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SORENSEN,G.C. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Licensing Branch 2

SUBJECT: Responds to NRC 830816 telcon re TMI Action Item II.K.3.28 concerning automatic depressurization valve accumulator backup nitrogen supply.

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EXTERNAL:	ACRS	41	6	6	BNL(AMDTS ONLY)		1	1
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Washington Public Power Supply System
P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

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A PDR

November 23, 1983
G02-83-1089

Docket No. 50-397

Director of Nuclear Reactor Regulation
Attention: Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
VALVE NITROGEN SUPPLY

Reference: Letter, G02-83-861, G. C. Sorensen (SS) to A. Schwencer (NRC), "TMI Action Item II.K.3.28", dated September 23, 1983

The following questions were presented by Messrs. R. Auluck, T. Collins, and R. Froelich (NRC) in a telephone conversation, August 16, 1983, to Messrs. P. Powell, A. Wood, and K. Wise (SS) concerning the ADS valve accumulator backup nitrogen supply and the justification for interim operation (JIO) pending qualification of the ADS air supply. Supply System response to the questions are as follows:

1. What are the alarms and indications available in the control room to indicate low header pressure?

Response

When DIV 1 header pressure falls to 140 psig, the control room panel H13-P840 annunciator block A5 window 8-3 "CONT. NITROGEN A ISOLATED" flashes and the audible alarm will sound to alert the control room operators.

When DIV 2 header pressure falls to 140 psig, the control room panel H13-P820 annunciator block B1 window 6-4 "CONT. NITROGEN B ISOLATED" flashes and the audible alarm sounds to alert the control room operators.

These alarms indicate that the header pressure has fallen to the value where the header automatically isolates from the normal supply and the nitrogen bottle sequencer is activated.

A B001
1/1

For the situation of either DIV 1 N_2 header pressure less than 135 psig or when the last bottle in the DIV 1 sequence is opened by the program sequence, the following will happen:

1) In the "CIA BYPASS AND INOPERABLE STATUS DISPLAY DIV 1" on control room panel H13-P840, the light "N_2 DIV 1 SUPPLY PRESS LOW" will start flashing, and

2) In the A5 annunciator block on control room panel H13-P840 window 10-3 which reads "CIA DIV 1 OUT OF SERVICE" will start flashing and the audible alarm will sound to alert the control room operators.

For the situation of either DIV 2 N_2 header pressure less than 135 psig or when the last bottle in the DIV 2 sequence is opened by the program sequence, the following will happen:

1) In the "CIA BYPASS AND INOPERABLE STATUS DISPLAY DIV 2" on control room panel H13-P820, the light "N_2 DIV 2 SUPPLY PRESS LOW" will start flashing, and

2) In the B1 annunciator block on control room panel H13-P820 window 10-4 which reads "CIA DIV 2 OUT OF SERVICE" will start flashing and the audible alarm will sound to alert the control room operators.

Also on H13-P840 there is the indicator "ADS ACCUM HDR A PRESS" (CIA-PI-21A) for the operator to directly read the actual header pressure for DIV 1. For DIV 2 on H13-820 there is indicator "ADS ACCUM HDR B PRESS" (CIA-PI-21B) for the same purpose.

2. What indications and communication exist at the remote nitrogen bottle location, i.e., the one spare bottle per header system that is to be valved in upon low header pressure?

Response

There is no indication except for the pressure gauges on the nitrogen bottle pressure regulator. The communications that exist are the plant phone system telephone located 75 feet down the hallway from the nitrogen bottle location and the plant radio system.

3. Describe the required operator actions, abnormal condition response procedures, or annunciator response procedures in the event of the nitrogen system supply failure.

Response

Summary descriptions of the plant procedures associated with this event for DIV 1 are attached (Attachments 1 and 2). DIV 2 summary descriptions are similar. An applicable technical specification to assure the function of the nitrogen air supply system, specifically verification of the nitrogen bottle pressure, is described in technical specification LCO 3.5.1 (see reference).

4. Describe the environmental conditions that the air supply system programmers will see in the event of an HELB in secondary containment.

Response

The programmers are installed in NEMA-4 enclosures in instrument racks on the 548' elevation level of the reactor building as indicated in Attachment 3. An analysis conducted on the instruments in their opposed locations under LOCA, auxiliary steam line break, and RWCU line break conditions concludes that in any one accident one of the programmers would not be exposed to a temperature in excess of 128°F.

