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

Region I

Report No. 78-33

Docket No. 50-286

License No. DPR-64 Priority - Category C

Licensee: Power Authority of the State of New York

P. O. Box 215

Buchanan, New York 10511

Facility Name: Indian Point Nuclear Generating Station, Unit 3

Inspection at: Buchanan, New York

Inspection conducted: December 5-8, 1978

Inspectors: T. H. Smith, Reactor Inspector — 1/12/79 date signed

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_____ date signed

Approved by: D. L. Caphton, Chief, Nuclear Support Section No. 1, RO&NS Branch — 1/15/79 date signed

Inspection Summary:

Inspection on December 5-8, 1978 (Report No. 50-286/78-33)
Areas Inspected: Routine, unannounced inspection by a regional based inspector of the Containment Integrated Leak Test Report; local leak rate testing; and, licensee action on previous inspection findings. The inspection involved 31 inspector-hours on site by one NRC regional based inspector.
Results: Of the three areas inspected, no items of noncompliance were found in two areas; one item of noncompliance was found in the third area (Infraction - failure to conduct required local leak rate testing in 2 year interval - Paragraph 4.b)

DETAILS

1. Persons Contacted

Power Authority of the State of New York (PASNY)

*J. Bayne, Resident Manager
S. Cantone, Superintendent of Power
*W. Hutchinson, QA Engineer
*J. Kilduff, Assistant to Resident Manager
*S. Zulla, Technical Services Superintendent

EBASCO

*M. Tagliamonte, Senior Engineer, Plant Operations and Betterment Department

* denotes those present at the exit interview

The inspector also talked with and interviewed members of the technical, engineering and operations staffs.

2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (286/78-23-02): Containment Integrated Leak Rate Test (CILRT) instrumentation calibration records for resistance temperature detectors, dewcels and the verification test flowmeters were reviewed by the inspector. The records were satisfactory and showed calibration traceability to national standards.

(Closed) Unresolved Item (286/78-23-03): Instrumentation error was incorporated into the CILRT test results by performing an instrument error analysis rather than correcting each data point for individual instrument error. The error analysis results were then added to the measured leak rate prior to comparison with the acceptance criteria. The inspector had no further questions regarding the subject method used.

(Closed) Unresolved Item (286/78-23-04): The inspector reviewed the Events Log for completeness and accuracy. Based on this review, and statements from licensee representatives, the log appears to discuss all leak repairs made during the CILRT. This item is resolved.

(Closed) Unresolved Item (286/78-23-05): Based on a review of available written documentation and interviews with licensee personnel, there were no repairs made or other actions taken during the CILRT which would require the initial stages of the test be designated a test failure. Therefore, the future test schedule as initially indicated by this unresolved item for Indian Point, Unit No. 3, need not be reviewed by the NRC. The inspector has no further questions on this item at this time and considers it resolved.

(Closed) Unresolved Item (286/78-23-06): Penetrations and valves which were not lined up in their normal post-accident mode were local leak rate tested as required. Total leakage measured was zero, hence there is no addition to the Type A test.

(Closed) Unresolved Item (286/78-23-07): A licensee's representative stated that the Residual Heat Removal system containment isolation valves are in fact locally testable with fuel in the reactor. These valves have been tested and the results will be reported. This item is resolved.

(Closed) Unresolved Item (286/78-23-01): The CILRT procedure had not been changed to specify that test data evaluation would be made using the mass point technique. However, a licensee's representative acknowledged that the NRC would made an independent calculation using raw data and the mass point evaluation technique, and that the test must meet the acceptance criteria of 0.75 La at the 95% upper confidence level to be considered successful.

During the conduct of the CILRT pressurizer level and containment sump level changes caused an insignificant change in containment free volume. Therefore, no correction to the measured leak rate is required. This item is considered resolved.

