



PSEG

Public Service Electric and Gas Company 80 Park Place Newark, N.J. 07101 Phone 201/430-7000

October 30, 1979

Mr. Albert Schwencer, Chief
Operating Reactors Branch #1
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Schwencer:

STEAM GENERATOR WATER HAMMER
SALEM GENERATING STATION
UNIT NO. 1
DOCKET NO. 50-272

In lieu of performing a test to demonstrate that a water hammer problem does not exist on Salem Unit No. 1, we have performed an investigation of the applicability of the tests conducted at the Trojan and Indian Point 2 plants. The attached table lists the comparison of Salem to Trojan and Indian Point in the areas of concern and shows that Salem is very similar to Trojan with the exception that Salem has thicker walled feedwater piping.

Indian Point No. 2 steam generator and feedwater piping, although not identical because of the unit size, is similar in the critical areas of the sparger, nozzle, and loop seals.

Based on this study and the Indian Point and Trojan test results which showed the absence of a water hammer problem, we believe that no water hammer test is required on Salem Unit No. 1. Commitments have been made on the Salem Unit No. 2 Docket (50-311) to perform a water hammer test on that unit. The test will be performed after core load and if the results show the need for design or procedural modifications, those modifications will also be made to Salem Unit No. 1.

If you should need any additional information on this subject, please feel free to contact us.

Very truly yours,

Frank P. Librizzi
General Manager -
Electric Production

Attachment



7911050347

AO12
7/1
AOB:
R. [signature]

STEAM GENERATOR COMPARISON SALEM, TROJAN AND INDIAN POINT

OCT. 30, 1979

PARAMETERS COMPARED					PSE&G SALEM - 1	PGE TROJAN	CON EDITION INDIAN POINT 2	PSE&G SALEM 2	REMARKS
Steam Generator	SG Model				51	51	44	51	
	J tube size				2"	2"	2"	2"	
	J tube numbers				35	35	35	35	
	Sparger size				10"	10"	10"	10"	
Dimensions of First horizontal run from SG wall to start of loop seal	<u>Salem 1</u>	<u>Trojan</u>	<u>IP 2</u>	<u>Salem 2</u>					Trojan, drawing no. M-102 Rev. 4 IP-2 drawing A 190541-2 Salem Isometrics No numbers
	11	A	21	21	2.656'	2.746'	-	2.656'	
	12	B	22	22	2.657'	2.746'	2.20'	2.656'	
	13	C	23	23	1.583'	2.746'	-	2.656'	
	14	D	24	24	2.656'	2.746'	-	2.656'	
Loop seal if any					Each SG configuration consists of a bend down- ward. Vertical drop of 1.75'	Each SG configuration consists of a 90° elbow downward. Vertical drop of 2.4'	Only SG 22* has a loop seal consisting of a 45° elbow. Vertical drop of 1.4'	Same as Salem 1	*SG feedwater piping which suffered hammer damage on 13 Nov. 1973
Feedwater pipe size, thickness & material	Pipe size Pipe wall & ID Pipe Materials				14" Sch. 80 0.750", 12.50" A 106 Grade C	14" Sch. 60 0.594", 12.812" A 106 Grade B	18" Sch. 80 0.938", 16.124" A 106 Grade C	14" Sch. 80 0.750", 12.50" A 106 Grade C	Allowable stresses at 650° F ANSI B31.1, 1977 A 106 Grade B - 15 KSI A 106 Grade C - 17.5 KSI
Auxiliary Feedwater	Motor Driven Pump Motor Driven Pump Turbine Driven Pump Diesel Driven Pump				440 gpm 440 gpm 880 gpm -	- - 880 gpm* 880 gpm*	400 gpm 400 gpm 800 gpm -	440 gpm 440 gpm 880 gpm -	*Presently adding one 100% motor driven pump
Water Hammer test if any done					Not Done	Done with "J" tube and loop seal installation with ring header drain time of 1 minute to 30 minutes with one test after 120 minutes.	Done with "J" tube installation and loop seal installation of SG 22 ring header. Drain time used is 10 minutes.	PSE&G has committed to conduct a test.	
SG rate of rise restriction imposed at present					Rate of SG level rise should be less than 1.2" per minute.	None	Limit Aux. Feed Flow to 150 gpm if AF Flow is not initiated within 5 minutes after loss of Feedwater.	N/A	
References					-	PGE submit#4s to NRC dated Aug. 6, 75, Oct. 21, 75 & July 12, 75	IP-2 submit#4s to NRC dated Aug 30, 74. NRC review of results dated July 79.	-	