



Burns and Roe, Inc.

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

83-888-000

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REGION V

Subject: Work Order 3900-4000
Washington Public Power Supply System
WNP-2
10CFR21 Reportable Condition #82-10
Main Steam Isolation Valve-Leakage Control System
Responds to: NA

November 9, 1982
BRGO-RO-82-012
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 inform you of a condition we have deemed to be reportable under the guidelines set forth in 10CFR21.

WNP-2 design incorporates a Leakage Control System (LCS) past the Main Steam Isolation Valves (MSIV). The purpose of the system is to direct fission products, which may leak past the MSIV's, to the Standby Gas Treatment System (SGTS). It has been discovered that a path of in-leakage may exist post-LOCA which could negate the ability of the MSIV-LCS to perform its safety function. This path exists because a valve required to isolate post-LOCA is not powered from a critical bus. This could result in off-site doses which are a substantial fraction of 10CFR100 values. Complete details are contained in the attached evaluation.

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

WGC:ATL:lvs

Attachment

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

Very truly yours,

W.G. Conn
Senior Group Supervisor

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Main Steam Isolation Valve - Leakage Control System (MSIV-LCS)
(82-10)

Description of Deficiency

WNP-2 design incorporates a leakage control system past the MSIV's in order to minimize the release of fission products if the MSIV's were to seat poorly. Suction would normally be taken off the piping downstream of the outboard MSIV, and discharged into the Standby Gas Treatment System (SGTS). It has been discovered that a valve, MS-V-146, on one of the branch pipes is not powered from a critical bus. Post-LOCA, one could not assume it would close, nor could one assume the piping past the valve, ANSI B.31.1, would remain intact.

The fans associated with each MSLC system are designed for 50 cfm flow at 20" of water. Of this flowrate, about 10% is leakage from the main steam lines, the balance is diluent air. This amount of steam does not affect the Standby Gas Treatment System Operation. However, this flowrate is too small to create a face velocity of sufficient magnitude to assure in-leakage of Turbine Building atmosphere into a 24" pipe. Thus, the fan of the outboard MSLC will not create sufficient suction pressure and line velocities to assure that backflow of fission products past this open valve to the atmosphere and hence to the site boundary does not occur.

Date and Method of Discovery

The deficiency was discovered during a Human Factors Engineering Review and documented on September 10, 1982.

Analysis of Safety Implication

As stated above, the function of the MSLC system is to prevent potential leakage of containment atmosphere through closed main steam isolation valves from reaching the site boundary without filtration after a LOCA. It is postulated that after a DBE, the non-seismic Class I steam piping will no longer be intact. An open path to the Turbine Building atmosphere will be created.

This leakage is postulated to occur at a rate of $11.5 \text{ ft}^3/\text{hr}$ per steam line due to poor seating of the MSIV's. The fission products in this leakage stream, were they to reach the site boundary without filtration, could result in off-site doses which are a substantial fraction of 10CFR100 values.

Corrective Action

Valve MS-V-146 will be powered from a critical bus to assure that the MSIV-LCS can perform it's intended function when required.

Applicability to Other Nuclear Projects

None. This situation is unique to WNP-2.

Over - Please see
that this entered
into P.21 system and is
reviewed.

PART 21 REPORT LOG SHEET

1. Subject of Report - Main Steam Fire Leakage Control System
2. Date Verbal Notification Received - 11/5/82 Received By - RT Dadds
3. Date Information Placed in Daily Report - 11/8/82
4. Name and Address of Person Providing Verbal Notification
 - a) Name - Andrew Luksic
 - b) Company and Address - Burns and Roe
Richland, WA
 - c) Telephone No. - 509-943-8243
5. Description of Problem - Archie ~~is~~ required to prevent
excessive firing product release in the main steam
line leakage control system is powered ~~by~~ from
a wireless I E box.
6. Nuclear Facilities Affected - CVNP2 Only
7. Date 5-day Written Report Due - 11/10/82 Date Received -
8. Mail Written Report to HQ's and Other Affected Regions
 - a) Date Mailed to HQ's (Bill Mills) -
 - 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) -
 - b) Name(s) of Inspectors Given To -
10. Additional Comments -

BURNS AND ROE, INC.
RECORD OF TELEPHONE CONVERSATION

WPPSS - Nuclear Project No. 2

Date 11-5-82 Time 1:30

To be confirmed () YES
(✓) NO

FROM
Name A. T. LUKSIC
Company or Dept. BURNS & ROE

TO
Name BOB DODDS
Company or Dept. NRC REGION V

SUBJECT(S) DISCUSSED REPORTING OF PART 21 / MAIN STEAM ISOLATION VALVE - LEAKAGE CONTROL SYSTEM

REMARKS I spoke with Bob Dodds and informed him that we have a condition we have deemed reportable under 10CFR21. I gave him some brief details of the problem and advised him that I would be sending out a full-report by 11-10-82.

A T Luksic

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REGION V

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CC: File

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