3. Containment Integrated Leak Rate Test (CILRT)

a. General

The following Indian Point, Unit No. 3 documents and procedures were reviewed:

-- "Integrated Leak Rate Test," Revision 1, dated July 26, 1978

-- "Reactor Containment Building Integrated Leak Rate Test, Summary Technical Report" (Prepared by Ebasco Services Incorporated), dated September 6, 1978

The above references were reviewed for: accuracy, proper instrument calibration, proper implementation of procedural changes and accurate recording of significant events during the test. No items of noncompliance were identified.

b. CILRT Results

The CILRT leak rate was reported by the licensee using the total time analysis method at the 95% confidence level. The inspector performed independent calculations, using raw data and the mass point evaluation technique, to determine acceptability of the test by the NRC. Based on inspector calculations, using all the data as submitted, the supplemental test appeared to not meet the acceptance criteria. Upon further analysis of the data by the inspector, it was noted that the output from two of the five dewcels reported was extremely erratic, while the remaining three dewcels appeared to be operating normally. The inspector eliminated the data from the erratic dewcels and recomputed the containment leak rate and the verification test leak rate. Based on this additional analysis it appears that the results of the CILRT are satisfactory. Results are summarized in Table 1.

c. CILRT Analysis Method

The NRC bases its acceptance of a CILRT on the mass point evaluation technique. If the additional data analysis done by the inspector on this test had not demonstrated satisfactory results, the test would not have been acceptable to the NRC. The licensee's data analysis technique is considered an unresolved item pending the analysis method selection for the next test. (286/78-33-01).

d. Instrumentation

During the conduct of this CILRT there were considerable problems, of an undetermined nature, with the dewcels. Five of the initial ten dewcels were eliminated during the test, and data from two of the remaining five dewcels had to be eliminated during inspector data analysis in order to complete findings that acceptance criteria was met. Instrumentation, especially dewcels, will receive additional attention during subsequent leak rate tests. This is designated as an inspector follow item. (286/78-33-04)

4. Local Leak Rate Testing (LLRT)

a. General

The following Indian Point, Unit No. 3 documents and procedures were reviewed.

-- "Containment Isolation Valve Leakage Test," 3PT-R35, Revision 0, dated November 23, 1977

-- "Containment Penetration and Weld Channel Pressurization System," 3PT-R9, Revision 0, dated July 5, 1978

-- "Air Lock Leakage," 3PT-SA-9, Revision 0, undated

-- "Isolation Valve Seal Water Test," 3PT-R25, Revision 0, dated June 7, 1978

-- Summary Analysis of Periodic Type B and C Tests Reports of October 16, 1978

With the exception of the below items, the inspector had no further questions in this area.

b. Local Leak Rate Test Interval

Technical Specification 4.4.E.1.b through d requires local leak rate testing of listed valves at intervals no greater than 2 years. The listed valves were tested in January 1975 and again during the period June-August 1978, a period in excess of two years. This is an item of noncompliance (286/78-33-02).

c. Local Leak Rate Tests Report Format

The format of the Summary Analysis of Periodic Type B and C Tests Report is such that it does not allow analysis by the NRC, in that all Type B and C test results were reported as a single total. The desired format lists leakage per individual valve or group of valves which are tested simultaneously. This item is unresolved pending a revised submittal (286/78-33-03).

5. Unresolved Items

Items about which more information is required to determine acceptability are considered unresolved. Paragraphs 3.c and 4.c of this report contain unresolved items.

6. Exit Interview

At the inspection's end, the inspectors held a meeting (see Detail 1 for attendees) to discuss the inspection scope and findings. The item of noncompliance and unresolved items were identified.

Table 1

August 1978 - CILRT Conducted at Pa (40.6 PSIG)
at Indian Point Unit 3

	ITEM	ACCEPTANCE CRITERIA	REPORTED RESULTS	INSPECTOR'S FINDINGS
1.	CILRT Leak Rate by Total Time Technique at Upper 95% Confidence Level	-	0.014%/day	
2.	CILRT Leak Rate by Mass Point Technique	-	-	-0.0052%/day
3.	Upper 95% Confidence Level on Leak Rate (Mass Point)	0.75La = .075%/day	-	-0.0028%/day
4.	Supplemental Verification Test Difference	$\leq$ 0.25La = .025%/day	0.003%/day* Total Time	.020%/day Mass Point

* Verification value small because it appears the Total Time mean value of the CILRT was compared to the Total Time high point value of the Supplemental Test.