

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-247/82-17

Docket No. 50-247

License No. DPR-26 Priority -- Category C

Licensee: Consolidated Edison Company of New York, Inc.  
4 Irving Place  
New York, New York 10003

Facility Name: Indian Point, Unit 2

Inspection at: Buchanan, New York

Inspection Conducted: July 27-30, 1982

Inspectors: R. A. McBrearty August 16, 1982  
R. A. McBrearty, Reactor Inspector date

Approved by: J. P. Durr 8/18/82  
J. P. Durr, Chief, Materials and Processes Section date

Inspection Summary: Inspection on July 27-30, 1982 (Report No. 50-247/82-17)  
Areas Inspected: Routine, unannounced inspection of the inservice inspection program and implementing NDE procedures. The inspection involved 31 inspector-hours onsite and 12 hours in office by one NRC regional based inspector.

Results: No violations were identified.

## DETAILS

### 1. Persons Contacted

#### Consolidated Edison Company of New York, Inc.

- \*\*J. Deane, QA NDE Specialist
- \*W. Ferreira, Plant QA Engineer
- \*F. Phillips, Acting Site QA Manager
- \*D. Rosch, General Manager - Technical Support
- \*J. Schwartz, ISI and Files Coordinator
- \*J. Spivak, Engineer - Regulatory Affairs
- \*\*G. Wasilenko, QA Consultant

#### U.S. Nuclear Regulatory Commission

- \*T. Rebelowski, Senior Resident Inspector

\*Denotes those present at the exit meeting.

\*\*Telephone contact

### 2. Inservice Inspection ISI Activities

#### a. Program

The ISI program was reviewed with respect to 10 CFR 50.55a(g) requirements and applicable requirements in the ASME Code, Section XI.

The program submitted to the NRC in accordance with 10 CFR 50.55a(g) is based on the 1974 Edition of Section XI through the Summer 1975 Addenda. Final NRC approval of the program has not yet been granted. A letter from the NRC dated October 28, 1977 instructs the licensee to follow the program as submitted unless it differs from the approved technical specification, in which case he is instructed to observe the more restrictive of the differing requirements.

The licensee is required by 10 CFR 50.55a(g) to further update the ISI program in 1984 when the first 10 year inspection interval ends.

As a result of the problem associated with the unit 3 steam generator, the licensee has proposed to ultrasonically examine approximately 3 feet of the circumferential weld between the upper shell and the transition cone on steam generators 22 and 23. The welds are identified as weld 22-6 and 23-6. An 11 inch length of weld 21-6 in steam generator number 21 is scheduled for examination during the 1982 outage. The corresponding weld in unit 3 has displayed cracking and the examinations are intended to determine whether the unit 2 generators are free of the cracking problem.

Section XI permits delaying reactor pressure vessel (RPV) weld examinations until the end of the 10 year inspection interval. In accordance with that provision no RPV weld examinations are scheduled for the 1982 outage. The licensee stated that RPV welds will be examined if the vessel internals are removed as a result of examinations associated with Westinghouse recommendations regarding thermal sleeve problems detected in other plants. At the time of this inspection the licensee had not formalized his plans regarding the Westinghouse thermal sleeve recommendations.

No violations were identified.

b. Review of Implementing NDE Procedures

The following Westinghouse procedures were reviewed to ascertain compliance with the applicable ASME Code, regulatory requirements and licensee commitments:

- . NSD-ISI-5, Revision 12, "Manual Ultrasonic Examination of Circumferential and Longitudinal Butt Welds"
- . NSD-ISI-8, Revision 7, "Visual Examination Procedure"
- . NSD-ISI-10, Revision 4, "Preservice and Inservice Examination Manual Ultrasonic Equipment Qualification"
- . NSD-ISI-11, Revision 9, "Liquid Penetrant Examination Procedure"
- . NSD-ISI-15, Revision 6, "Ultrasonic Examination of Studs Bolts and Nuts"
- . NSD-ISI-41, Revision 4, "Manual Ultrasonic Testing of Reactor Coolant Pump Flywheels"
- . NSD-ISI-47, Revision 2, "Manual Ultrasonic Examination of Circumferential and Longitudinal Butt Welds in Ferritic Vessels of 2½" Thick and Greater"

Questions concerning the reviewed procedures were discussed with licensee representatives as follow:

ISI-5 - Section 2.7 of the procedure discusses "coupling distance" and states it shall not exceed 0.010". The licensee was requested to define the term and to indicate what method will be used to verify that the maximum is not exceeded.

