



Burns and Roe, Inc.

601 Williams Blvd. ■ Richland, Washington 99352 ■ Tel. (509) 943-8200

82-721-000

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1982 OCT 29 AM 10:04

REGION V ICE

Subject: Work Order 3900-4000
Washington Public Power Supply System
WNP-2
10CFR21 Reportable Condition #82-11
RHR Relief Valve Vent
Responds to: NA

October 27, 1982
BRGO-RO-82-011
Response Required: NA

U.S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94956

Attention: Mr. R.H. Engelken

Gentlemen:

This letter is to report to you a condition we have deemed reportable under 10CFR21. This was discussed with John Elin of your staff on October 22, 1982.

The concern is that given the single failure of an isolation valve post-LOCA, we have a direct path for fission products to go from the wetwell to the reactor building, bypassing containment. This results in a leakage rate which is unacceptably high. Complete details are contained in the attached evaluation.

If you have any questions, please contact A.T. Luksic at (509) 943-8243.

Very truly yours,

W.G. Conn
Senior Group Supervisor

WGC:ATL:lvs

Attachment

cc: B.A. Holmberg, SS w/a
T.G. Tellefson, SS w/a
R.T. Johnson, SS w/a
L.C. Floyd, SS w/a
E. LeBlanc, Bechtel w/a
R.M. Nelson, SS w/a

RHR Relief Valve Vent (82-11)

Description of Defect

There are four (4) RHR relief valves which have a 2" \varnothing vent hole on the valve body. The valves are RHR-V-55A, RHR-V-95A, RHR-V-55B and RHR-V-95B. These valves are situated such that the failure of a single motor operated valve, RCIC-V-113, would allow an open leakage path from the wetwell (primary containment) directly to the reactor building (secondary containment).

The attached sketch illustrates the situation. Containment penetration X-116 is an open path into the wetwell's gaseous volume. In the steam condensing mode, RHR-V-55A (or B) and RHR-V-95A (or B) protect the RHR heat exchanger from over-pressurization. In order to accommodate condensation in the line between these valves and containment, a vacuum breaker has been installed. That consists of penetration X-116, RCIC-V-113, RHR-V-102, RHR-V-101A (or B), RHR-V-103A (or B), and RHR-V-179A (or B).

All of these valves are normally open. Upon a containment isolation signal, the only valve to close would be RCIC-V-113. If it failed to close, and a LOCA had occurred, the wetwell would pressurize, and the wetwell atmosphere would vent down this path. Details of the RHR relief valves show that a flow path exists which would allow the wetwell atmosphere to vent directly to secondary containment.