If you have any questions, please contact Mr. P. L. Powell, Manager, WNP-2 Licensing.

Very truly yours,

G. C. Sorensen, Manager
Regulatory Programs

BDP/tmh
Attachments

cc: R Auluck - NRC
WS Chin - BPA
AD Toth - NRC Site

DIV 1 OPERATOR RESPONSE SUMMARY

H13-P840 Block A-5

WINDOW 8-3	SOURCE	AUTOMATIC ACTIONS
CONT. NITROGEN A ISOLATED	CIA-PS-39A at 140 psig	Closes CIA-V-39A Inputs to Sequencer

1. Indicates SRV and ADS main supply header pressure has decreased to $<$140 psi and normal supply header valve CIA-V-39A to ADS valves 5B, 4B, and 4A is closed.

2. Verify standby N_2 bank programmer is sequencing bottles on line to restore pressure to $>$140 psi on PI-21-A (CR Board A).

3. Verify that programmer stops sequencing on bottles as header 1A pressure increases to $\geq$140 psi.

4. Determine cause of reduced pressure on main header (i.e., valve alignment, SORV, vaporizer power failure, etc.).

5. When main header pressure is restored to $>$140 psi, verify CIA-V-39A has re-opened and supply is normal on the bulk N_2 tank.

6. Replace any N_2 tanks having low pressure.

DIV 1 OPERATOR RESPONSE SUMMARY

H13-P840 Block A5

WINDOW 10-3	SOURCE	AUTOMATIC ACTIONS
CIA - DIV 1 OUT OF SERVICE WITH N_2 DIV 1 SUPPLY PRESS LOW	CIA-PS-22A at 135 psi or CIA-PROG-1A-CR-15 (Sequencer at bottle 15)	Alarm and Input to Sequencer

1. Alarm at 135 psi indicates sequencer has not initiated at 140 psi or sequencer has stepped to last bottle.

2. If a plant transient is in progress that has opened any ADS valve, place the switch for that valve to OPEN, for sustained opening and enter EOP.

3. Send operator to valve in the standby nitrogen bottle for DIV 1 which is located in the corridor on elevation 441 between the reactor building and the diesel generator building.

4. Verify that header pressure is restored to $>$140 psi. Obtain additional nitrogen bottles as necessary to maintain header pressure $>$ 140 psi.

