REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8205110421 DOC.DATE: 82/05/07 NOTARIZED: NO DOCKET #
FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
AUTH.NAME AUTHOR AFFILIATION
MAIER,J.E. Rochester Gas & Electric Corp.
RECIP.NAME RECIPIENT AFFILIATION
CRUTCHFIELD,D. Operating Reactors Branch 5

SUBJECT: Forwards addl info requested in NRC 820225 ltr to complete review of util response to TMI Action Plan Item II.B.1, "RCS Vents." One oversize drawing encl. Aperture card is available in PDR.

SEE Rcpts.

DISTRIBUTION CODE: A046S COPIES RECEIVED:LTR 1 ENCL 5 SIZE: 6+53
TITLE: Response to NUREG-0737/NUREG-0660 TMI Action Plan Rqmts (OL's)

NOTES:NRR/DL/SEP 1cy. 05000244

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
	ORB #5 BC	01	7	7				
INTERNAL:	ELD		1	0	IE/DEP DIR	33	1	1
	IE/DEP EPDS		1	1	IE/DEP/EPLB		3	3
	NRR/DE DIR	21	1	1	NRR/DE/ADCSE	22	1	1
	NRR/DE/ADMQE	23	1	1	NRR/DE/ADSA	17	1	1
	NRR/DHFS DIR	28	1	1	NRR/DHFS/DEPY	29	1	1
	NRR/DL DIR	14	1	1	NRR/DL/ADL	16	1	1
	NRR/DL/ADOR	15	1	1	NRR/DL/ORAB	18	3	3
	NRR/DSI ADRS	27	1	1	NRR/DSI DIR	24	1	1
	NRR/DSI/ADPS	25	1	1	NRR/DSI/ADRP	26	1	1
	NRR/DSI/AEB		1	1	NRR/DSI/ETSB		1	1
	NRR/DSI/RAB		1	1	NRR/DST DIR	30	1	1
	NRR/DST/ADGP	31	1	1	NRR/DST/ADT	32	1	1
	REG FILE	04	1	1	RGN1		1	1
EXTERNAL:	ACRS	34	10	10	FEMA-REP DIV		1	1
	INPO,J.STARNES		1	1	LPDR	03	1	1
	NRC PDR	02	1	1	NSIC	05	1	1
	NTIS		1	1				

4 sets of DRWGS. Advanced To: PM

54 53

TOTAL NUMBER OF COPIES REQUIRED: LTTR ~~53~~ ENCL ~~52~~

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

JOHN E. MAIER
Vice President

TELEPHONE
AREA CODE 716 546-2700

May 7, 1982

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Reactor Coolant System Vents (TMI Item II.B.1)
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Crutchfield:

Your letter dated February 25, 1982 requested additional information to enable you to complete your review of our reactor coolant system vents. The additional information is contained in Attachment A to this letter.

Your letter also noted that you were reviewing the proposed operating guidelines for RCS vent usage, stating that specific plant procedures will be reviewed against the guidelines as needed in the future. We have previously submitted our procedure which describes how to use the RCS head vents. Our intent is to develop specific vent procedures, which address when to use the vents, concurrent with the work required by TMI Item I.C.1 to develop improved emergency procedures. The time required for procedure development by the Westinghouse Owners Group and RGE will extend well into next year. As a result, Ginna RCS vent procedures will not be complete at the end of the 1982 refueling outage as we have previously indicated.

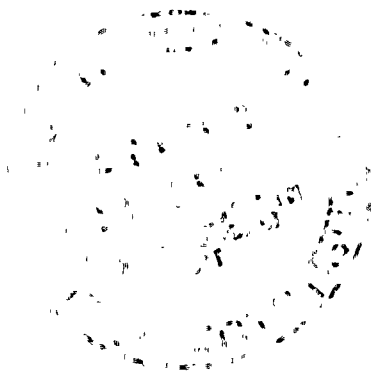
Very truly yours,

John E. Maier

John E. Maier

Attachment

A046
S/S
4 Sets of Drawings Advanced to: PM



ATTACHMENT A

ADDITIONAL INFORMATION
GINNA RCS VENTS

1. Verify that the reactor coolant system (RCS) head vent flow restriction orifices are smaller than the size corresponding to the definition of a loss-of-coolant accident (10 CFR Part 50, Appendix A) by providing the pertinent design parameters of the reactor coolant makeup system and a calculation of the maximum rate of loss of reactor coolant through the RCS head vent orifices (references NUREG-0737 Item II.B.1 Clarification A.(4)).

