



601 Williams Boulevard ■ Richland, Washington 99352 ■ Tel: (509) 943-8200

Subject: Work Order 3900-4000  
Washington Public Power Supply System  
WNP-2  
Room Pressurization Due to High Energy  
Line Break  
Responds to: NA

Main Office  
550 Kinderkamack Road  
Oradell, New Jersey 07649  
(201) 265-2000

Reference: 1. BRGO-RO-83-013  
2. BRGO-RO-83-015

November 8, 1983  
BRGO-RO-83-17  
Response Required: NA

Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Director

Dear Sir:

Attached is our final report for the subject reportable condition.

If you have any questions please contact W. G. Conn at (509) 943-8241.

Very truly yours,

W. G. Conn  
Licensing Supervisor

WGC/jp

Attachment

cc: BPA - Mr. W. S. Chin  
SS - Mr. G. L. Gelhaus, w/a  
SS - Mr. L. T. Harrold, w/a  
SS - Mr. J. G. Tellefson, w/a  
SS - Mr. R. T. Johnson, w/a  
NRC - Mr. J. B. Martin, w/a (Region V)  
NRC - Mr. P. Sears, w/a (Region IV)

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## FINAL REPORT

### ROOM PRESSURIZATION DUE TO HIGH ENERGY LINE BREAKS #83-15

#### DESCRIPTION OF DEFICIENCY

Plant modifications implemented for fire protection and other concerns included blocking of some vent paths from Reactor Building Rooms containing high energy lines. Room pressurization calculations were not updated to reflect the revised venting capability.

Subsequent reanalysis has shown that one room (R206C) cannot withstand calculated pressurization following a postulated high energy line break (HELB). This room is actually a pipe chase that has one cement block wall for shielding purposes. Pressurization following a HELB would cause the block wall to fail. Impacts from falling cement blocks could damage safety related equipment, primarily electrical conduit. Failure of the block wall in no way affects structural integrity of the building.

#### SAFETY IMPLICATION

Decreased vent area results in higher room pressure following a High Energy Line Break (HELB) which could cause wall/floor failure with attendant damage to safety related components.

An evaluation was made regarding potential consequences of impacts to safety related equipment located adjacent to room 206C. Potential damage to HPCS and LPCS Control Systems was identified along with potential damage to an ADS Division II permissive. Under this scenario, coupled with a worst case single failure (ADS Division I), high pressure ECCS makeup to the reactor would be precluded and depressurization would be precluded. Reactor cooldown would be dependent on non-safety related equipment.

#### CAUSE OF DEFICIENCY

Failure to recognize that reducing room vent paths could have adverse safety implications.

#### ACTIONS TO PREVENT RECURRENCE

Group Supervisors have been advised that changes to room vent areas require consideration as to potential effect on room pressurization calculations.

CORRECTIVE ACTION

All Reactor Building Rooms containing high energy lines were evaluated as to vent area changes. Six rooms were determined to require reanalysis. One room, R206C, was determined to fail due to pressurization as described above.

To preclude potential damage to safety related equipment due to falling cement blocks following a RCIC pipe break in room R206C, PED-210A-CS-0743 was issued to lower the block wall five feet thus providing sufficient vent area to prevent overpressurization.