

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report Nos. 50-272/86-14, 50-311/86-14

Docket Nos. 50-272, 50-311

License Nos. DPR-70, DPR-75

Category C

Licensee: Public Service Electric and Gas Company

Facility Name: Salem Nuclear Generating Station, Units 1 and 2.

Inspection At: Hancock's Bridge, New Jersey

Inspection Conducted: April 28 - May 2, 1986

Inspector:

*Spullani*  
for Jin W. Chung, Lead Reactor Engineer

6-10-86  
date

Approved by:

*Spullani*  
for C. J. Anderson, Chief, Plant Systems  
Section

6-10-86  
date

Inspection Summary: Inspection on April 28 - May 2, 1986 (Combined Report Nos. 50-272/86-14 and 50-311/86-14).

Areas Inspected: Routine, unannounced inspection of followup of previous inspection findings; evaluation of Local Leak Rate Testing (LLRT) results; and facility tours.

Results: No violations or deviations were identified.

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## DETAILS

### 1.0 Persons Contacted

- \*C.J. Conner, Jr., ISI Supervisor, Salem 1.
- \*L. Lake, ISI Engineer  
R.S. Patwell, Licensing and Regulations
- \*D.A. Perkins, Station QA Manager
- \*J. Rupp, Licensing Engineer  
W. Treston, ISI Supervisor, Salem Operation
- \*P. White, Maintenance Manager, Salem Operation
- \*J.M. Zupko, Jr., General Manager, Salem Operation

The inspector also interviewed other licensee employees during the course of inspection.

\*Denotes those present at the exit interview on May 2, 1986.

### 2.0 Licensee Actions on Previous Inspection Findings

(Closed) Unresolved Item (50-272/84-28-01) No "As Found" ILRT calculations.

"As Found" and "As Left" ILRT calculations were included in the 1984 ILRT report submitted to NRC on November 8, 1984. The "As Found" ILRT was obtained by taking the difference between the "As Found" and the "As Left" Type C LLRT and by adding the difference to the "As Left" ILRT. The resulting "As Found" ILRT still met the acceptance criterion of 216.240 SCCM (La).

This correction was implemented into Type A test procedure, M9-ILP-CT-1, Revision 4 by issuing an Advanced Change Notice (ACN), dated May 1, 1986. This item is closed.

(Closed) Unresolved Item (50-311/83-17-01) Correction of ILRT "As Left" result.

The ILRT results reported to NRR on October 13, 1983 included "As Left" and "As Found" type B and C test results. The ILRT correction for "As Found" value as per NRC IE Information Notice 85-71, was implemented in procedures, M9-ILP-CT-1 and M9-ILP-CT-3, by issuing two CN's A both dated May 1, 1986.

This item is considered closed.

(Closed) Inspector Followup Item (50-311/83-17-03) Corrections For The Preliminary ILRT results.

Pre-test and post-test volume corrections were included in page 13, section 6 of the final ILRT report submitted to NRC on October 13, 1983.

Also, systems and penetrations isolated during the ILRT test were type C tested and the corrections for "As Found" ILRT were included in section 6.2 of the report. The effect of pressurizing steam generators #22 and #23 was evaluated and also included in the October report.

Based on the above review, this item is closed.

(Closed) Deviation (50-272/84-26-02) Excessive leakage from steam generator blowdown isolation valves.

The licensee identified the excessive leakage through containment isolation valves ICC215, 14GB4 and IVC8, and issued LER 83-010/03L, March 8, 1983. Subsequently, a change to technical specification Table 3.6.-1 was proposed to NRR on November 27, 1985 for an exemption from the type C test.

The licensee's response letter of November 5, 1984 to the Notice of Deviation was reviewed, by the inspector. It was determined that closure of this item would depend upon the final approval of the proposed change to the technical specifications, Table 3.6.1. Based on this, this item was closed and combined with items 50-272/84-26-03 and 50-311/83-17-02, and modified as an unresolved item, pending final approval of the proposed changes by NRR (see paragraph 3.3).

(Closed) Unresolved Item (50-272/84-26-03 and 50-311/83-17-02) venting of containment weld channels.

