

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8710260275 DOC. DATE: 87/10/15 NOTARIZED: NO DOCKET #
 FACIL: STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
 AUTH. NAME AUTHOR AFFILIATION
 BRANDISH, T. R Arizona Nuclear Power Project (formerly Arizona Public Serv
 HAYNES, J. G. Arizona Nuclear Power Project (formerly Arizona Public Serv
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-044-01: on 870515, discovered that beginning on 870423 through 870425, both independent trains of control room essential filtration sys inoperable due maint activity. Caused by inadequate design. W/871015 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: Standardized plant.

05000529

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD5 LA	1 1	PD5 PD	1 1
	LICITRA, E	1 1	DAVIS, M	1 1
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	AEOD/DOA	1 1	AEOD/DSP/NAS	1 1
	AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1
	ARM/DCTS/DAB	1 1	DEDRO	1 1
	NRR/DEST/ADS	1 0	NRR/DEST/CEB	1 1
	NRR/DEST/ELB	1 1	NRR/DEST/ICSB	1 1
	NRR/DEST/MEB	1 1	NRR/DEST/MTB	1 1
	NRR/DEST/PSB	1 1	NRR/DEST/RSB	1 1
	NRR/DEST/SGB	1 1	NRR/DLPQ/HFB	1 1
	NRR/DLPQ/QAB	1 1	NRR/DOEA/EAB	1 1
	NRR/DREP/RAB	1 1	NRR/DREP/RPB	2 2
	NRR/DRIS/SIB	1 1	NRR/PMAS/ILRB	1 1
	REG FILE 02	1 1	RES DEPY GI	1 1
	RES TELFORD, J	1 1	RES/DE/EIB	1 1
	RGN5 FILE 01	1 1		
EXTERNAL:	EG&G GROH, M	5 5	H ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
	NSIC HARRIS, J	1 1	NSIC MAYS, G	1 1
NOTES:		1 1		

TOTAL NUMBER OF COPIES REQUIRED: LTTR 47 ENCL 46

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 2	DOCKET NUMBER (2) 0 5 0 1 0 0 5 1 2 9	PAGE (3) 1 OF 0 4
---	---	-----------------------------

TITLE (4) **Both Trains of Control Room Essential Filtration System Inoperable During Maintenance Due to Inadequate Design**

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		
0 4	2 3	8 6	8 6	0 4 4	0 1	1 0	1 5	8 7	N/A		
									DOCKET NUMBER(S) 0 5 0 1 0 0		

OPERATING MODE (9) 3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(c)	<input type="checkbox"/> 60.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 60.38(c)(1)	<input checked="" type="checkbox"/> 60.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 60.38(c)(2)	<input checked="" type="checkbox"/> 60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input checked="" type="checkbox"/> 60.73(a)(2)(i)	<input type="checkbox"/> 60.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 60.73(a)(2)(ii)	<input type="checkbox"/> 60.73(a)(2)(viii)(B)							
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 60.73(a)(2)(iii)	<input type="checkbox"/> 60.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)

NAME Thomas R. Bradish, Compliance Supervisor	TELEPHONE NUMBER
	AREA CODE: 6 1 0 2 NUMBER: 3 1 9 1 3 1 - 1 3 1 5 1 3 1 1

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (16) MONTH: DAY: YEAR:
--	--	--

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (18)

On May 15, 1987, it was discovered that beginning on April 23, 1986 at 1500 MST through April 25, 1986 at 1004, with Palo Verde Unit 2 in Mode 3 (HOT STANDBY), both independent trains of the Control Room Essential Filtration System (CREFS) were inoperable as a result of a maintenance activity being conducted on one train. With both trains of CREFS inoperable, the ACTION Statement for Technical Specification 3.7.7 was exceeded and Limiting Condition for Operation 3.0.3 should have been entered.

As a result of an engineering evaluation, it was discovered that the design of the CREFS is such that the opening of a single duct or housing access door in either train of CREFS can prevent the unaffected train from meeting the Control Room pressurization requirement of Technical Specification 4.7.7.d.3. A subsequent review of the work conducted on this system led to the discovery of the CREFS' April 23, 1986 inoperability.

Interim controls have been established to preclude unauthorized opening of the doors/inspection panels affecting the Control Room pressure boundary. As long term corrective action to prevent recurrence, a Plant Change Request has been initiated to install a pair of isolation dampers in each train of CREFS for Units 1, 2, and 3.

There have been no previous similar events reported regarding the inoperability of both independent trains of a safety system due to the system design.

8710260275 871015
PDR ADDCK 05000529
S PDR

Handwritten: 1422
11/

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Palo Verde Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 5 2 9 8 6	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		86	044	01	02	OF	04

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

On May 15, 1987, it was discovered that beginning on April 23, 1986 at 1500 MST through April 25, 1986 at 1004, with Palo Verde Unit 2 in Mode 3 (HOT STANDBY), both independent trains of the Control Room Essential Filtration System (CREFS)(VI) were inoperable as a result of maintenance activity being conducted on one train. With both trains of the CREFS inoperable, the ACTION Statement for Technical Specification 3.7.7 was exceeded and Limiting Condition for Operation 3.0.3 should have been entered. Both trains of CREFS were inoperable for approximately 1 day, 19 hours.