Date and Method of Discovery

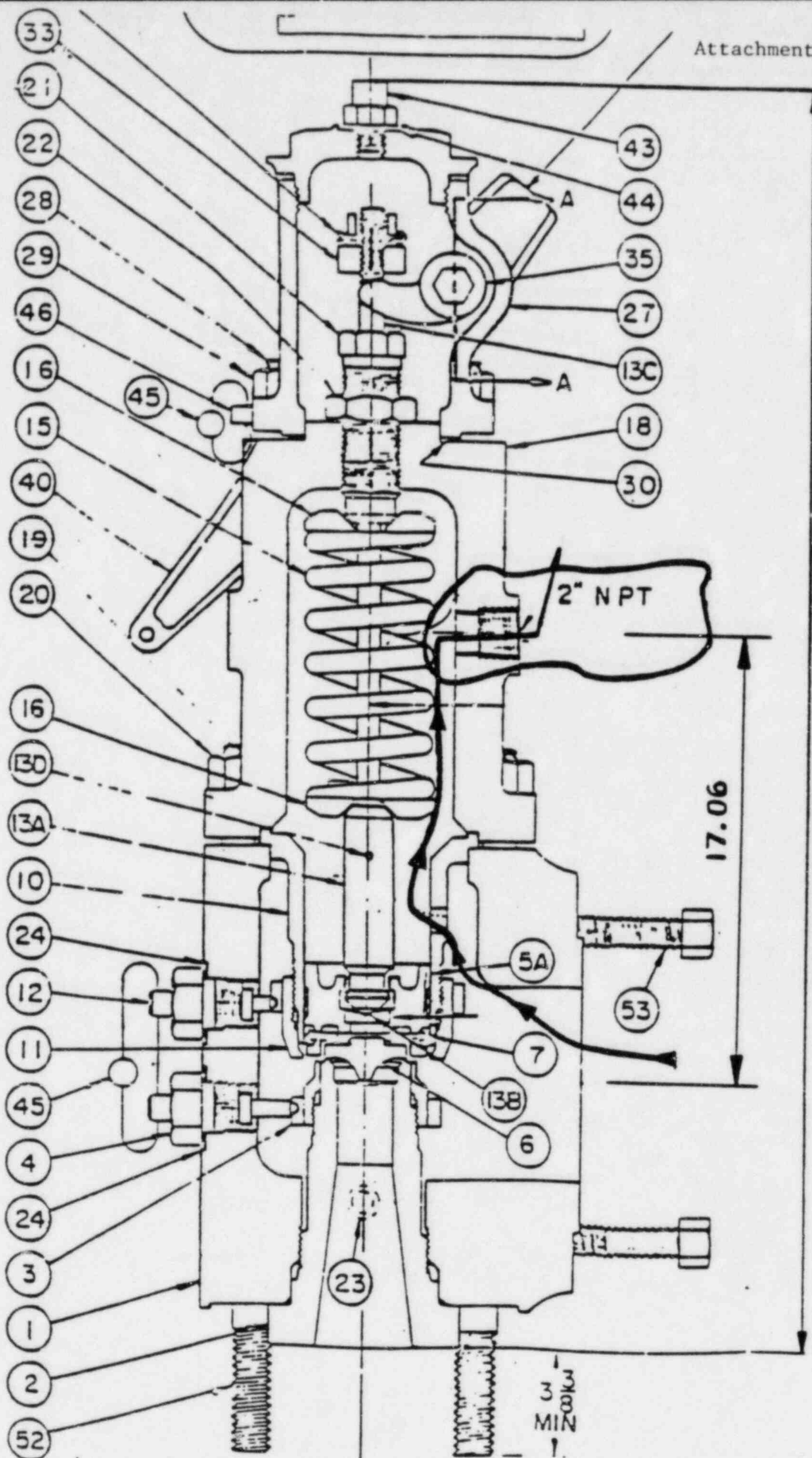
The potential deficiency was noted during a review of a Request For Information (RFI-C0500-M-00740) at the WNP-2 site on 9/15/1982.

Analysis of Safety Significance

B&R has estimated the gaseous release from these four paths at 5.2×10^4 scfm during the first 450 sec after a LOCA and at a rate of 4.9×10^3 scfm thereafter. This can be compared to the allowable release rate for primary containment of approximately 1.7 scfm.