The licensee proposed an exemption of Weld Channels venting by a letter dated October 13, 1983. This item was closed by combining with the above items, 50-272/84-26-02, pending final approval of the proposed exemption.

### 3.0 Local Leak Rate Testing(LLRT)

The purpose of this inspection was to ascertain that the LLRT was conducted in compliance with the requirements and commitments referenced in the following sections 3.1 and 3.2, and that the test results met the acceptance criteria specified in the station procedures and Appendix J, 10 CFR 50.

#### 3.1 References

- 10 CFR; Part 50, Appendix J, Primary Reactor Containment Leakage Testing for Water Cooled Power Reactors
- Salem Unit 1 Technical Specifications Sections 3/4.6.1, Primary Containment
- Salem Unit 2 Technical Specifications, Sections 3/4.6.1, Primary Containment

- Updated Final Safety Analysis Report (FSAR), Section 6.2, Containment Systems
- ANSI/ANS 56.8-1981, Containment Systems Leakage Testing Requirements
- USNRC I&E Information Notice No. 85-71; Containment Integrated Leak Rate Tests

### 3.2 Documents Reviewed

- M9-IAP-1, Revision 3, Inservice Inspection Department Administrative Instructions
- M9-IAP-2, Revision 2, Inservice Inspection Department ISI Program
- M9-ILP-CT-3, Revision 0, Inservice Inspection Type B and Type C Leak Rate Testing, December 4, 1985; On-The-Spot Change (OTSC) Nos. 1, 2, 3, and 4.
- Containment Integrated Leak Rate Test, Unit 1, Summary Technical Report, November 8, 1984
- Containment Integrated Leak Rate Test, Unit 2, Summary Technical Report, October 13, 1983
- Licensee Event Report (LER), 83-010/03L, March 8, 1983, Containment Systems - Containment Types B and C Leak Rate - Out-of-Specification

### 3.3 Test Results Evaluation

The summary results and selected samples of Type B and C test results were reviewed and verified against 10 CFR 50, Appendix J. The Technical Specifications, and NRC I&E Information Notice No. 85-71. The results are tabulated in the following table:

<u>Unit</u>	<u>Core</u>	<u>Outage Date</u>	<u>Sum of</u>	
			<u>Types B &amp; C, SCCM</u>	
			<u>As Found</u>	<u>As Left</u>
1.	V	1982/83	57,917	27,461
	VI	1984		29,033
	VII	1986	59,154	16,203

2.	II	1983		19,137
	III	1984/85	45,756	23,041

Acceptance Criteria (0.6La): 129,750 SCCM

The above results met the acceptance criteria of 129,750 SCCM.

The inspector also reviewed Deficiency Reports (DR) and associated Work Orders (WO), on a selected basis, to determine that the "As Found" conditions were accounted for and that the "As Left" and "As Found" LLRTs were properly incorporated in the Type A, Containment Integrated Leak Rate Testing (CILRT) result, for "As Found" correction.

The DR's and WO's reviewed were:

Unit 2

- DR # MT-84-121/WO #84-18-04-023-1;  
22 CA 360 leaking for B Header Instrument Air
- DR # MT-107; 22VC19 packing leaking
- DR # MF84-106/DCR #84-10-04-027-1; 2VG-5 and 6 leak testing
- DR # MT-84-105/WO #84-10-04-027-1;  
2WL98 valve leaking
- DR # MT-84-112/WO #84-10-04-027-1;  
2NT34 valve leaking

Unit 1

- DR # MT 86-069/WO #85-09-04-003-1; 1WR 81 valve leaking
- DR # MT 86-038/WO #85-09-14-003-1; 1 PR17 valve leaking
- DR # MT 86-033/WO #85-09-14-003-1; 13GB4 valve leaking
- DR # MT 86-032/WO #85-09-14-003-1; 12GB4 valve leaking

The inspector discussed with the licensee representative the corrections made on the type A test results after repairs and adjustments. The inspector also discussed a correction to the "As Left" type A test results and the intent of the NRC I&E Information Notice, No. 85-71.