5. Check sequencer power supply fuses in IR-67-2 near sequencer rack IR-67.

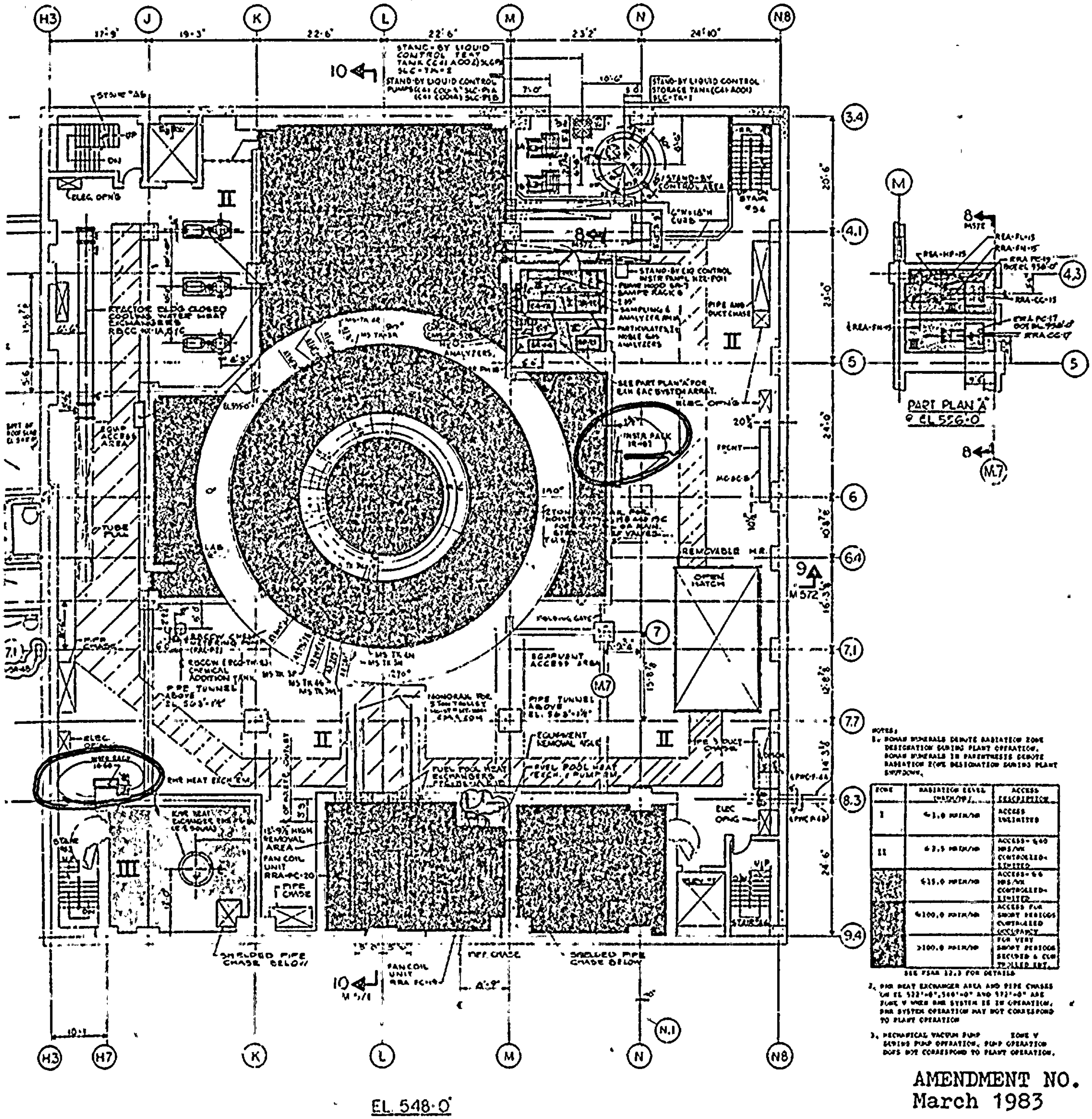
6. Check power supply to IR-67, Bkr 37 and 39 at PP-74-E.

7. Check main supply header pressure at PI-20, if pressure is $<$ 140 psi.
   A. Check N_2 flow path from bulk tank to CIA header for valve alignment and/or open RV's, test taps, etc.
   B. Check trim vaporizer power supply closed at MC 74-A Bkr 5A-R.

8. Request immediate maintenance assistance to replace any empty N_2 bottles in bottle racks in the reactor building railroad bay.

9. If pressure can not be restored or maintained, a broken N_2 line inside drywell must be assumed.

10. If pressure on MSRV's and ADS valve headers can not be restored, valve in CIA compressor operation, and take the plant to cold shutdown as rapidly as possible within operating limits.



NOTES:

1. ROMAN NUMERALS DENOTE RADIATION ZONE DESIGNATION DURING PLANT OPERATION. ROMAN NUMERALS IN PARENTHESIS DENOTE RADIATION ZONE DESIGNATION DURING PLANT SHUTDOWN.

ZONE	RADIATION LEVEL (MREM/HR)	ACCESS DESCRIPTION
I	≤1.0 MREM/HR	ACCESS UNLIMITED
II	≤2.5 MREM/HR	ACCESS ≤40 HRS/WK CONTROLLED-LIMITED
[shaded]	≤15.0 MREM/HR	ACCESS ≤6 HRS/WK CONTROLLED-LIMITED
[shaded]	≤100.0 MREM/HR	ACCESS FOR SHORT PERIODS CONTROLLED OCCUPANCY
[shaded]	>100.0 MREM/HR	FOR VERY SHORT PERIODS SECURED & CONTROLLED ENT.

SEE FSAR 12.3 FOR DETAILS

2. RHR HEAT EXCHANGER AREA AND PIPE CHASES ON EL 522'-0", 548'-0" AND 572'-0" ARE ZONE V WHEN RHR SYSTEM IS IN OPERATION. RHR SYSTEM OPERATION MAY NOT CORRESPOND TO PLANT OPERATION

3. MECHANICAL VACUUM PUMP ZONE V DURING PUMP OPERATION. PUMP OPERATION DOES NOT CORRESPOND TO PLANT OPERATION.

AMENDMENT NO. 29
March 1983

ATTACHMENT 3

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	GENERAL ARRANGEMENT PLAN EL. 522'-0" & EL. 548'-0" REACTOR BUILDING	FIGURE 12.3-38