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SUBJECT: LER 88-038-00:on 881219,vacuum breaker valve inoperable due to valved out pressure transmitter.W/890118 ltr.

W/8 ltr.

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	NRR/DEST/RSB 8E	1	1	NRR/DEST/SGB 8D	1	1
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U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	1 OF 0 7

TITLE (4) Reactor Building-to-Suppression Chamber Vacuum Breaker Valve Inoperable Due to Valved Out Pressure Transmitter Caused By Procedural Inadequacies

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
1 2	1 9	8 8	8 8	– 0 3 8	– 0 0	0 1	1 8	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
S.L. Washington, Compliance Engineer	5 1 0 9 3 7 7 1 – 1 2 0 1 8

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single space typewritten lines) (16)

On December 19, 1989 at 0145 hours, it was determined that a Reactor Building-to-Suppression Chamber Vacuum Breaker Valve [Containment Supply Purge (CSP) System Valve CSP-V-9] required by Plant Technical Specification 3.6.4.2 to be operable was inoperable. Plant Instrument and Control (I&C) Technicians, while performing the Technical Specification Monthly Channel Functional Test (CFT) for vacuum breaker actuation instrumentation, found a Containment Supply Purge Differential Pressure Transmitter (CSP-DPT-6) valved out of service. With the differential pressure transmitter out of service, the one-out-of-one high vacuum trip circuit for CSP-V-9 is inoperable. A review of work activities associated with CSP-V-9 and CSP-DPT-6 determined that, during CSP-V-9 repairs performed between December 1, 1988 and December 6, 1988, differential pressure transmitter CSP-DPT-6 had been valved out of service and there was no subsequent Plant record of it being valved back into service. Therefore, CSP-V-9 was inoperable for the period of December 6-19, 1988.

The immediate corrective action was to allow the I&C Technicians to complete the CFT which included placing CSP-DPT-6 back in service which restored CSP-V-9 to operable status at 0200 hours on December 19, 1988.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Abstract (Cont'd)

Two programmatic root causes of this event were determined. First, the Local Leak Rate Test (LLRT) Procedure contained a statement that CSP-DPT-6 is out of service during the LLRT. This statement is confusing and led Plant Operators to believe they could release a clearance order with the differential pressure transmitter instrument valved out and that it would be valved back in as part of system restoration after the LLRT. Secondly, the Clearance Order procedure did not adequately cover the situation of releasing the clearance order with valves not in their normal operating position.

Corrective action to be taken includes: The specific statement "CSP-DPT-6 out of service" will be deleted from the LLRT procedure, the LLRT procedure will be reviewed to ensure that components out of service to support LLRT testing are restored by specific procedure steps, and the Clearance Order procedure will be revised to provide more specific instructions on handling components released from the clearance that are not in their normal operating position.

There is no safety significance associated with this event. Two of three vacuum breaker lines and their associated valves were operable during the event and only two of three lines are necessary to maintain the Reactor Building-to-Suppression Chamber pressure within design limits.

Plant Conditions

a) Power Level - 100%
b) Plant Mode - 1 (Power Operation)

Event Description

On December 19, 1988 at 0145 hours, Plant Instrument and Control (I&C) Technicians discovered that Containment Supply Purge (CSP) pressure transmitter CSP-DPT-6 was inoperable due to mispositioned instrument rack isolation valves. Pressure transmitter CSP-DPT-6 feeds differential pressure switch CSP-DPS-6 which actuates at 0.5 psid to open valve CSP-V-9. Valve CSP-V-9 is a Reactor Building-to-Primary Containment Wetwell Butterfly Isolation (Vacuum Breaker) Valve which is required to be operable by Plant Technical Specification 3.6.4.2.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

