REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8006090326 DOC.DATE: 80/06/02 NOTARIZED: NO DOCKET #
FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
AUTH.NAME AUTHOR AFFILIATION
WHITE,L.D. Rochester Gas & Electric Corp.
RECIP.NAME RECIPIENT AFFILIATION
Office of Nuclear Reactor Regulation
CRUTCHFIELD,D. Operating Reactors Branch 5

SUBJECT: Submits verification of compliance w/short-term Lessons Learned Task Force requirements re RCS venting. Provisions made for venting reactor vessel head & pressurizer & for sweeping noncondensible gases from steam generator U tubes.

DISTRIBUTION CODE: A042S COPIES RECEIVED:LTR 1 ENCL Ø SIZE: 4
TITLE: Resp to Lesson Learn Task Force - Comb Eng & 50-267

NOTES: 1 cy: EADENSAM, D. ALLISON

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
ACTION:	08 BC ORB #2	7				
INTERNAL:	01 REG FILE	1		02 NRC PDR	1	
	05 NELSON,C.	2	2	06 ANDERSON,C.	1	
	07 CWALINA,G.	1		15 I & E	2	2
	18 CORE PERF BR	1		19 ENG BR	1	1
	20 REAC SFTY BR	1		21 PLANT SYS BR	1	1
	22 EEB	1		23 EFLT TRT SYS	1	1
	IMBRO,G.	1		OELD	1	0
	TELFORD,J.T.	2	2			
EXTERNAL:	03 LPDR	1		04 NSIC	1	1
	24 ACRS	16	16			

JUN 16 1980

TOTAL NUMBER OF COPIES REQUIRED: LTTR ~~43~~ 45 ENCL Ø

ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649

LEON D. WHITE, JR.
VICE PRESIDENT

TELEPHONE
AREA CODE 716 546-2700

June 2, 1980

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis M. Crutchfield, Chief
Operating Projects Branch #5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Short Term Lessons Learned, Reactor Coolant System Venting
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Crutchfield:

Item 2.1.9 of the Short Term Lessons Learned required that a reactor coolant system high point vent system be installed on all reactors. Specific requirements for the system were detailed in Harold Denton's letter of October 30, 1979. RG&E supplied details of the system the company planned to install on December 28, 1979 and requested approval from the NRC of those plans. In a letter dated February 29, 1980 Dennis Ziemann stated that our proposal appeared to fulfill the requirements and found the system acceptable provided that we verified that the system satisfied certain requirements. The purpose of this letter is to verify compliance with the requirements and to confirm conversations we have had with the NRC staff in the intervening period.

Eleven design considerations for PWR's were established in the October 30, 1979 letter. We comply with the design requirements as follows:

1. Provisions have been made for venting the reactor vessel head and the pressurizer and for sweeping non-condensible gasses from the steam generator U-tubes. The reactor vessel head vent system (RVHVS) is capable of venting the reactor head, the entire lengths of the hot legs and the cold legs. The cold legs communicate with the head region through small openings designed to distribute cold leg water to the upper portion of the vessel. Gases can be swept from the steam generator tubes by starting a reactor coolant pump(s) for brief periods of time. Specific procedures will be implemented by January 1, 1981. The pressurizer is vented through the PORV's which are normally operated

A042
S1/10

by a nonseismic air system. In the event of loss of instrument air, or on containment isolation which results in isolation of the air system, a seismically qualified nitrogen system is used for motive power. Additional information was supplied in our December 28, 1979 letter.

2. The RVHVS has been sized to relieve a quantity of gas equal to at least one-half the reactor coolant system volume in one hour.

3. The RVHVS pipes have been orificed to a size smaller than that corresponding to the definition of a LOCA. In addition, even though two charging pumps could make up the loss from an open vent, two vent valves in series have been provided in each of the two vent lines to provide a redundant means of stopping flow.

