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

Region I

Report No. 50-247/82-24

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: November 15-19, 1982

Inspectors: L Mallow/RW
R. A. McBrearty, Reactor Engineer — 1/12/82 date

Approved by: Leon Mallow/RW
J. P. Durr, Chief, Materials and Processes Section — 1/12/82 date

Inspection Summary:
Inspection on November 15-19, 1982 (Report No. 50-247/82-24)
Areas Inspected: Routine, unannounced inspection of inservice inspection activities including program review, review of implementing NDE procedures, observation of NDE in progress and review of ISI data. The inspection involved 42.5 inspector-hours onsite by one regional based inspector.
Results: No violations were identified.

DETAILS

1. Persons Contacted

Consolidated Edison Company

*M. Blatt, Acting Director, Regulatory Affairs
*A. Corvese, Jr., QA
*J. P. Deane, QA - NDE Specialist
*W. Ferreira, Plant QA Engineer
F. Phillips, Acting Site QA Manager
*J. Schwartz, ISI & File Coordinator
*M. C. Smith, General Manager, Technical Support
*G. Wasilenko, QA PRINC Consultant

Westinghouse Electric Corporation

P. C. Bukes, ISI Acting Coordinator

Hartford Steam Boiler Insurance Company

R. L. Bockus, Authorized Nuclear Inspector

USNRC Personnel

*P. Koltay, Resident Inspector

*Denotes those persons present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (247/82-17-01): Adequacy of NDE procedures. The licensee provided information and procedure changes relative to questions concerning procedure ISI-5, ISI-10 and ISI-41. The inspector had no further questions regarding the item. The questions regarding the "low angle" approach and the use of notches as calibration reference reflectors are discussed in paragraph 3 of this report.

3. Inservice Inspection (ISI) Activities

a. Observation of NDE in Progress

The inspector observed the liquid penetrant examination and ultrasonic examination of pressurizer relief line 70, weld 1DM and weld 7DM. The welds are 4" diameter dissimilar metal welds.

The liquid penetrant examinations were done in accordance with procedure ISI-11, revision 9. Examination personnel were certified to PT Level II in accordance with SNT-TC-1A, the governing document.

The welds were ultrasonically examined in accordance with procedure ISI-205, revision 2. Angle beam examinations were done using a 45° shear wave transducer, ½" diameter at 2.25 MH_z. Machined notches in calibration block No. INT-26 were used to establish the examination calibration. The 1974 ASME Code, Section V, Article 5 requires that drilled holes shall be used as basic calibration reflectors to establish a primary reference response of the equipment and to construct a distance - amplitude correction curve (DAC). The code permits the use of other calibration reflectors provided equivalent responses to that from the basic calibration hole are demonstrated. At the time the level II technician established the calibration the inspector asked that he compare the notch sensitivity to that from a ½T drilled hole in calibration block INT-26. It was found that the notch sensitivity was approximately one half the sensitivity obtained from the drilled hole.

In a telephone conversation on December 10, 1982, the inspector was informed by the licensee's representative that, for the balance of the current 10 year inspection interval, Consolidated Edison Company will use drilled holes to calibrate the ultrasonic equipment when performing inservice inspection of piping welds. The 10 year interval ends in July 1984, at which time the licensee must update the ISI program in accordance with the provisions of 10 CFR 50.55 a(g).

This item is considered unresolved pending completion of the required examinations and NRC verification that ultrasonic calibration for applicable examinations is established from drilled holes (82-24-01).

No violations were identified.

b. Review of ISI Data

The inspector reviewed selected ISI data to ascertain completeness, possible trends in defect types and compliance with applicable ASME Code and procedural requirements. Data associated with the following were included in the inspector's review.

