



Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038

Nuclear Department

November 8, 1984

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Licensing
Washington, D. C. 20555

Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch, No. 1

Dear Mr. Varga:

CONTAINMENT INTEGRATED LEAK RATE TEST
NO. 1 UNIT
SALEM GENERATING STATION
DOCKET NO. 50-272

Attached as Enclosure 1 is a report on the second inservice Containment Integrated Leak Rate (Type A) Test for Salem Unit No. 1. The test was performed during the 24 hour period ending August 12, 1984 in compliance with Appendix J of 10 CFR 50 and Plant Technical Specification 4.6.1.2. The conclusion of the report is that the containment leakage rate meets the acceptance criteria of Appendix J and the Technical Specification.

Included in the report is a summary of local leak rate (Type B and C) tests conducted since the first inservice Type A test.

One condition of the Unit No. 1 inservice testing was not exactly the same as the original preoperational test condition, in that some liner, plate monitor channels were plugged shut during the inservice test.

8411140338 841108
PDR ADCK 05000272
P PDR

The Energy People

A017
r/c

Justification for this condition was previously provided with the test report for the Unit No. 2 CILRT performed in May 1983, as submitted in our letter dated October 13, 1983, and is also applicable to Unit No. 1. For your information, the determination previously submitted is provided below:

Determination

Although the containment liner test channels (monitor channels) were originally designed for testing the leak tightness of the liner seam welds, they were designed as safety related, Seismic Category 1. The monitor channels, as such, are capable of withstanding all upset loading conditions, as well as all test loads, without any loss of function or impairment of the performance of the containment liner. Although the monitor channels were not originally designed as part of the pressure boundary, our evaluation shows that they are capable of performing this function, and in so doing, provide additional containment leak protection. This evaluation leads to our determination that a valid Type A leak rate test can be performed whether the monitor channels are open or plugged shut.

The maximum stress in the liner plate that would cause the maximum stress in the monitor channels is a tensile stress which is a result of the 47 psig integrated leak rate test of the containment (see the following table). This case induces a higher tensile stress in the liner plate than the design basis accident. The reason for this is that there is no temperature rise associated with the test condition. Compressive stresses are created by the high temperatures associated with an accident condition, which overcome the tension in the liner. The stresses listed in the following table have been divided by the appropriate capacity reduction factor, which is 0.95 for tension. Our original computations for the liner plate indicate that there would be no inelastic buckling of the plate.

This table gives the stresses for the reinforcing bars and liner for various loading conditions and was previously provided to the NRC as additional information to the SAR.

Max. Stress Loading K/ft	REBARS						LINER			
	DOME		WALL		DISC.	AT	DOME		WALL	
	Merid.	Hoop	Merid.	Hoop	@ FDN	OPNG	Merid.	Hoop	Merid.	Hoop
P	+9.7	+19.3	+9.5	+22.5	+19.0	+31.0	+11.0	+11.8	+11.2	+21.1
1.15P	+12.6	+22.2	+12.7	+26.1	+23.0	+35.5	+13.0	+15.3	+14.4	+25.0
P+T	+27.4	+37.0	+28.3	+31.2	+36.5	+36.0	-7.3	-6.5	-13.3	-5.1
1.5P+T	+42.5	+52.2	+45.0	+49.0	+57.0	+51.2	-3.0	-2.2	-9.3	+1.0
P+T+E	+28.6	+40.3	+30.5	+31.5	+39.0	+42.8	-9.0	-14.6	-23.9	-6.4
1.25P+T+1.25E	+37.0	+49.5	+40.5	+41.3	+51.0	+53.5	-8.5	-9.3	-25.7	-4.6
P+T+1.0E'	+29.2	+41.4	+31.2	+32.3	+40.0	+43.8	-9.7	-10.4	-27.7	-6.9

Note: E stands for design earthquake, E' stands for maximum credible earthquake and P is the condition for 47 psig. Plus (+) is tension, minus (-) is compression.

The above table is based on ground accelerations of 0.10g for the design earthquake and 0.20g for the maximum credible earthquake. Where creep of concrete reduces the stresses in the rebars or the liner it was not considered for conservatism. Where creep increased the stress it was included to obtain the maximum stress.

The channels were checked for stresses due to test conditions by subjecting them to the combination of an exterior pressure of 47 psig and the movement of the channel legs due to elongation of the liner plate, in both meridional and hoop directions. The results show that the channels are not overstressed.

Since the channels are not overstressed for the test condition, and this is the most severe loading case, we conclude that the Type A tests can be conducted with the monitor channels either open or plugged shut and meet the requirements of Appendix J, 10 CFR 50.

Should you have any questions, please do not hesitate to contact us.

Sincerely,

A handwritten signature in cursive script, appearing to read "Larry Liden".

E. A. Liden
Manager - Nuclear
Licensing and Regulation

Enclosure

- C Mr. Donald C. Fischer (with Enclosures)
Licensing Project Manager

- Mr. James Linville (with Enclosures)
Senior Resident Inspector