As described in previously submitted LER 88-037-00, on December 1, 1988 the Plant was shutdown to repair valve CSP-V-9. To verify the adequacy of the repair a Local Leak Rate Test (LLRT) of CSP-V-9 was performed. The valve did not pass the initial post-repair LLRT. To help identify where the valve was leaking a special inspection of the valve was performed while the valve was closed. In order to prevent the valve from opening while the inspection was being performed, CSP-DPT-6 was taken out of service by closing the high and low pressure isolation valves [Instrument Rack 64 (IR-64) valves 9 and 11] and opening the pressure equalizing valve (IR 64 valve 10) to create a 0 (zero) psid pressure signal. The repositioning of the valves was documented on a Clearance Order; however, the Clearance Order was subsequently released with the pressure transmitter still valved out because the Control Room Supervisor and the Shift Manager (licensed senior reactor operators) thought this was the proper lineup for the pressure transmitter for the LLRT which still had to be performed. The LLRT procedure (PPM 7.4.6.1.2.4) contains a statement under the heading "Additional Test Instructions" which states, "During this test CSP-DPT-6 will be out of service". What is actually meant by the statement is that CSP-DPT-6 will be out of service because the instrument line isolation valve (CSP-V-703) is closed during the LLRT, isolating the low pressure line to CSP-DPT-6. Vacuum Breaker Valve CSP-V-9 was declared operational on December 6, 1988 after the LLRT and the CSP-V-9 valve operability portion of Surveillance Procedure (PPM) 7.4.6.3.3, "CSP and Containment Exhaust Purge (CEP) Containment Isolation Valve Operability" were successfully completed. The valve operability test strokes the valve using the valve manual control switch which verifies valve operability, but not the valve open on high differential pressure logic. Since the LLRT does not have specific steps for the restoration of CSP-DPT-6 at the instrument rack, both CSP-DPT-6 and CSP-V-9 were inoperable from December 6 to December 19, 1988.

At the time of the valve mispositioning discovery the Plant I&C Technicians were performing the Monthly Technical Specification Channel Functional Test (CFT) which verifies that CSP-V-9 opens on high differential pressure. The Plant I&C Technicians reported the discovery to the Shift Manager. Since the CFT requires the same as-found IR 64 valve positions to hookup test equipment for the CFT and since the valves are returned to their operational positions by the CFT, the I&C Technicians were instructed to complete the surveillance. The CFT was completed at 0200 hours, 15 minutes after the discovery, and CSP-V-9 was restored to operational status.

Immediate Corrective Action

After the Plant I&C Technicians reported the discovery to the Shift Manager, they continued the Channel Functional Test which requires the same as-found IR 64 valve positions to hookup test equipment. The CFT was completed at 0200 hours, 15 minutes after the discovery. The IR 64 valves, as required by the CFT, were returned to their operational positions and CSP-V-9 was restored to operational status.

Further Evaluation and Corrective Action

A. Further Evaluation

This event is reportable per 10CFR50.73(a)(2)(i)(B), a condition prohibited by Plant Technical Specifications. Technical Specification 3.6.4.2 requires all reactor building - suppression chamber vacuum breakers to be OPERABLE. Vacuum Breaker Valve CSP-V-9 was inoperable for the period between December 6 and December 19, 1988.

Other than CSP-V-9, there were no other structures, components, or systems inoperable at the start of the event that contributed to the event.

There are two root causes of this event. The LLRT procedure statement "During this test CSP-DPT-6 will be out of service" under the heading "Additional Test Instructions" is confusing. Confusion results from what is meant by "out of service". Operations personnel interpreted "out of service" to mean that the transmitter would be valved out at the instrument rack. The statement actually means that CSP-DPT-6 is out-of-service because the low pressure instrument line isolation valve CSP-V-703 is closed during the LLRT. The isolation valve CSP-V-703 is included in the leak rate test procedure valve lineup, but there is no tie between the "out of service" statement and CSP-V-703. Secondly, the Clearance Order procedure (PPM 1.3.8) was less than adequate because it did not cover the situation regarding restoration of equipment to an abnormal lineup. The lack of guidance in PPM 1.3.8 led Operations personnel to the conclusion that the single statement under the LLRT procedure heading of "Additional Test Instructions" provided sufficient assurance that the three instrument valves would be restored to a normal lineup.

B. Further Corrective Action

1) The LLRT procedure will be revised to delete the statement "During this test CSP-DPT-6 will be out of service" and also to delete CSP-V-703 from test valve lineup because it does not require isolation for this specific LLRT.