4. The position of each of the four RVHVS vent valves is indicated in the control room.

5. The RVHVS is remotely operable from the control room.

6. The RVHVS is seismically qualified.

7. As a minimum, the RVHVS meets the same qualifications which were accepted for the reactor protection system when the plant was licensed. Except for some piping analysis which is done to ANSI B 31.1 criteria, the RVHVS meets current day safety grade standards. Redundant series valves have been provided on both vent paths. Each vent path is powered from separate emergency busses.

8. No block valves are required because of the restrictions in the vent paths. Nevertheless, redundant qualified series valves are provided in each vent path.

9. The probability of an inadvertent opening of a vent has been reduced by providing two series valves, both normally closed, in each vent path. Power will also be removed from the fail-closed solenoid valves during power operation.

10. The RVHVS piping discharges into the refueling cavity, an open area of the containment which will provide for good mixing and cooling of the vented gas.

11. The inadvertent opening of a vent path has been reduced in probability as discussed in 9 above. Leakage detection is provided in accordance with Technical Specification

3.1.5. In addition, redundant sump level instruments have been installed in the normal containment sump and will be operational by January 1, 1981.

Dennis Ziemann's February 29 letter also requested results of analyses for (1) loss of coolant accidents initiated by a break in the vent pipe and (2) venting noncondensible gases with perhaps high hydrogen content into containment. Discussions with the staff have indicated that the LOCA analysis concern is that the analyses be performed using methodology which meets Appendix K to 10 CFR Part 50 requirements.

Westinghouse has performed numerous small break LOCA analyses and documented the results in WCAP 9600. The sizes of the breaks analyzed ranged from less than 3/8 inch equivalent diameter to greater than 2 inches equivalent diameter and enveloped the break size which would result from guillotine rupture of the 3/4 inch pipe to which the RVHVS vent valves are attached. The models used in these analyses, and referenced in Section 1.0, of WCAP 9600, are the Westinghouse small break models which meet the requirements of Appendix K. They are described in WCAP 8261, Revision 1, "WFLASH - A FORTRAN-IV Computer Program for Simulation of Transients in a Multi-Loop PWR" and WCAP 8970, "Westinghouse Emergency Core Cooling System Small Break October 1975 Model". We realize that the staff may ask for refinements to these models in the future but revisions to the models may take place during an extended period of development and review. The current models remain appropriate for these analyses. Analysis assumptions which were used are also in conformance with Appendix K criteria as described in Section 3.1 of WCAP 9600. Mr. Chris Nelson of the NRC staff discussed these models and assumptions with Paul Wilkens of RG&E and it was agreed that they were acceptable.

Results of the WCAP 9600 analyses show that a 3/4 inch cold leg break is more severe than a hot leg break, a break which would be similar to a RVHVS break. Breaks less than 1 inch diameter will result in stable reactor coolant system pressures above the steam generator safety valve pressure for removal of decay heat. Further, the core will remain covered. Therefore, conditions which result from a break in the RVHVS will meet the LOCA acceptance criteria of 10 CFR 50.46.

The hydrogen concentration in containment can be adequately controlled when venting noncondensible gases with potentially high hydrogen concentrations. The RVHVS has been orificed so that even if the vented gas is pure hydrogen the containment hydrogen concentration will increase by no more than 0.4% per minute. The venting process will require direct operator action and will be closely controlled. No controls have been installed with the RVHVS to automatically initiate venting. Administrative

controls to limit the venting period time will be established to assure that the hydrogen concentration in containment is maintained at acceptable levels. Sampling procedures have been implemented to determine containment hydrogen concentrations under accident conditions. Containment hydrogen monitors will also be installed by January 1, 1981 to give a continuous indication of containment hydrogen concentration in the control room. Therefore, administrative controls will be effective in limiting the hydrogen concentrations in containment and no further analyses are required.

This letter is intended to demonstrate compliance with all the requirements of Short Term Lessons Learned item 2.1.9, Reactor Coolant System Venting. If any question remains unanswered please contact us as soon as possible.

Sincerely yours,

L.D. White, Jr.

LDW:rb