REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8711030429 DOC. DATE: 87/10/30 NOTARIZED: NO DOCKET #
FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
AUTH. NAME AUTHOR AFFILIATION
ZIMMERMAN, S. R. Carolina Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Submits suppl to in-service pump & valve testing program per 10CFR50.55a(g)(5) & requests that expedited relief from ASME code quarterly testing frequency of valves in RCS high point vent sys be granted by 871113.

DISTRIBUTION CODE: A047D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4
TITLE: OR Submittal: Inservice Inspection/Testing

NOTES: Application for permit renewal filed. 05000400

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-1 LA	1	0	PD2-1 PD	5	5
	BUCKLEY, B	1	1			
INTERNAL:	AEOD/DOA	1	1	AEOD/DSP/TPAB	1	1
	ARM/DAF/LFMB	1	0	NRR/DEST/MEB	1	1
	NRR/DEST/MTB	1	1	NRR/PMAS/ILRB	1	1
	OGC/HDS1	1	0	REG FILE 01	1	1
	RES/DE/EIB	1	1			
EXTERNAL:	LPDR	1	1	NRC PDR	1	1
	NSIC	1	1			

TOTAL NUMBER OF COPIES REQUIRED: LTTR 19 ENCL 16

CP&L
Carolina Power & Light Company

OCT 30 1987

SERIAL: NLS-87-234

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
IN-SERVICE PUMP AND VALVE TESTING (IST) PROGRAM

Gentlemen:

Carolina Power & Light Company (CP&L) hereby submits a supplement to the SHNPP IST program in accordance with 10CFR50.55a(g)(5) and requests that expedited relief be granted on the enclosed relief request by November 13, 1987.

Carolina Power & Light Company is requesting relief from the ASME code quarterly testing frequency of valves in the Reactor Coolant System (RCS) High Point Vent System. These vents are required by NUREG-0737, "Clarification of TMI Action Plan Requirements, Item II.B.1." As required by NUREG 0737, these valves provide a means to vent noncondensible gases from the RCS which may inhibit core cooling during natural circulation. The scenarios for which these valves would be used are beyond the design basis of the plant. Use of these valves is covered by emergency operating procedures as required by NUREG-0737. Also, as required by NUREG-0737, the vents must not lead to an unacceptable increase in the probability of a loss-of-coolant accident and must be designed to ensure a low probability of inadvertent or irreversible actuation. The SHNPP design (refer to attached Figure) consists of six solenoid-actuated, pilot-operated valves. The valves are normally closed and provide a double RCS barrier. The valves vent to the containment or the Pressurize Relief Tank (PRT). The only routine use of the valves occurs during fill and vent of the RCS.

These valves were originally the subject of relief request RV-2 in Revision 1 of the IST program submitted on January 21, 1986. The staff, in a letter dated June 10, 1986, requested additional justification for the relief request. Because of a perceived schedular impact, CP&L chose not to pursue this relief request over others of greater priority. However, there were and still are safety and operational reasons for not testing these valves at system pressure (i.e., Modes 1-4). Therefore, CP&L is reinitiating this relief request.

Technical Specification 3.4.11 requires that one vent path from the reactor pressure vessel head and one vent path from the pressurizer be operable and closed during operation. Technical Specification 4.4.11.2.a requires testing of the vent valves every 18 months. The In-service Testing program required by Technical Specification 4.0.5 requires testing of these valves quarterly. Testing of the valves with the RCS pressurized

411 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

A047
1/1

could result in a limited but uncontrolled blowdown should the associated upstream or downstream valve fail, inadvertently open, or experience excessive leakage during testing. The result would be a loss of RCS inventory to the pressurizer relief tank or containment atmosphere in excess of Technical Specification 3.4.6.2.d limits, possibly resulting in unit shutdown.

Testing at power; i.e., with the RCS pressurized, has demonstrated that a scenario exists by which the block valves can be forced open during testing of the upstream vent valve(s). This is due to a combination of valve test sequencing, timing, and the particular characteristics of the valves' fluid assisted operation.

This scenario has been addressed by an orientation change of the block valves and changes in the test procedure. These changes will improve the reliability of these valves by: 1) reducing the time necessary to fully reseat the valve discs and 2) by not challenging the valves before the discs are fully reseated.

Given that these valves are not assumed to operate in design basis accidents and the potential consequences of testing them at full system pressure, testing of these valves at power is contrary to both the goal of maintaining double isolation of the RCS and the NUREG-0737 requirement to ensure a low probability of inadvertent or irreversible actuation of the valves. For the above reasons, testing these valves in Modes 1-4 is impractical and, therefore, CP&L requests relief in the form of refueling frequency testing of these vent valves.

Carolina Power & Light Company will request under a separate letter that the quarterly testing of the block valves be deleted from the Technical Specification 4.4.11.1.

If you have any questions please contact Steven D. Chaplin at (919) 836-6623.