2) The LLRT procedure will be reviewed to determined if there are: 1) other statements which are misleading or confusing, 2) components included in the "Additional Test Instructions" which require repositioning for LLRT that are not specifically listed in the formal test lineup with a "Test" and "Restored" verification, and 3) other components included in the test lineups which are not required to do the LLRT.

3) The Clearance Order Procedure will be revised to include more specific instructions on the handling of valves not in their normal operational position when released from the clearance order. An item-by-item transfer of control will be specified to eliminate the possibility of an incorrect interpretation of a general statement.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Safety Significance

There is no safety significance associated with this event. There are three 24" Reactor Building-to-Wetwell relief lines each containing an air-operated butterfly isolation valve and a vacuum breaker check valve. The butterfly isolation valves are CSP-V-5,6, and 9 and the vacuum breaker check valves are CSP-V-7,8, and 10 (Reference Figure 1). These valves prevent a vacuum from developing in the primary containment due to condensing steam. The butterfly isolation valves open on a differential pressure signal of 0.5 psid sensed between the Reactor Building and the Primary Containment Wetwell. The vacuum breaker check valves are designed to open between 0.10 and 0.35 psid and to be fully open at 0.5 psid. Only two of the three Reactor Building to Wetwell vacuum breaker lines are required to maintain differential pressures within the design limits, and the vacuum breaker valves on the other two lines were operable during this event period.

The Reactor Building-to-Wetwell vacuum relief lines and valves are sized to ensure that the Primary Containment internal design pressure of 2.0 psid below the Reactor Building is not exceeded. Nine pair of 24" vacuum breakers are provided between the Drywell and Wetwell to maintain Drywell-to-Wetwell differential pressure within design requirements. The FSAR, in paragraph 6.2.1.1.4, "Negative Pressure Design Evaluation" discusses vacuum breaker valve failures. It states "Even after allowing for two Drywell-to-Wetwell vacuum breaker failures and an additional failure of either a Reactor Building-to-Wetwell or an operator error, the resulting pressure differentials Reactor Building-to-Drywell, Reactor Building-to-Wetwell, and Wetwell-to-Drywell are less than 2.0 psid and within the design values..." A review of Technical Specification Surveillance Tests verified the operability of the vacuum breaker check valve and the butterfly isolation valve on each of the other two Reactor Building-to-Wetwell vacuum breaker lines for the period that CSP-V-9 was inoperable. However, with only two vacuum breaker lines and associated valves operable the system was no longer single failure proof. If a LOCA involving primary containment sprays had occurred and if one of the four operable valves, two per line, had failed containment integrity would have been jeopardized. However, since the vacuum breaker valves on two of the three Reactor Building-to-Wetwell vacuum breaker lines were operable and not challenged during this event, and only two lines are required to maintain internal design pressure limits, there is no safety significance associated with this event. Accordingly, this event posed no threat to the health and safety of the public or Plant personnel.

Similar Events

None

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TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

EIIS Information

Text Reference	EIIS Reference	
	System	Component
CSP-DPT-6	VB	DPT
CSP-DPS-6	VB	PDS
CSP-V-9	VB	PDCV
IR 64 (Low pressure isolation valves 9 and 11)	VB	ISV
IR 64 (Pressure equalizing valve 10)	VB	PCV
CSP-V-703	VB	ISV
CSP-V-5 and 6	VB	PDCV
CSP-V-7, 8 and 10	VB	PDCV