- Ultrasonic and liquid penetrant examination of dissimilar metal welds in the pressurizer relief line 70.
- Ultrasonic examination of letdown line 79 welds.
- Ultrasonic examination of charging line 96 welds.
- Ultrasonic examination of RHR line 10 welds.
- Ultrasonic examination of steam generator loop 21 and 23 welds.
- Ultrasonic examination of main steam line 2 welds.
- Ultrasonic examination feedwater line 6 welds.
- Ultrasonic examination of RPV Closure Head weld 1 (RVHC-2).
- Magnetic particle examination of RPV studs and nuts, steam generator bolting, welds in main steam line 2 and feedwater line 6.

. Liquid penetrant examination of weld 6 (9-93) in auxilliary cooling line 9.

The inspector's review indicates that the information provided by the data does not assure that the examinations meet code requirements and the licensee's ISI program.

At the exit interview the inspector stated that he considered the following as examples of data inconsistencies with the ASME code and applicable NDE procedures:

Ultrasonic examination data - Numerous examinations are documented as "partial," but the extent of the limitation is not provided. Westinghouse procedure OPS-NSD-101 revision 5 requires that information be entered on data sheets to indicate the approximate extent of limitation when an examination cannot be done completely.

Magnetic particle examination data - Partial examinations are documented. The same comment applies as stated above. The type of current used is not identified when an AC/DC yoke (Parker Probe) is used. The method and frequency of verification of the black light intensity is not documented when fluorescent particle examination techniques are used. Section V, Article 7 of the ASME Code requires that the black light intensity at the examination surface shall be determined at least once every 8 hours and whenever the work location is changed. The data do not identify the method or frequency of verifying that the magnetic particle bath strength meets procedural restrictions when the wet method is used. The data fail to identify how magnetic field strength adequacy is determined when a magnetic coil is used.

Liquid penetrant examination data - The data do not verify that procedural examination surface temperature limitations are observed.

The above is considered unresolved pending licensee verification that the ISI done during the current refueling outage was done in compliance with ASME code requirements and ISI program requirements, and that the data verify that the requirements were met. (247/82-24-02)

The reviewed ultrasonic examination data indicate that the "low angle" approach was used in numerous instances to perform the angle beam scan for the detection of discontinuities tranverse to the weld as required by the ASME Code, Section V, Article 5, paragraph T-535.2 (e).

The technique is used when the weld surface condition precludes placing the transducer directly on the weld crown, and is accomplished by placing the search unit on the surface adjacent to the weld with the sound beam directed into the material parallel to the weld axis. The search unit is then angled to a maximum of 15 degrees towards the weld to direct the beam into the weld material. Scanning shall be along the 15 degree axis and indexing with at least a 10 percent overlap. The examination is repeated with the transducer turned 180 degrees.

In response to the inspector's question regarding the calibration method for the technique, the licensee stated that calibration is done with the sound beam directed into the material normal to the axis of the calibration reflector. He further stated that an attempt was made to calibrate with the sound beam directed into the material at a 15° angle to the reflector axis, and that this proved to be impractical because of the high gain required to detect the calibration reflector and the resulting high noise level from the test material. The licensee stated that the technique is used on a best effort basis where the as-built plant configuration precludes placing the search unit directly on the weld surface. The inspector had no further questions regarding this matter.

No violations were identified.

c. Procedure Review

The inspector reviewed the approval records for the Westinghouse Electric Corporation ISI procedures available for use at the site during the current refueling outage. The review was done to ascertain that the current procedures were approved in accordance with the licensee's ISI program.

The procedure governing magnetic particle examination, ISI-70, revision 0, was included on the list of approval procedures but revision 1 was being used. The inspector found ISI-70, revision 1 to be technically adequate and in compliance with the applicable requirements of Section V of the ASME Code.

Prior to the inspector's leaving the site on November 19, 1982, the licensee approved the procedure and documented the approval. The inspector had no further questions concerning the matter.

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 3a and 3b.

5. Exit Interview

The inspector met with the licensee representatives denoted in paragraph 1 at the conclusion of the inspection on November 19, 1982. The inspector summarized the purpose and the scope of the inspection and the findings.