Subsequently, the licensee revised its procedures, M9-ILP-CT-1 and M9-ILP-CT-3, to reflect the I&E Information Notice No. 85-71.

Based on these, the above open items were resolved.

The procedures now require the licensee to obtain both the "As Found" and the "As Left" LLRT data and derive a correction for the "As Found" ILRT. The inspector also reviewed deviation (50-272/84-26-02) and questions (50-272/84-26-03, and 50-311/83-17-02) raised during previous inspections.

In response to the above findings the licensee took several corrective actions and submitted letters to NRR, dated November 5, 1984 and October 13, 1983, requesting several amendments and exemptions to the technical specifications.

Based on the review of the above corrective actions and submittals to NRR, the inspector determined that items, (50-272/84-26-03, 50-272/84-26-02, and 50-311/83-17-02) would be resolved, pending final approval of the proposed changes by NRR. This is an unresolved item, pending NRR approval of the proposed changes (50-272/86-14-01, 50-311/86-13-01).

#### 3.4 "As Found" CILRT Results

The procedures M9-ILP-CT-3 and M9-ILP-CT-1 were reviewed to apply a correction factor to the type A test result as follows:

- The procedures require the licensee to obtain the "As Found" and the "As Left" LLRT data
- The "As Found" ILRT can be calculated by adding an LLRT correction to the "As Left" ILRT as follows:

$$\text{"As Found" ILRT} = \text{"As Left" ILRT} + \text{LLRT correction}$$

- The LLRT correction is calculated as follows:

$$\text{LLRT correction} = \text{Sum of "As Found" LLRTs} - \text{Sum of "As Left" LLRTs}$$

- The "As Found" LLRTs were those obtained prior to the "As Left" CILRT, and the "As Left" LLRTs, immediately after the "As Left" CILRT.

Using the above, the inspector performed an independent calculation for the "As Found" CILRT. The results are tabulated as follows:

<u>Unit</u>	<u>Core</u>	<u>As Found</u>	<u>LLRT</u>		<u>CILRT</u>	
			<u>As Left</u>	<u>Difference</u>	<u>As Left</u>	<u>As Found</u>
1	VI	59,154	29,033	30,121 (0.139La)	(0.411La)	(0.55La)
2	III	45,756	19,137	26,619 (0.123La)	29,524 (0.136La)	56,243 (0.26La)

The acceptance criteria for the Type A CILRT is 75% of 216,240 SCCM (0.75 La). The results met the criterion. No unacceptable conditions were identified.

#### 4.0 Plant Tours

The inspector made several inspection tours of the plant facilities, both units 1 and 2, including the Turbine Building Primary Auxiliary Building, and Control Room. The areas inspected included the following:

- EDG rooms
- Auxiliary Feedwater pumps
- Core Spray pumps
- Volume Control Tanks
- Control Room
- Charging pumps
- Component Cooling Water System Penetration
- Containment Penetrations: SA118 and CC225

The inspector observed operations and activities in progress, general condition of the safety-related equipment, component tagging, and system operations.

#### Findings

At 1515 hour, April 30, 1986, the inspector observed a technician working on the #13 EDG air dryer. However, the technician did not have the Work Order (WO) which specified the repair work or procedures to guide the repair activities. The inspector raised a concern regarding the performance of maintenance activity on vital equipment without written guidance or work order. The work order #86-04-15-051-0 for the activities was later provided. The inspector determined that this was an isolated case. However, probable safety-implications were discussed with

the technician and his management to prevent future recurrences. The licensee stated that this particular activity did not require any written procedure.

On May 1, 1986, 0900 AM, the inspector noted an excessive water leak on 1WL13 near the SA118. The licensee was immediately notified and a work order #86-05-01-010-0 was issued for a repair.

#### 5.0 Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable, or whether they are violations or deviations. Paragraph 3.3 contains one unresolved item.

#### 6.0 Exit Interview

The inspector met with licensee management representatives (see Section 1.0 for attendees) on May 2, 1986. The inspector summarized the scope and findings of the inspection at that time. At no time during the inspection were written materials provided to the licensee by the inspectors.