ISI-10 - Amendment 1 to the procedure permits certain instruments to be exempted from the requirement to verify the accuracy of

the calibrated gain control per Section 2.3. The licensee was requested to describe how control accuracy is verified for the exempted instruments.

Section 3.2 addresses the angle of wave propagation in the examination material. The procedure does not differentiate between the characteristics of stainless steel and carbon steel regarding wave propagation. Using the same equipment the angle in carbon steel may differ significantly from the angle in stainless steel so that the angle determination should be made on the type of material being examined. The licensee was requested to provide information regarding determination of the angle of propagation in carbon steel and in stainless steel.

ISI-41 - The procedure does not place restrictions in the amount of sulphur and halogens in the ultrasonic couplant used on reactor coolant pump flywheels because such restrictions are not required for the designated component. The inspector questioned how the use of the couplant would be controlled to assure that it is not inadvertently used on austenitic stainless steel where the sulphur and halogen content of couplant must be restricted. The licensee was requested to provide information regarding this matter.

ISI-47 and ISI-205 - The procedures specify the use of a "low angle" approach when scanning for reflectors transverse to the weld axis. The technique is proposed for use, in lieu of improving the surface by grinding, when the weld contour precludes adequate transducer contact on the weld surface. The technique involves transducer placement on the base metal adjacent to the weld parallel to the weld axis. Scanning is done by angling the transducer a maximum of 15° toward the weld centerline. Calibration is done with the transducer directed normal to the calibration reflector. The inspector stated that calibration should be done the same way the examination is performed, (i.e. by angling the transducer a maximum of 15° toward the calibration reflector), to assure that transverse reflectors can be detected. The licensee was requested to provide assurance that the examination will detect the type of defects which it is intended to disclose.

ISI-205 - Procedure 205 appears to be a generic Westinghouse procedure in that it permits the use of either side drilled holes or notches as calibration standards. The licensee is committed to perform ISI to the 1974 Edition through Summer 1975 Addenda of ASME Section XI, which requires the use of drilled holes for ultrasonic instrument calibration. The licensee was requested to provide assurance that the code required calibration reflectors will be used when performing examinations at the site.

The above is considered unresolved pending licensee action and subsequent NRC review of the action (82-17-01).

No violations were identified.

### 3. Steam Generator Tube Examination

The inspector reviewed the steam generator inspection program for the 1982 refueling outage to ascertain compliance with the facility Technical Specification 4.13 and Regulatory Guide 1.83.

The inspector's review included the following:

- . Specification No. QA-7601, Revision 2, "Eddy Current Examination of Inconel Steam Generator Tubing"
- . Con Ed memorandum dated March 1, 1982 from H. Damsky regarding "Training of Nuclear Eddy Current Personnel"
- . Con Ed memorandum dated April 27, 1982 from S. Rothstein to J. Quirk regarding the "Indian Point Unit No. 2 Steam Generator Examination".
- . Consolidated Edison memorandum dated July 13, 1982 from S. Rothstein to L. Liberatori regarding the "Proposed Steam Generator Inspection Program".

The scope of the program for the 1982 outage includes tubes from all four steam generators.

The examinations will be done from the hot leg channel head, around the U-bend, to the uppermost support plate on the cold leg side. Selected tubes in each generator will be completely examined to the cold leg tube sheet.

Technical Specification 4.13 requires that a tube be removed from service if it will not permit passage of a 540 mil diameter probe. The licensee uses a technique, profilometry, to measure the strain on generator tubes. The degree of strain is related to the probability of stress corrosion cracking and leaking in service.

Tubes which do not permit passage of a 610 mil probe are examined by profilometry and if the measured strain value exceeds the limit established by the licensee, the tube is removed from service by plugging. The strain limit was established at 18 percent for the examinations conducted during the 1980 outage. Because of increased accuracy of the equipment which will be used in 1982, the licensee proposes to increase the limit to 25 percent.

Selected tubes in each generator are scheduled for examination by profilometry in addition to those tubes which do not permit passage of a 610 mil diameter probe.

No violations were identified.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable items, violations or deviations. An unresolved item is discussed in paragraph 2b.

5. Exit Interview

The inspector met with the licensee representatives denoted in paragraph 1 at the conclusion of the inspection on July 30, 1982. The inspector summarized the purpose and the scope of the inspection and the findings.