

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9010160040 DOC.DATE: 90/10/04 NOTARIZED: NO DOCKET #  
 FACIL:50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397  
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 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-018-00:on 900904,engineered safety feature actuation  
 of CIA caused by relief valve blowdown.W/901004 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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INTERNAL:	ACNW		2	2		ACRS		2	2
	AEOD/DOA		1	1		AEOD/DSP/TPAB		1	1
	AEOD/ROAB/DSP		2	2		NRR/DET/ECMB 9H		1	1
	NRR/DET/EMEB 7E		1	1		NRR/DLPQ/LHFB11		1	1
	NRR/DLPQ/LPEB10		1	1		NRR/DOEA/OEAB11		1	1
	NRR/DREP/PRPB11		2	2		NRR/DST/SELB 8D		1	1
	NRR/DST/SICB 7E		1	1		NRR/DST/SPLB8D1		1	1
	NRR/DST/SRXB 8E		1	1		REG FILE 02		1	1
	RES/DSIR/EIB		1	1		RGN5 FILE 01		1	1
EXTERNAL:	EG&G BRYCE,J.H		3	3		L ST LOBBY WARD		1	1
	NRC PDR		1	1		NSIC MAYS,G		1	1
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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

Docket No. 50-397

October 4, 1990

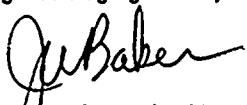
Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: NUCLEAR PLANT NO. 2  
LICENSEE EVENT REPORT NO. 90-018

Dear Sir:

Transmitted herewith is Licensee Event Report No. 90-018 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,

  
J. W. Baker (M/D 927M)  
WNP-2 Plant Manager

JWB:lr

Enclosure:  
Licensee Event Report No. 90-018

cc: Mr. John B. Martin, NRC - Region V  
Mr. C. Sorensen, NRC Resident Inspector (M/D 901A)  
INPO Records Center - Atlanta, GA  
Ms. Dottie Sherman, ANI  
Mr. D. L. Williams, BPA (M/D 399)  
NRC Resident Inspector - walk over copy

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## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

TITLE (4) Engineered Safety Feature Actuation of Containment Instrument Air (CIA) Caused by Relief Valve Blowdown

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)
0	9	04	9	0	0118	0	0	10	04	9	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)	20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(e)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vii)	50.73(a)(2)(viii)(A)	50.73(a)(2)(viii)(B)	50.73(a)(2)(ix)	73.71(b)	73.71(c)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
1								X								

## LICENSEE CONTACT FOR THIS LER (12)

NAME C. L. Fies, Compliance Engineer TELEPHONE NUMBER 510 937 71-1 2101319 AREA CODE

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS

## SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) X NO EXPECTED SUBMISSION DATE (15)

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

At approximately 1020 hours on September 4, 1990, a pressure decrease occurred in the Containment Instrument Air (CIA) System as a result of an inadvertent manual relief valve actuation. This pressure decrease caused the non-safety-related part of the CIA system to be isolated from the safety related part and automatically placed the safety related bottled nitrogen source into service. This action is considered an Engineered Safety Feature Actuation.

The root cause of this event was a deficiency in the equipment design. This allowed a lighting fixture to be in a position to be pushed into and actuate a relief valve which resulted in a loss of pressure in the safety-related portion of the CIA system.

Immediate corrective action was taken to prevent recurrence by temporarily removing the manual actuator on the relief valve and securing the lighting fixture.

The event posed no threat to the health and safety of either the public or plant personnel.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Washington Nuclear Plant - Unit 2	DOCKET NUMBER (2)  0 5 0 0 0 3 9 7	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 0	0 1 8	0 0	0 2	OF 0 5

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

Plant Conditions

Power Level - 100%  
Plant Mode - 1

Event Description

At approximately 1018 hours on September 4, 1990, Plant Electricians were conducting a routine surveillance test of the Fire Protection System (FP) ionization detectors. One of these detectors (FP-1D-38-4) is located above a lighting fixture and required movement of the fixture to reach the detector. When the light fixture was moved it inadvertently (and without the Electrician's knowledge) came in contact with the manual actuation handle on Containment Instrument Air (CIA) pressure relief valve (CIA-RV-5B). Shortly thereafter, an "N2 SUPPLY PRESSURE LOW DIVISION 2" alarm was received in the Plant Control Room. At 1020 hours a "DIVISION 2 CONTAINMENT INSTRUMENT AIR (CIA) HEADER ISOLATED" alarm was received along with indication that the isolation valve (CIA-V-39B) had closed. The pressure decrease and the closure of the isolation valve caused the Division II portion of the safety-related bottled nitrogen source to be placed into service. The CIA-V-39B valve provides the isolation boundary between the safety and nonsafety-related portions of the CIA system.

The safety-related part of the CIA provides the nitrogen supply to operate the Main Steam Safety Relief Valves (MSRVs) in the Automatic Depressurization System (ADS) mode of operation. The ADS is a portion of the backup Emergency Core Cooling System (ECCS) designed to quickly reduce reactor pressure in the unlikely event of failure of the High Pressure Core Spray (HPCS) system. The ADS is composed of seven specially designated MSRVs that provide rapid depressurization of the primary system. The safety-related part of the CIA system itself normally receives nitrogen from the non-safety related part of the system via CIA-V-39B (CIA-V-39A for the Division I part). The safety-related part can also be supplied by nitrogen from dedicated backup bottles. When a loss of pressure in the safety-related part is indicated, CIA-V-39B is automatically closed and individual isolation solenoid valves between each backup bottle and the system sequence into service.

