IE:I Form 12
(Jan 75) (Rev)

U.S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-286/75-24 Docket No: 50-286

Licensee: Consolidated Edison Company of New York, Inc. License No: CPPR-62

Indian Point 3 Priority: -

4 Irving Place Category: B

New York, New York 10003

Location: Buchanan, New York Safeguards Group: -

Type of Licensee: PWR, 1050 MW(e) Westinghouse

Type of Inspection: Routine, Announced

Dates of Inspection: Sept 26, 1975

Dates of Previous Inspection: Sept 8-10, 1975

Reporting Inspector: G. A. Walton Oct 3, 1975
G. A. Walton, Reactor Inspector Date

Accompanying Inspectors: None
Date

Date

Date

Date

Other Accompanying Personnel: None
Date

Reviewed By: R. C. Haynes 10/3/75
R. C. Haynes, Senior Reactor Inspector Date

8111030615 751003
PDR ADOCK 05000286
Q PDR

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not Applicable

Design Changes

None Identified

Unusual Occurrences

A. Ultrasonic Examination of Steam Generator Cladding

The inspector observed a test to show the reproducibility and acceptability of the ultrasonic examination technique to be employed during the licensee's proposed surveillance program to monitor for crack growth in the cladding of the steam generator channel heads. (Details, Paragraph 3)

Other Significant Fingings

A. Current Findings

Not Applicable

B. Status of Previous Unresolved Items

Not Inspected

Management Interview

A management meeting was held at the site on September 26, 1975.

DETAILS

1. Persons Contacted

Consolidated Edison Company of New York, Inc.

A. Kohler, Resident Construction Manager
P. McTigue, Station Analytical Engineer
S. Rothstein, Senior Engineer
J. Deane, NDE Specialist
H. Hoffman, Consultant QA&R
R. Scheuster, Quality Assurance

Westinghouse Electric Corporation, Tampa Division

E. Loch, Metallurgical Engineer
C. Galyen, Reliability NDE

Automation Industries Inc.

R. Lucas, NDE Engineer
D. Burrelli, NDE Engineer

2. General

This inspection was conducted to observe a test of the ultrasonic examination technique to be used for the surveillance inspections of the steam generator head cladding.

3. Ultrasonic Examination of Steam Generator Cladding

The inspector observed the ultrasonic examinations which the licensee established as an augmented inservice inspection program to monitor preselected areas of the weld overlay cladding on the steam generator channel heads. The cladding problem and proposed course of action was described in the licensee's final report to the Nuclear Regulatory Commission, dated September 22, 1975.

The ultrasonic test instrument was calibrated on a test standard which represented the full thickness of the steam generator heads, including the weld overlay clad. The calibration was accomplished with a 48 degree shear wave, 1.0 MH_z, 1-1/8 inch diameter transducer on three eloxed notches, 3/4 inches long x .030 inches wide and varying depths of 1/8, 1/4, and 3/8 inches. The instrument calibration was set at 90 percent FSH (full screen height) on the 3/8 inch deep notch. The amplitudes from the 1/4 and 1/8 inch notch

gave responses of 55% FSH and 30% FSH respectively. These data points were then recorded on an X-Y plot recorder.

Testing was then performed from the outside surface of steam generator number 32 at position 8-9. A scan was made of this area (4" x 12") and an X-Y plot was made for a permanent record. The data obtained from a previous scan of the same area was then compared with the new data to determine if the system would reproduce the same results. The correlation of the two plots was satisfactory, within $\pm$ 10%, and the results showed that known conditions, such as previously ground areas in the weld metal overlay clad, were detectable using the testing equipment.

The method used to locate the test apparatus for subsequent tests of defined areas of the steam generator heads is through the use of four locator holes drilled in the channel head. These holes are approximately 1/4" diameter x 1/8" deep. The test apparatus has pins which align with the locator holes. The transducer is then manually moved to traverse the 4 inch scan. After each scan the transducer is indexed 3/4 inch and locked in with pins for the next scan. The inspector found and/or observed the following:

1. The test is a surveillance inspection on a sampling basis of preselected areas.

2. The licensee has selected eight areas for subsequent inservice inspection, six areas on generator 32, one on generator 34 and one on generator 31.

3. The technique being applied using ultrasonics appears to be sensitive to indications in the clad or base materials adjacent to the cladding.

4. The 1/8" deep reflector which is completely contained in the weld overlay clad is distinguishable above the noise level received from the cladding.

5. The scan methods applied will only detect indications parallel with the clad deposit, i.e, circumferential defects.

6. The licensee has identified that the defects which were more prominent during liquid penetrant and subsequent grind outs were located between weld beads and parallel to the weld beads.

The licensee stated that an appendix to the final report would be issued the week of September 29, 1975. This appendix will include the proposed augmented inservice inspection program for the cladding of the steam generator heads.