RESPONSE:

In a letter from L. D. White, Jr. to Mr. Dennis M. Crutchfield, USNRC, dated June 2, 1980, RGE verified that the RCS head vent flow restriction orifices (0.25 inch) are smaller than the size corresponding to the definition of a loss of coolant accident. The pertinent design parameters of our reactor coolant makeup system are found in section 9.2 of the Ginna FSAR. Engineering calculation sheets demonstrating that the charging pumps can maintain reactor coolant system inventory with a rupture downstream of the orifices are available for inspection in our files. It is noted also, that as described in our June 2, 1980 letter, two series valves have been provided in each vent path so that flow through the vents need not be restricted to less than the flow which is defined as a LOCA.

2. The following items apply to the portions of the RCS head vent that form a part of the reactor coolant pressure boundary, up to and including the second normally closed valve (reference NUREG-0737 Item II.B.1 Clarification A.(7)):

   a. Provide the design temperature and pressure of the piping.

   b. Verify that the piping, valves, components, and supports are classified Seismic Category I.

   c. Describe the materials of construction and verify that they are compatible with the reactor coolant chemistry and will be fabricated and tested in accordance with SRP Section 5.2.3, "Reactor Coolant Pressure Boundary Materials."

RESPONSE:

a. The design temperature and pressure of the piping is 650°F and 2500 psia. Additional design information on the piping, valves and supports was provided in a letter from L. D. White, Jr. to Mr. Dennis Ziemann, USNRC, dated December 28, 1979.

b. As noted in the December 28, 1979 letter, new piping added between the previously existing piping and the orifices is ASME Section III Class 1 and the system beyond the orifices to the second vent valve is ASME

Section III Class 2. The previously existing piping was designed to ANSI B31.1. During the addition of the head vent system, all of the piping, including that previously existing, was analyzed in accordance with ASME Section III, Subsections NB and NC and supported in accordance with Subsection NF. The valves were specified to meet ASME Section III Class 2 requirements as shown in the December 28, 1979 letter. The system is classified seismic category 1 as indicated in the June 2, 1980 letter.

c. The materials used in the head vent system are stainless steel and are compatible with the reactor coolant chemistry. Specific material requirements are given in enclosed specification 37276-1300-00-78, Revision 0. Fabrication and testing of the head vent system was done in accordance with ASME Section III, Subsections NB, NC and NF and in accordance with enclosed specifications 36720-1300-76, Revision 2; 3670-1300-77, Revision 2 and 37276-1300-00-81, Revision 0.

3. Verify that the following RCS head vent failures have been analyzed and found not to prevent the essential operation of safety-related systems required for safe reactor shutdown or mitigation of the consequences of a design basis accident:

   a. Seismic failure of RCS head vent components that are not designed to withstand the safe shutdown earthquake.

   b. Postulated missiles generated by failure of RCS head vent components.

   c. Fluid sprays from RCS head vent component failures. Sprays from normally unpressurized portions of the RCS head vent that are Seismic Category I and Safety Class 1, 2, or 3 and have instrumenation for detection of leakage from upstream isolation valves need not be considered.

RESPONSE:

a. The entire head vent system is Seismic Category I.

b. The only postulated missile associated with the head vent system is that of a solenoid valve stem ejection. The occurrence of this event is precluded by the mechanical design of the solenoid valves. Therefore, the essential operation of safety related systems required for safe shutdown or mitigation of the consequences of a design basis accident will not be prevented.

c. None of the piping in the head vent system is greater than 1 inch nominal diameter and, in accordance with Branch Technical Position MEB 3-1, no piping failures require analysis for jet impingement or pipe whip effects.

4. Verify that the RCS head vent path to the refueling cavity does not discharge into areas in which any nearby structures, systems, and components essential to safe shutdown of the reactor or mitigation of a design basis accident are (sic) capable of withstanding the effects of the anticipated mixtures of steam, liquid, and noncondensible gas discharging from the RCS head vents.

RESPONSE:

The head vent path to the refueling cavity is shown on enclosed drawing A-13651 Revision 2. No active components of equipment essential to safe shutdown or accident migitation which must withstand harsh environmental conditions are located in the refueling cavity with the head vent system.

5. Verify that operability testing of the PORVs and motor-operated block valves will be performed in accordance with subsection IWV of Section XI of the ASME Code for Category B valves (reference NUREG-0737 Item II.B.1 Clarification A.(11)).