Yours very truly,

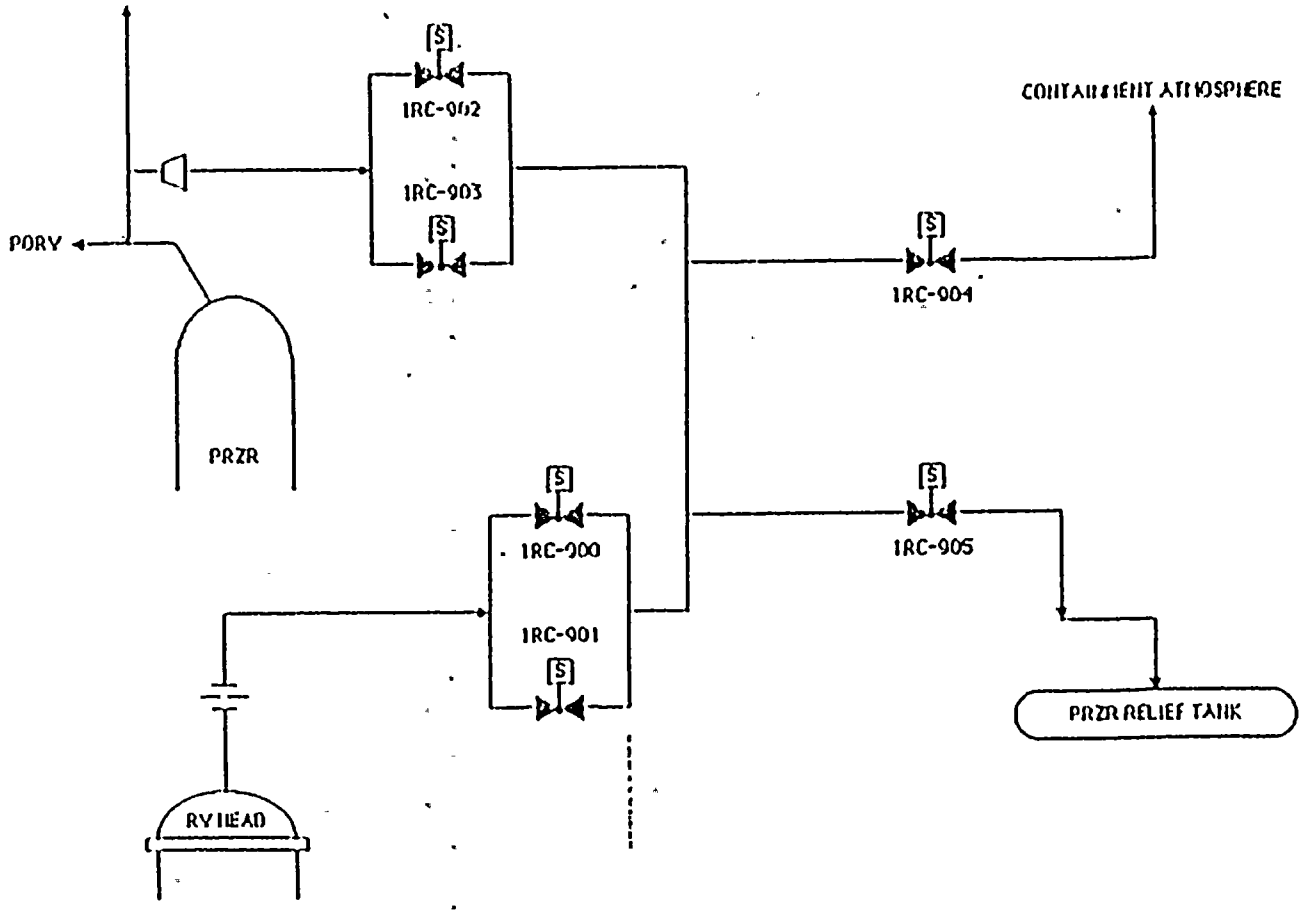
S. R. Zimmerman
Manager
Nuclear Licensing Section

SDC/mss (5319SDC)

Attachment

cc: Mr. B. C. Buckley
Dr. J. Nelson Grace
Mr. G. F. Maxwell

Relief Request:	RV-2
Valves:	IRC-900, 901, 902, 903, 904, 905
Category:	B
Class:	2
Function:	RCS Vent Valves
Test Requirement:	Exercise valve for operability, observe proper operation of fail-safe actuator and measure stroke time quarterly.
Basis for Relief:	Valves are RCS High Point Vent Valves, which were installed in response to NUREG 0737, Item II.B.1 and are designed only to vent noncondensible gas produced by a "beyond design basis accident" from the RCS. These valves are only routinely used during cold shutdown to provide a path for normal RCS venting prior to heatup. Technical Specification 3.4.11 requires that one vent path from the reactor pressure vessel head and one vent path from the pressurizer be operable and closed during operation. Technical Specifications requires testing of the vent valves every 18 months. Testing of the valves during power operations could result in a limited but uncontrolled blowdown should the associated upstream or downstream valve fail, inadvertently open, or experience excessive leakage. The result would be a loss of RCS inventory to the pressurizer relief tank or containment atmosphere in excess of Technical Specification 3.4.6.2.d limits, possibly resulting in unit shutdown.
Alternate Test:	Exercise valve for operability, observe proper operation of fail-safe actuators, and measure stroke time with the RCS depressurized during a refueling.


1RC-902
1RC-903
PORV
PRZR
CONTAINMENT ATMOSPHERE
1RC-904
1RC-900
1RC-901
1RC-905
PRZR RELIEF TANK
RV HEAD