

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION I

IE Inspection Report No: 50-286/75-16

Docket No: 50-286

Licensee: Consolidated Edison Company

License No: CPPR-62

4 Irving Place

Priority: -

New York, New York 10003

Category: B

Location: Buchanan, New York (Indian Point 3)

Safeguards Group: -

Type of Licensee: PWR, 1050 MW_e (Westinghouse)

Type of Inspection: Special Announced

Dates of Inspection: June 2, 3, 1975

Dates of Previous Inspection: May 27, 28, 1975

Reporting Inspector: R.C. Haynes for
G. A. Walton, Reactor Inspector

6/12/75
Date

Accompanying Inspectors: None

Date

Date

Date

Date

Other Accompanying Personnel: None

Date

Reviewed By: R.C. Haynes
R. C. Haynes, Senior Reactor Inspector

6/12/75
Date

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Action

Not Applicable

Design Changes

None Identified

Unusual Occurrences

The licensee had reported a discoloration of the stainless steel weld overlay cladding in the primary side of a steam generator head. The purpose of this inspection was to review the actions taken by the licensee to determine and correct the weld metal overlay cladding condition.

The inspector found that the licensee's contractor, Westinghouse, was performing extensive liquid penetrant examinations and grinding of the steam generator cladding. In addition, welding was being used to restore the cladding where necessary to maintain clad thicknesses. The licensee's action being taken to correct the cladding condition were found to be acceptable. (Details, Paragraph 3)

Other Significant Findings

A. Current Findings

None

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

At the conclusion of the inspection the inspector held a meeting at the site with the following personnel to discuss the inspection findings.

Consolidated Edison Company

G. I. Coulbourn, Manager, Construction
H. W. Cairns, Supervising Construction Inspector

The following items were discussed and the inspector's findings were noted by the licensee.

A. Purpose of Inspection

The inspector stated that this inspection was specific to the cladding repair program of the steam generators. The purpose of the inspection was to determine if corrective action regarding removal and repair of cladding defects was being properly performed.

B. Findings

The inspector stated that the corrective actions being taken by the licensee with respect to the steam generator cladding defects met regulatory requirements. (Details, Paragraph 3)

DETAILS

1. Persons Contacted

Consolidated Edison Company

G. I. Coulbourn, Jr., Manager, Construction
P. B. Upton, Chief Construction Inspector
H. W. Cairns, Supervising Construction Inspector

Westinghouse Corporation (WEDCO)

S. R. Buckingham, Quality Assurance Manager
D. E. Anderson, Vice President

Westinghouse Corporation (Tampa Operations)

P. Packer, QA Engineer
L. Malizia, Metallurgical Engineer
K. Short, QA Engineer

2. General

The purpose of this inspection was to review the actions being taken by the licensee to remove liquid penetrant indications detected on the weld metal overlay cladding on the primary heads of the steam generators.

3. Repair Program of the Weld Metal Cladding on the Steam Generators

During the eddy current examination of the steam generator tubes, the licensee's inspection contractor reported a discoloration (detected visually) on the weld metal cladding in the lower head of a steam generator. Subsequent liquid penetrant examinations of the discolored area revealed linear indications in the cladding which were unacceptable to the standards of the ASME B&PV Code, Section III requirements. The licensee's investigation was then expanded to perform a liquid penetrant examination on the cladding in the lower heads (hot and cold sides) of all four steam generators. This examination revealed relevant linear indications in the cladding of all steam generators. The indications were limited to the stainless steel cladding and were more pronounced in the cladding adjacent to the biological shield ring, the cladding adjacent to the partition divider for the hot to cold side and the cladding tie-in area of stainless steel to inconel cladding. All indications detected were confined to the non-pressure retaining material,

i.e., in the weld overlay clad which is applied for corrosion protection.

The licensee's fabricator of the steam generators, Westinghouse Corporation, established a program for removal of all unacceptable liquid penetrant indications. This program included grinding, reinspection by the liquid penetrant method and welding where necessary to restore minimum cladding thickness.

The inspector observed that grinding had exposed the carbon steel base material in certain areas. He also observed that grinding of the linear indications has resulted in cavities up to 24 inches long in the cladding in certain areas.

The inspector reviewed weld process NPD-39, dated April 15, 1975 which will be employed to make weld repairs in those areas where base material has been exposed. This process employs a maximum interpass temperature of 450°F. Also a minimum of 50 percent of the first layer of weld deposit is required to be removed by grinding. Further, the procedure limits the weld bead width to 4 times the electrode core diameter and specifies a 3/32 inch diameter rod for the 1st layer and a 1/8 inch diameter rod for subsequent layers. After completion of welding, the weld area is to be maintained at 400-500°F for a minimum period of 2 hours. The completed weld deposit overlay will then be liquid penetrant inspected.

The inspector found that the welding and post heating requirements were in accordance with the ASME Code Case 1401.

The repair program also consisted of chip sample removal in selected areas. The samples have been sent to Westinghouse, Tampa, for analysis.

The grinding, welding and reinspection in steam generator number 33 was complete at the time of this inspection and the repair package was reviewed by the inspector. Work is in progress in the other three steam generators.

The fabricator of the steam generators has determined that the primary head had experienced salt water intrusion when shipped from the fabricator's Lester, Pennsylvania plant to their Tampa, Florida plant. The vessels were fabricated at the Lester plant except for the final circumferential closing seam of the secondary side which was welded after receipt at the Tampa plant.

The licensee has preliminarily attributed the probable cause of the liquid penetrant indications to the salt water being on the cladding for a period of time.

The licensee committed to prepare and issue a final report to the Commission which would delineate the cause and corrective actions taken.