RESPONSE:

Operability testing of the PORVs and motor operated block valves is specified in the Ginna Inservice Pump and Valve Testing Program approved by the NRC in a Safety Evaluation Report sent to RGE by Mr. Dennis M. Crutchfield with a letter dated May 26, 1981. Testing is in accordance with ASME Section XI requirements.

6. Since your submittal states that the power operated relief valves will be used as the required pressurizer vent, verify that a positive indication of the block valve positions will be provided in the control room (reference NUREG-0737 Item II.B.1 Clarification A.(5)).

RESPONSE:

A letter from L. D. White, Jr. to Mr. Dennis Ziemann, USNRC, dated October 17, 1979 described the position indication of the block valves in the control room.

7. Submit operating guidelines for use of the PORV to vent the pressurizer similar to those submitted for the RCS head vents, including the following:

   a. Guidelines to determine when the operator should and should not manually initiate venting from the pressurizer, and information and instrumentation required for this determination (reference NUREG-0737 Item II.B.1 Clarification A.(2)). The guidelines to determine whether or not to vent should cover a variety of reactor coolant system conditions (e.g., pressures and temperatures). The effect of the containment hydrogen concentration on the decision to vent or to continue venting should also be addressed considering the balance between the need for increased core cooling and decreased containment integrity due to elevated hydrogen levels.

   b. Methods for determining the size of a noncondensible gas bubble in the pressurizer (reference Position (2) and Clarification A.(2)).

c. Guidelines for operator use of the pressurizer vents, including information and instrumentation available to the operator for initiating or terminating vent usage (reference Position (2)).

d. Required operator actions in the event of inadvertent opening, or failure to close after opening, of the PORVs including a description of the provisions and instrumentation necessary to detect and correct these fault conditions (reference Position (2) and Clarification A.(2)).

RESPONSE:

Guidelines for use of the PORV to vent the pressurizer of noncondensible gases have not been completed. Revised emergency procedures which will address, among other things, venting of noncondensibles are being developed in conjunction with the Westinghouse Owners Group effort for TMI item I.C.1. Completion of this procedure work is not expected prior to July 1983. Methods for determining the size of a noncondensible gas bubble in the RCS, including the pressurizer, have been given in the guidelines submitted with the July 1, 1981 letter. Instrumentation to measure containment hydrogen concentration is being installed during our current outage and will be used in decision making for RCS venting. Instrumentation available in the control room to detect inadvertent opening of the PORV, or failure to close after opening, includes valve position indication; discharge tailpipe temperature; pressurizer relief tank temperature, pressure and level; and pressurizer pressure and level. An operator's ability to quickly respond to a failed open PORV by closing the PORV block valve has been demonstrated and is described in a report submitted with a letter from John E. Maier to Mr. Dennis M. Crutchfield, USNRC, dated April 13, 1982.

8. Your submittal of June 2, 1980 stated that gases can be swept from the steam generator tubes by starting a reactor coolant pump(s) for brief periods of time. Provide operating guidelines for this procedure including:

a. Methods and instrumentation for detection of gases in the U-tubes.

b. Guidelines for the determination of when to start and when not to start the reactor coolant pumps, including the status of necessary supporting systems (e.g., seal water injection and component cooling water systems).

c. Guidelines for operator use of the reactor coolant pumps to sweep the U-tubes, including methods for determination of pumping duration and criteria for the decision to terminate the reactor coolant pump sweeping procedure (reference NUREG-0737 Item II.B.1 Clarification C.(2)).

RESPONSE:

Methods for determining the size of a noncondensible gas bubble in the RCS, including the steam generator, have been given in the guidelines submitted with the July 1, 1981 letter. An

important consideration in determining the need for sweeping noncondensibles from the steam generators will be the existence of natural circulation or other means of core cooling. Guidelines for starting reactor coolant pumps already exist in our current operating procedures. These guidelines may be modified for use of the reactor coolant pumps in sweeping gases from the steam generator to consider the safety significance of removing the gases. These guidelines and guidelines for duration of operation and termination of the reactor coolant pumps will not be completed until July 1983 as explained in 7 above.

9. Verify that all displays (including alarms) and controls, added to the control room as a result of the TMI Action Plan requirement for reactor coolant system vents, have been or will be considered in the human factors analysis required by NUREG-0737 Item I.D.1, "Control-Room Design Reviews."

RESPONSE:

All displays added to the control room as a result of the TMI Action Plan requirement for reactor coolant system vents will be considered in the human factors analysis required by NUREG-0737 Items I.D.1, "Control Room Design Review."