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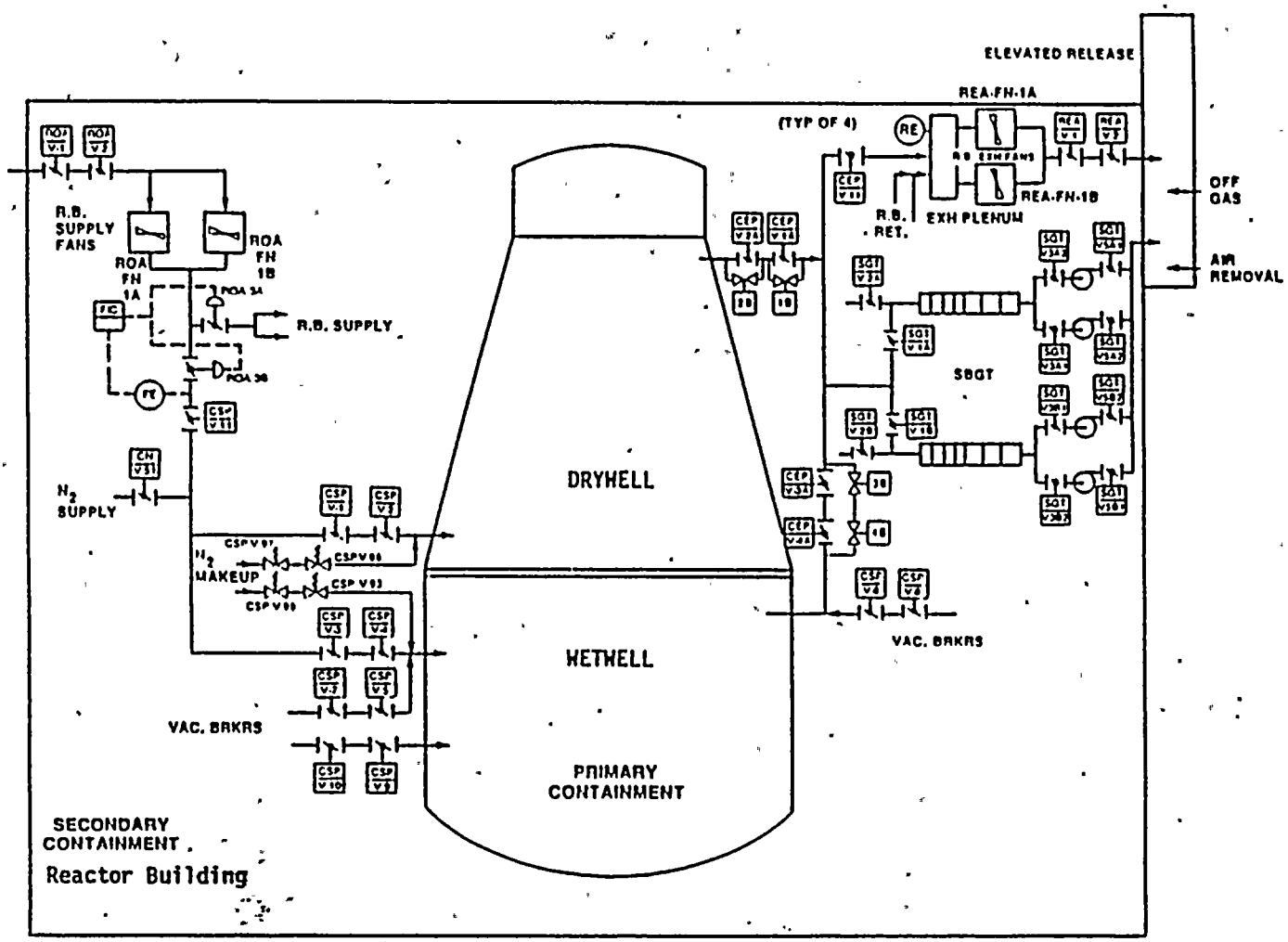

FIGURE 1

MAIL ROOM
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1989
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

Docket No. 50-397

January 18, 1989

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 88-038

Dear Sir:

Transmitted herewith is Licensee Event Report No. 88-038 for the WNP-2 Plant. This report is submitted in response to the report requirements of 10CFR50.73 and discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Very truly yours,

GW Baker

C.M. Powers (M/D 927M)
WNP-2 Plant Manager

CMP:lg

Enclosure:
Licensee Event Report No. 88-038

cc: Mr. John B. Martin, NRC - Region V
Mr. C.J. Bosted, NRC Site (M/D 901A)
INPO Records Center - Atlanta, GA
Ms. Dottie Sherman, ANI
Mr. D.L. Williams, BPA (M/D 399)

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