Valve CIA-V-39B is automatically closed when the normal CIA pressure drops from its normal value of approximately 148 psig to 140 Psig (as measured by pressure switch CIA-PS-39B after a three minute time delay). A total of three signals are used to initiate backup nitrogen for the ADS. The signals are (1) CIA-PS-22B 135 PSIG, (2) CIA-PS-21B 140 PSIG, and (3) CIA-V-39B closed as described above. These signals feed a two-out-of-three logic circuit which initiates the stepping programmers for the nitrogen bottles. Programmer "B", CIA-PROG-1B, is initiated by the "B" logic and provides backup nitrogen to four of the seven ADS valves.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Washington Nuclear Plant - Unit 2	DOCKET NUMBER (2)  0 5 0 0 0 3 9 7	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	— 0 1 8	— 0 1 0	0 1 3	OF	0 1 5

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

At approximately 1050 hours, plant operating personnel found that the relief valve for the Division II CIA header (CIA-RV-5B) had been manually opened and it was causing the loss of system pressure by continually venting to atmospheric pressure. This loss of system pressure caused the nitrogen bottle supply to be cycled into service in an attempt to restore pressure. The relief valve is located on the safety-related side of the isolation valve (CIA-V-39B). It should be noted that the accumulators for the ADS valves each have a check valve between the accumulator and the header where the relief valve is located. Thus, nitrogen pressure would have been available to operate the ADS valves. The pressure in the Division II header cycled until approximately 1105 hours, when the system pressure returned to normal.

Immediate Corrective Action

At 1050 hours, the relief valve was closed stopping the nitrogen blowdown. At 1105 hours the pressure in the system stabilized and the CIA System returned to normal operation. The manual actuation handle was temporarily removed from the valve and the lighting fixture that hit the valve handle was secured.

Further Evaluation and Corrective ActionA. Further Evaluation

1. This event is being reported per the requirements of 10CFR50.73(a)(2)(iv) as an "event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF).....". This event was not called in as a four-hour non-emergency per the requirements of 10CFR50.72(b)(2)(ii). After a review by Plant Management the following day, taking into consideration the FSAR definition of ESF Systems at WNP-2, this event was reported to the NRC Operations Office at 0955 hours on September 5, 1990.
2. The root cause of this event was a deficiency in the equipment design which allowed a lighting fixture to be in a position to move and actuate the relief valve. The lighting fixture was moved aside by plant maintenance personnel during the performance of the Fire Protection Surveillance (PPM 15.2.2). This surveillance requires periodic testing of detector heads by use of an ionizing gas. In this case, the Fire Protection Head (FP-1D-38-4) is located directly above the lighting fixture. The testing device used is mounted on a pole and required movement of the lighting fixture to reach the detector. The movement of the lighting fixture in the Easterly direction caused it to hit the manual actuation lever on the relief valve (CIA-RV-5B). The manual actuation of this valve allowed it to stay in the open position until the lever was used to place it back in the closed position.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Washington Nuclear Plant - Unit 2	0   5   0   0   0   3   9   7	9   0	-   0   1   8	-   0   0	0   4	OF	0   5

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

3. Further evaluation showed that CIA-RV-5B was tested during the last refueling outage. During that test, the valve met reset test requirements which are independent of manual lever actuation.
4. A review of this event with the System Engineer concluded that this hardware configuration (lighting fixture in close proximity to a manually actuated relief valve) was probably unique and did not warrant further corrective action such as a CIA walkdown.
5. There were no structures, components or systems that were inoperable prior to the start of this event which contributed to the event.

**B. Further Corrective Action**

1. The lighting fixture has been removed and will be permanently relocated to a position where it does not interfere with the relief valve.
2. The manual actuation handle will be replaced on the valve.
3. The code requirement for a manual actuation handle will be reviewed to assure the overall system reliability is optimized.

**Safety Significance**

This is no safety significance associated with this event. The CIA system responded to the event in an effort to restore pressure as required by design requirements. The safety-related header was venting to atmosphere but plant operators were aware of the problem since pressure indication is readout in the control room (CIA-PI-21B) and action was taken to close the valve. It should also be noted that the accumulators for the ADS valves each have a check valve between the accumulator and the header where the relief valve is located. Thus, nitrogen pressure would have been available to operate the ADS valves. Further, only one of the nineteen backup nitrogen bottles had depleted to the point where it required replacement after the event. In addition, it is unlikely that the relief valve (CIA-RV-5B) would fail to close in the non-manual mode of operation since this condition was tested during the last refueling outage.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATIONESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS  
INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD  
COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS  
AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR  
REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO  
THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE  
OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Washington Nuclear Plant - Unit 2	0   5   0   0   0   3   9   7	9   0	—   0   1   8	—   0   0	0   5	OF 0   5

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

EIIS InformationText ReferenceEIIS ReferenceSystem                      Component

Containment Instrument Air (CIA)  
Fire Protection System (FP)  
Fire Protection Detector (FP-1D-38-4)  
CIA Relief Valve (CIA-RV-5B)  
CIA Valve (CIA-V-39B)  
Main Steam Relief Valves (MSRV)  
Automatic Depressurization System (ADS)  
High Pressure Core Spray (HPCS)  
CIA Valve (CIA-V-39A)  
CIA Pressure Switch (CIA-PS-39B)  
CIA-PS-22B  
CIA-PS-21B  
CIA Programmer 1B (CIA-PROG-1B)  
CIA Pressure Indicator (CIA-PI-21B)

LD	--
KP	--
KP	DET
LD	RV
LD	V
MS	RV
BG	--
BG	--
LD	V
LD	PS
LD	PS
LD	PS
LD	--
LD	PI