

Proprietary Information: None

SCOPE

A special announced inspection of the 3023 MWt pressurized water reactor under construction at Buchanan, New York, was made on November 16-17, 1970. The inspection was directed toward the appraisal of the performance of the licensee-contractor efforts of various construction items listed in PI 3800/2, Attachment J, relative to the reactor vessel and head and to witness the moving and handling of the reactor vessel from Lent's Cove, the point of receipt, to the site.

SUMMARY

Safety Items - None

Nonconformance Items -

Criterion V, Appendix B, 10 CFR 50, "Instructions, Procedures, and Drawings", states in part:

"Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, or a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. . . ."

Contrary to the above, the inspectors found:

1. Procedures or instructions relevant to heating the reactor vessel lifting beam and means of determining the surface temperature of this beam were not prepared, although the procedure for "Handling and Setting of IP-3 Reactor Vessel", stipulates that the lifting beam must not be used when its surface temperature falls below 70°F based on NDTT considerations.

2. The log, showing gas pressures, condition of covers, and visitors to the area, is not being maintained as required by the Wedco procedure "Reactor Vessel and Reactor Vessel Head Receipt Inspection and Security During Storage."

3. The Wedco "Procedure for Handling the Reactor Vessel and Skid" references, among others, a "Procedure for Installing the Lifting Beam" and a "Procedure for Setting the Reactor Vessel." There was no evidence that either of these procedures were being developed.

4. Wedco's procedure WQA-4.0, part 2.3.3-a, states in part:

   "All records and documentation from the supplier must be on site and acceptable before the item is fully accepted."

   Contrary to this procedure, the reactor vessel has been released for installation prior to receipt of the N-1, "Data Report Form."

Unusual Occurrences - None

Status of Previously Reported Problems -

1. Reactor Vessel Painting - Unresolved (CO Report No. 286/70-5)

2. Loss of Gas Purge Records - The visual receiving inspection for the interior of the reactor vessel, together with the analysis of swipes made of the vessel nozzle area, indicated that there was no evidence of contamination caused by the loss of nitrogen pressure. This item is considered to be closed. (CO Report No. 286/70-5)

3. The analysis of the water found in the plastic covering, together with the results of the inspection of the interior of the vessel, indicates that there was no contamination from this water. This item is considered to be closed. (CO Report No. 286/70-5)

r Significant Items -

Procedure for "Handling and Setting IP-3 Reactor Vessel" stipulates that the lifting beam, linkage, pin, and mainhook on the polar crane are to be NDT examined. It fails to provide for an approved technique and acceptance standards for such examinations.

tor Vessel and Head -

he inspection effort consisted of a detailed review of the QC system required by PI 3800/2, Attachment J, items 4905.04.c.1 through 4905.09.c.3 nd 4905.05.a.1 through 4905.05.b.

he required documentation was found to be incomplete, and there is a lack f evidence that required procedures are being developed for evaluation and pproval, and will be available prior to performance of the operation.

ement Interview -

he site QA representatives for Con Ed accompanied the inspectors during his inspection. A formal exit interview was not held.

DETAILS

ersons Contacted

n Ed

. F. D. McElwee, Resident Construction Manager
. J. A. Corcoran, Site Superintendent
. E. J. Dadson, QA Engineer
. F. M. Matra, IP-3 Project Superintendent
. R. Hayman, QA Engineer, Production

dco

. M. Snow, Manager, Reliability and QA
. W. Dibeler, Manager, Site QC
S. M. Roberts, Reliability Engineer

inistration and Organization

change.

C. Reactor Vessel and Head (Attachment J)

1. QC System (4905.04)

a. Installation (4905.04.c)

(1) Inspection, Handling and Setting (4905.04.c.1)

A procedure has been written for handling and setting the IP-3 reactor vessel. This procedure establishes the methods, equipment and precautions to be used in moving the reactor vessel from Lent's Cove storage site to the setting of the reactor vessel in IP-3 support steel.

This procedure stipulates that the RV lifting beam, the linkage and pin, and the polar crane main hook must be nondestructively tested by QC and the results documented. The document fails to state what NDT examinations are to be made, whose NDT procedure will be used, and if the technique to be used has been approved. Magnetic particle NDT testing is completed on the lifting beam welds, but test results or methods employed are not available on site.

Under precautions, the procedure stipulates that the RV lifting beam must not be used if its surface temperature falls below 70°F. (This is the NDTT of this material). There is no evidence that a procedure is being developed for a method to heat the beam, and documentation to verify that the beam temperature was maintained at 70° or above during the lifting operations.

The procedure stipulates that a service engineer from Whiting and/or Westinghoude shall monitor the hoisting and braking equipment and control circuitry during up-ending, lifting and lowering the reactor vessel. A check list is provided for the mechanical checks, electrical checks, and running checks that are to be made.

The "Procedure for Handling the Reactor Vessel and Skid" lists some 36 items supplemented with eight or nine sketches relative to loading the RV onto the transporter, moving the vessel from Lent's Cove to the containment building, unloading the vessel from the transporter, attaching the lifting beam, upending the vessel, removing the skid, positioning the vessel, and lowering the vessel. This procedure references a "Procedure for Installing the Lifting Beam" and a "Procedure for Setting the Reactor Vessel." There was no evidence that either of these procedures are being developed.

