

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

Region I

Report No. 50-220/79-03

Docket No. 50-220

License No. DPR-63 Priority - Category C

Licensee: Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Facility Name: Nine Mile Point Nuclear Station, Unit 1

Inspection at: Scriba, New York

Inspection conducted: January 29-31, 1979

Inspectors: T. H. Smith, Reactor Inspector

2/20/79
date signed

T. Foley, Reactor Inspector

2/20/79
date signed

Approved by: D. L. Caphton, Chief, Nuclear Support Section No. 1, RO&NS Branch

2/21/79
date signed

Inspection Summary:

Inspection on January 29-31, 1979 (Report No. 50-220/79-03)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of the containment integrated leak rate test procedure. The inspection involved 38 inspector-hours on site by two NRC regional based inspectors.

Results: No items of noncompliance were identified.

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DETAILS

1. Persons Contacted

D. Balduzzi, Central File Supervisor
G. Leskiw, Quality Assurance
W. Mosher, Office Supervisor
*T. Perkins, Station Superintendent
*M. Silliman, Results Superintendent
B. Taylor, Instrument and Control Supervisor

* denotes those present at the exit interview.

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

2. Containment Integrated Leak Rate Test (CILRT)

a. General

The inspector reviewed the CILRT procedure, NJ-ISP-IC-23, "Integrated Leak Rate Test of Primary Containment PCILRT (Type A Test)" (Draft - undated) for technical adequacy and compliance with 10 CFR 50 Appendix J, ANSI N45.4, and Nine Mile Point Technical Specifications. The test is scheduled to be run in accordance with Bechtel Corporation's procedure BN-TOP-1, which calls for a test of 8 hours duration. The inspector therefore verified that the CILRT procedure satisfied the provisions of BN-TOP-1.

During discussions of the procedure with licensee personnel, the inspector made the following comments.

(1) Evaluation Technique

The NRC currently accepts the mass point data evaluation technique in determining the containment leak rate.

(2) Acceptance Criteria

The NRC requires that the CILRT meet the following acceptance criteria. Measured leakage at test pressure ($L_m(22)$), plus corrections (type C test add-ons, containment volume changes due to level changes, etc.), must be less than or equal to 75% of the allowable test leak rate ($.75L_t = 0.82\%/day$) at the 95% upper confidence level.



(3) Test Failure

The last CILRT conducted at Nine Mile Point in November 1975 initially failed. In such cases, Appendix J, Section III.A.6.b requires that a test be run each refueling outage until two consecutive tests are successful.

The inspector had no further questions at this time concerning the procedure except as noted below.

b. CILRT Procedure

The below items associated with the CILRT procedure are unresolved and are collectively designated as Item No. (220/79-03-01).

(1) Volume Weighting Factors

If instrumentation becomes inoperative during the test, there is no provision in the procedure as to how volume weighting factors will be reassigned.

(2) Dew Point Instrumentation

BN-TOP-1 states that six dew point sensors are generally required to conduct the CILRT. The procedure currently calls for only four. Justification for a reduction in the number of dew point sensors was not available at the time of the inspection.

(3) Containment Volume

The volume of the drywell stated in different sections of the procedure is inconsistent. Paragraph 5.1.1 states that the drywell volume is 183,437 cubic feet. The total of the RTD volume fractions in paragraph 6.0 is 185,437 cubic feet.

(4) Calibration Corrections

BN-TOP-1 requires that calibration curve correction factors be applied to each data point of each sensor input. The current procedure does not contain this requirement.



(5) Atmospheric Conditions

ANSI N45.4 requires that atmospheric pressure and ambient temperature be recorded hourly. This requirement is not in the current procedure.

(6) Technical Specifications

The Nine Mile Point Technical Specifications currently require that the Type A test duration shall not be less than 24 hours. A technical specification change will be required before an eight hour test would be valid.

(7) Verification Test Criteria

The verification test acceptance criteria, as stated in paragraphs 5.3.19 and 6.0 of the procedure, do not conform to Appendix J, Section III.A.3.b. For a reduced pressure test, the difference between the supplemental test data and the Type A test data must be less than or equal to $0.25L_t$. The procedure currently requires this difference to be less than or equal to $0.25 L_a$.

(8) Pressure Switches

The procedure currently calls for high drywell pressure switches 201.2-07, 01, 14 and 13 to be isolated from the containment. This removes a potential leakage path from the containment as these switches would be subjected to containment pressure during a loss of coolant accident. If the switches remain isolated, Type C tests must be conducted with the results added to the Type A test leak rate.

(9) Data Rejection

During the CILRT outlying data may be rejected provided definitive data rejection criteria have been established. Currently, there are no such criteria in the procedure.

c. Valve Lineup Review

On a sampling basis, the inspector checked the CILRT procedure valve lineup sheets to verify that:



- each penetration was provided with a valve lineup;
- valves were in the correct position;
- proper vent paths were provided; and
- artificial leakage barriers were not created which could mask containment leakage.

During the check the inspector noted the following:

(1) Main Steam Line Penetration X-2A

The valve lineup for penetration X-2A requires that valve MS-701 be shut and MS-703 be open with the down stream cap removed. Based on a review of the Nine Mile Point P&ID C-18002-C, Revision 12, "Steam Flow, Main Steam and High Pressure Turbine", this valve lineup appears to create a direct path for leakage from the containment to the outside atmosphere.

(2) Drywell and Recirculation Pump Cooling Penetrations X-156, 157 and X-12B, 13B

The current valve lineup does not contain provisions for testing the containment isolation valves of these systems during the CILRT. Based on the requirements stated in 10 CFR 50, Appendix J, Section III.A.I.d it appears that these systems must be vented and drained for the CILRT or type C tests performed on the containment isolation valves with the results added to the type A test.

(3) Containment Sampling Penetrations X-20, 64, 98, 134 and 139

The current procedure does not contain valve lineups for the systems associated with these penetrations.



(4) Feedwater and Liquid Poison Penetrations X-4A, 4B and X-131

The current valve lineup for the Primary Feedwater System does not address valves FW-57/30-13 and FW-58/30-14. If these valves are shut during the CILRT the vent path would be isolated and an artificial leakage barrier established.

The valve lineup for the Liquid Poison System currently designates a vent path for the system, however, the lineup also causes the vent path to be isolated from the system. This creates an artificial barrier to containment leakage.

The above items are unresolved and are collectively designated Item No. (220/79-03-02).

3. Print Error

During review of the CILRT procedure valve lineups, an apparent error in station controlled prints was discovered by the inspectors. P&ID drawings C-18002-C Sheet 1, Revision 12 and C-18006-C, Sheet 1, Revision 2, both show the same portions of the head spray system, however, the labeling of four valves differs. It was determined by visual observation by licensee personnel that P&ID drawing C-18002-C has head spray valves CRD 707, 708, 709 and 710 incorrectly labeled as CRD 709, 710, 711 and 712. Upon further investigation, including review of Administrative Control Procedures, Document Control Procedures and interviews with station personnel, it was determined that there is apparently no station procedure which requires drawings to be updated when differences between drawings and as built conditions are discovered. This item is unresolved pending further review in a subsequent inspection. (220/79-03-03)

4. Unresolved Items

Items about which more information is required to determine acceptability are considered unresolved. Paragraphs 2.b, 2.c and 3 of this report contain unresolved items.



5. 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 unresolved items were identified.