Corrective Action Proposed

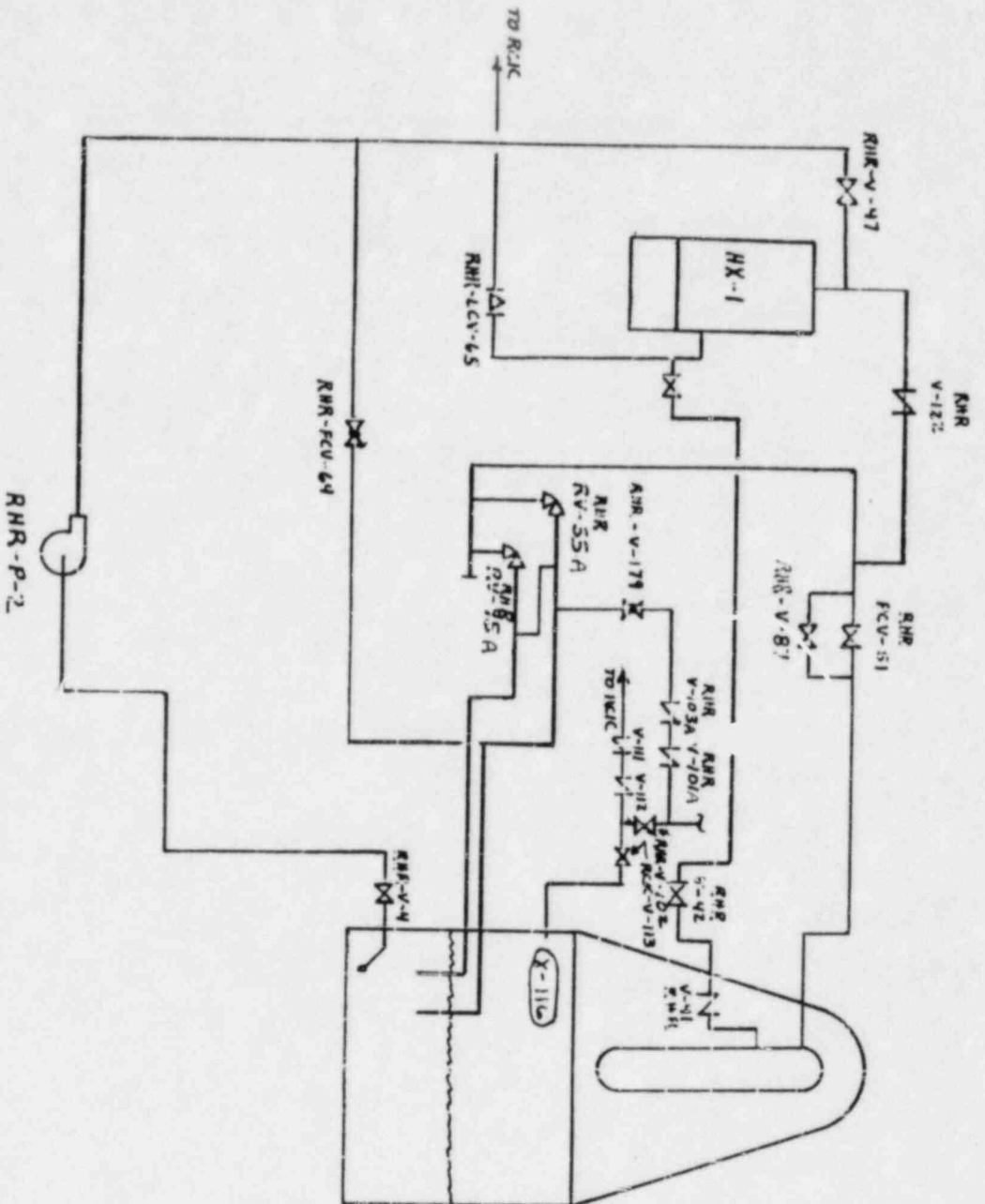
The manufacturer (Crosby Valve & Gage Co.) has indicated that the valve can be converted to incorporate a bellows seal which would alleviate this problem. However, this may not be scheduler responsive and other options are also being evaluated.



24" MIN
WORKING SPACE

3 1/2
FILE NO.

215 00 4166



PART 21 REPORT LOG SHEET

1. Subject of Report - RHR RELIEF VALVE VENT
2. Date Verbal Notification Received - OCTOBER 22, 1982 Received By - John Elin
3. Date Information Placed in Daily Report - OCTOBER 24, 1982
4. Name and Address of Person Providing Verbal Notification
 - a) Name - ROGER JOHNSON
 - b) Company and Address - BURNS & ROE, INC.
601 Williams Blvd., Richland, Washington 99352
 - c) Telephone No. - (509) 943-8200
5. Description of Problem - Given the single failure of an isolation valve post-LOCA, there is a direct path for fission products to go from the wetwell to the reactor building, bypassing containment.
6. Nuclear Facilities Affected - WNP-2 (DN 50-397)
7. Date 5-day Written Report Due - 10/27/82 Date Received - 10/29/82
8. Mail Written Report to HQ's and Other Affected Regions
 - a) Date Mailed to HQ's (Bill Mills) - 11/02/82
 - b) Date Mailed to Other Regions - Regions Mailed To -
9. Give Written Report to Each Region V Affected Principal Inspector
 - a) Date Given to Principal Inspector(s) - John Elin
 - b) Name(s) of Inspectors Given To -
10. Additional Comments -