A potential concern was identified during a design review for Control Room (NA) habitability and an Engineering Evaluation Request (EER) was initiated. The EER was dispositioned to document that the design of the CREFS is such that the opening of either train of CREFS can prevent the unaffected train from meeting the Control Room pressurization requirement of Technical Specification 4.7.7.d.3. Technical Specification 4.7.7.d.3 states that the CREFS must maintain the Control Room at a positive pressure of greater than or equal to 1/8-inch Water Gauge relative to adjacent areas during system operation at a makeup flow rate to the control room of less than or equal to 1000 cubic feet per minute.

Although the CREFS design meets the applicable requirements of the Palo Verde Technical Specifications and the Final Safety Analysis Report, the root cause of this event has been determined to be the system design by the Palo Verde Architect/Engineer which did not take into account the need to perform required surveillance testing or maintenance activities on one train of CREFS during plant operation.

As immediate corrective action, Night Orders were issued to Licensed personnel in Units 1, 2, and 3 identifying the problem and requiring that Unit Supervision be notified prior to permitting any breach of the Control Room Pressure boundary. Caution labels were then manufactured and have been attached to all doors/inspection panels which affect the Control Room Pressure boundary. These labels identify the requirement to notify the Shift Supervisor prior to opening the doors/inspection panels.

Following disposition of the EER, the Palo Verde Plant Review Board (PRB) developed a project position that the performance of surveillance tests and preventive maintenance does not render the Control Room pressure boundary inoperable as these evolutions are necessary, are short in nature, and are easily restored. These evolutions may be likened to the opening and closing of the Control Room access doors. However, extended maintenance evolutions were determined to be unacceptable when the CREFS is required to be operable by Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Palo Verde Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 5 2 9 8 6	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		86	044	01	03	OF 04

TEXT (If more space is required, use additional NRC Form 368A's) (17)

Subsequent to the PRB decision, Operation's procedure "CONTROL BUILDING HVAC (HJ)" was revised to include specific guidelines for allowing the Control Room pressure boundary to be breached. Based on the PRB position, a review was conducted for Units 1 and 2 to determine if previous maintenance activities could have rendered both Trains of CREFS inoperable. On May 15, 1987 it was identified that on April 23, 1986 the CREFS Train "A" essential fan (FAN) had been removed for bearing replacement. This maintenance activity left an unattended opening in the ducting and rendered both CREFS trains inoperable due to the fact that neither train can be isolated from the Control Room without installing temporary blankouts in the ducting of the affected CREFS train.

As long term corrective action to prevent recurrence, a Plant Change Request has been initiated to install a pair of isolation dampers in each train of the CREFS for Units 1, 2, and 3.

The CREFS is designed to provide the required environment for personnel occupancy and equipment operation in the Control Room during emergency conditions. On April 23, 1986, with Unit 2 in Mode 3 (HOT STANDBY), the CREFS Train "A" had been declared inoperable for essential fan bearing replacement. This maintenance activity rendered both trains of CREFS inoperable. Unit 2 had reached Initial Criticality-Mode 2 (STARTUP) on April 18, 1986 where it had remained for approximately four days before being returned to Mode 3. At the time of the event, Unit 1 was in Mode 5 (COLD SHUTDOWN) for an outage and had been there since March 10, 1986.

A review of the reactor power level history just prior to the event was conducted for Units 1 and 2 and the data was utilized to determine the nuclide composition in the reactor fuel elements (AC) during the event. The nuclide inventories were also estimated for the Unit 1 and 2 Waste Gas Decay Tanks (WE)(TK) just prior to the event. An engineering evaluation was then conducted to determine whether or not 10CFR 50, Appendix A, Criterion 19 regarding control room habitability would have been met during postulated worst case accident scenarios. The scenarios considered were the Loss of Coolant Accident (LOCA) which could occur in either Unit 1 or 2 and the Waste Gas Decay Tank Rupture which could occur in either Unit 1 or 2. The results of the evaluation indicate that adequate radiation protection would have been provided to permit access and occupancy of the Unit 2 control room under these accident conditions without personnel receiving radiation exposures in excess of those specified in Criterion 19. In addition, since no spent fuel was stored on site during the event, there was no threat from a fuel handling accident. Therefore, this event posed no actual threat to the health and safety of the public.

There were no structures, components, or systems that were inoperable at the start of the event, other than those previously described, that contributed to the event. There were no unusual characteristics of the work location which contributed to the event. There were no automatic or manually initiated safety system responses.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Palo Verde Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 5 2 9	LER NUMBER (8)				PAGE (3)			
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER					
		8 6	- 0 4 4	- 0 1	0 4	OF	0 4		

TEXT (If more space is required, use additional NRC Form 365A's) (17)

There have been no previous similar events reported regarding the inoperability of two independent trains of a safety related system due to the system design.



.....

.

.

.



Arizona Nuclear Power Project

P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034 .

192-00294-JGH/TRB/TJB

October 15, 1987

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529
Licensee Event Report 2-86-044-00
File: 87-020-404

1987 OCT 26 A 9:47
USNRC-DS

Attached please find Supplement No. 1 to Licensee Event Report (LER) No. 2-86-044-00 prepared and submitted pursuant to the requirements of 10 CFR 50.73(d). We are herewith forwarding a copy of this report to the Regional Administrator of the Region V Office.

If you have any questions, please contact T. R. Bradish, Compliance Supervisor at (602) 393-3531.

Very truly yours,

J. G. Haynes / *swb*
J. G. Haynes
Vice President
Nuclear Production

JGH/TJB/cld

Attachment

cc: O. M. DeMichele (all w/a)
E. E. Van Brunt, Jr.
J. B. Martin
J. R. Ball
R. C. Sorenson
E. A. Licitra
A. C. Gehr
INPO Records Center

JE22
11