Combustion Engineering Procedure M&P No. 5.5.3.1(A) and Westinghouse Process Specifications 597.760, Revision 2 and 292.722, Revision 5 for cleaning stainless steel which may have been exposed to the elements are stipulated to be used for any required cleaning of the interior of the reactor vessel and head. These procedures appear to be adequate.

Inquiry made by CO inspectors of Wedco's QC Manager, W. Dibeler, disclosed the following information:

A representative of the polar crane manufacturer, Whiting Company's C. Settler, was on the site in early November for two days checking out the mechanical and structural elements of the crane and he will be on site when the reactor vessel is lifted. (No report is available on this inspection however). A Westinghouse service engineer will check out the auxiliary Whiting cranes before the lift and will also be present during the lift.

(2) Technical Support (4905.04.c.2)

The vessel fabricator is not obligated to furnish technical personnel to supervise or direct the installation of the reactor vessel. This is entirely the responsibility of Westinghouse who will have qualified personnel to supervise and assist in the installation of the vessel.

(3) Inspection of the Completed Installation (4905.04.c.3)

The final completed installation inspection cannot be made until after the vessel is set, connected and cold hydrostatic tested, which will be a part of the pre-operational testing. There was no evidence that procedures for this portion of the work have been prepared.

2. Record Review (4905.05)

a. Receipt Inspection (4905.05.a.1)

A Westinghouse Trip Report, No. QCV-TR-1151, dated October 16, 1970, signed by R. E. Ballard and approved by N. T. Dressler, Manager, relative to the inspection of the reactor vessel made on October 14-15, 1970, was audited. This report stipulated that the inspection was made by Messrs. Livingood, QC Inspector, CE; R. E. Ballard, QA Engineer, Westinghouse PWR System Division; S. M. Roberts, Reliability Engineer, Wedco; E. Datson, QC Manager, Con Ed; F. Matra, Project Superintendent, IP-3; and A. W. Zevthen, QA Engineer, Production, Con Ed.

The inspection effort was relative to potential contamination of the vessel interior due to loss of pressure on the purging gas. Also, the potential damage to the head flange, which had been reported to have hit the front of the crane with enough force to move the crane backward, during the unloading operation.

This report states that there was no evidence of contamination inside the vessel caused by the loss of nitrogen pressure. Ferrite readings were also taken on the vessel cladding, nozzles and weld seams. Mr. Zeuthen, using a Severn Engineering Company Ferrite Indicator #2541, mapped the areas within the vessel and nozzles where ferrite readings were taken. Con Ed expressed concern that the ferrite reading was 4 to 5% in one area, but since the code does not stipulate ferrite content for cladding this is not considered a deficiency.

b. Periodic Inspection and Servicing (4905.05.a.2)

The documentation relative to the monitoring of the purging gas on both the vessel and head were audited. These documents show the bottle pressure, pressure and flow of the purging gas relative to the head and vessel. The documents show the inspector's name and the date the inspection was made. The dates shown on these documents indicate that inspections made are not consistent with the frequency stipulated in the procedure. There was no evidence that a log, showing gas pressures and flows, condition of covers, and visitors to the area is being maintained as stipulated by the procedures.

c. Manufacturer's Records (4905.05.b)

The N-1 "Data Report Form" was not available at the site. The QC release forms were not available at the site. The inspector was informed by Mr. W. Dibeler, QC Manager, Wedco, that he had obtained authorization to release the vessel for installation by telephone and there was no formal documentation of this.

This appears to be a nonconformance to Wedco's procedure WQA-4.0, part 2.3.3-a, which states in part:

> "All records and documentation required from the supplier must be on the site and acceptable before the item is fully accepted."

3. Observation of Work (4905.06)

a. Receipt Inspection (4905.05.a.1)

The reactor vessel was on the transporter and was being moved at the time of inspection. The head had been unloaded and moved to the storage area, where the inspectors observed that it had been placed

on dunnage to prevent contact with the ground. The protective covering was in place and two nitrogen bottles were connected. The flow gage indicated a gas purge at the rate of 4 cfh.

There was no evidence of a security guard or log showing that the gas flow and pressure was monitored at the end of each shift, or a log showing the names of the visitors to the area, all in accordance with the written procedures developed by Wedco for the in-storage maintenance of the vessel and head.

No part of the receiving inspection was witnessed by the inspector.

b. Techniques of Handling and Installing (4905.06.a.2)

The inspectors visited the containment building and observed that the 460 ton bridge was being installed between the ramp and the containment building floor. The handling and moving of the vessel, at the time of inspection, appeared to be in accordance with the procedures.

c. Provisions for Protection and Maintenance of Cleanliness After Installation (4905.06.a.3)

Not inspected.

d. Provisions for Quarantine (4905.06.b.1)

This is a one of a kind component that is not released for shipment until all deficiencies and/or nonconformances have been evaluated and suitably corrected.

e. Protection and Maintenance In Place (4905.06.b.2)

Not inspected.

4. Cleanliness (5500)

Not inspected.