REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8012150230 DOC. DATE: 80/12/09 NOTARIZED: NO DOCKET #
FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
AUTH. NAME AUTHOR AFFILIATION
UHRIG, R. E. Florida Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION
CLARK, R. A. Operating Reactors Branch 3

SUBJECT: Provides results of containment valve torque & stress analysis completed by Henry Pratt, Co, valve manufacturer. Containment purge valves operable under DBA-LOCA conditions. Forwards completion of containment purging justification.

DISTRIBUTION CODE: A034S COPIES RECEIVED: LTR 3 ENCL 3 SIZE: 3
TITLE: Containment Purging

NOTES:

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
ACTION:	CLARK, R.	04	7	7				
INTERNAL:	A/D CORE & CS		1	0	CONT SYS BR	12	1	1
	EFF TR SYS BR	08	1	1	EQUIP QUAL BR	09	1	1
	I&E	06	2	2	NRC PDR	02	1	1
	OR ASSESS BR	10	1	1	RAD ASSESS BR	11	1	1
	REEVES, E.	14	1	1	REG FILE	01	1	1
	SHUM, D.	15	1	1				
EXTERNAL:	ACRS	13	16	16	LPDR	03	1	1
	NSIC	05	1	1				

DEC 16 1980

MA 4

TOTAL NUMBER OF COPIES REQUIRED: LTTR 37 ENCL 36

[illegible] valve [illegible] 2 [illegible]
and [illegible] measurements
[illegible] IA-4 in condition.
[illegible] purging [illegible] direction.

[illegible] GROL [illegible] E.I.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				GROL	[illegible]

P.O. BOX 529100 MIAMI, FL 33152

FLORIDA POWER & LIGHT COMPANY

December 9, 1980
L-80-399

Office of Nuclear Reactor Regulation
Attention: Mr. Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Clark:

Re: St. Lucie Unit #1
Docket No. 50-335
Containment Purge

A containment purge valve torque and stress analysis has been completed by Henry Pratt Company, the valve manufacturer. Based on the conservative analysis, the containment purge valves are adequate and operable under DBA-LOCA conditions when the valve disc opening angle is limited to 50 degrees. A modification to limit the valve disc opening angle to 50 degrees has been completed on all six purge valves at St. Lucie Unit 1.

The information in Attachment 1 is also being submitted to close out an NRC information request of November 5, 1979.

With this submittal Florida Power & Light Company has provided all the information and evaluations requested to justify containment purging during normal operation. The effect of purging on ECCS performance, the evaluation of instrumentation and control circuit design, and the valves' integrity against the dynamic forces of a DBA-LOCA have been presented.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/MAS/ras

cc: J. P. O'Reilly, Region II
Harold F. Reis, Esquire

A034
S
3/3

8012150233

A

PEOPLE... SERVING PEOPLE

ATTACHMENT 1

RESPONSE TO ADDITIONAL NRC QUESTIONS
RELATING TO CONTAINMENT PURGE VALVES

1a. Failure of the containment purge system to isolate the containment due to entrained debris in the exhausting fluid (air and steam) is highly unlikely. The two potential types of material which can be postulated to prevent the closure of the purge system isolation valves are low and high density material.

In order for low density material of sufficient size to prevent the isolation of the system, the material would have to travel in a straight path from opposite the valve inlet. In the case of the air supply valve, the valve inlet faces the secondary shield wall and a valve gallery wall. For the air exhaust valve, flow to the valve inlet is through the containment cooling system ring duct header. Debris traveling in these paths is not considered credible.

High density materials (missiles) could be generated by a postulated accident, such as, DBA-LOCA. For these missiles, the primary and secondary shield walls are designed to provide missile shields to contain any missiles generated within the primary coolant system and prevent these inpinging upon the steel containment vessel. Both supply and exhaust valves are located against the steel containment vessel.

In conclusion, there are adequate provisions to preclude the failure of the containment purge isolation valves to close due to entrained debris in the fluid stream.

1b. The isolation function of the containment purge valves is tested in accordance with Technical Specification 4.6.3.1.2. They are demonstrated operable during the cold shutdown or refueling mode at least once per 18 months by (a) verifying that on a containment isolation test signal, each valve actuates to close and (b) cycling the valves through one complete cycle of full travel and measuring its isolation time.

The leakage rate of the containment purge valves is tested in accordance with Technical Specification 4.6.1.2. In conformance with the criteria of Appendix J, 10 CFR 50 using the methods and provisions of ANSI N45.4-1972, the valves are given local leak detection tests at not less than 39.6 psig at intervals no greater than 24 months. The stated acceptance criteria is that the sum of all local leak rate tests shall not exceed 60 percent of the total containment allowable leak rate.

1c. The total release through the containment purge system assuming initially fully open valves, single valve failure, and Tech Spec closure time was reported via our letter to you of December 13, 1979(L-79-347). The air mass loss from containment was calculated to be 5104 pounds.

1d. No safety related equipment is located in the flow stream beyond the outboard valves at the supply or exhaust penetrations.

1e. The containment purge valves were initially tested by the manufacturer for leakage at the valve's design pressure. The installed valves are tested as indicated in 1b above to insure isolation integrity as required by our Technical Specifications.