

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9112090450 DOC.DATE: 91/11/30 NOTARIZED: NO DOCKET #  
 FACIL:STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530  
 AUTH.NAME AUTHOR AFFILIATION  
 BRADISH,T.R. Arizona Public Service Co. (formerly Arizona Nuclear Power  
 LEVINE,J.M. Arizona Public Service Co. (formerly Arizona Nuclear Power  
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-011-00:on 911104,auxiliary feedwater flow  
 transmitters equalizing valve found improperly aligned.  
 Cause not determined.Valves aligned properly.W/911130 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 7  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Standardized plant.

05000530

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INTERNAL:	ACNW		2	2		ACRS		2	2
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	AEOD/ROAB/DSP		2	2		NRR/DET/ECMB 9H		1	1
	NRR/DET/EMEB 7E		1	1		NRR/DLPQ/LHFB10		1	1
	NRR/DLPQ/LPEB10		1	1		NRR/DOEA/OEAB		1	1
	NRR/DREP/PRPB11		2	2		NRR/DST/SELB 8D		1	1
	NRR/DST/SICB8H3		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 MURPHY,G.A		1	1
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NOTES:			1	1					

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AD4



Arizona Public Service Company  
PALO VERDE NUCLEAR GENERATING STATION  
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

JAMES M. LEVINE  
VICE PRESIDENT  
NUCLEAR PRODUCTION

192-00758-JML/TRB/KR  
November 30, 1991

U. S. Nuclear Regulatory Commission  
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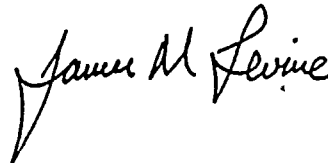
Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 3  
Docket No. STN 50-530 (License No. NPF-74)  
Licensee Event Report 91-011-00  
File: 91-020-404

Attached please find Licensee Event Report (LER) 91-011-00 prepared and submitted pursuant to 10CFR50.73. In accordance with 10CFR50.73(d), a copy of this LER is being forwarded to the Regional Administrator, NRC Region V.

If you have any questions, please contact Thomas R. Bradish, Compliance Manager, at (602) 393-2521.

Very truly yours,



JML/TRB/KR

Attachment

cc: W. F. Conway (all with attachment)  
J. B. Martin  
D. H. Coe  
INPO Records Center

9112090450 911130  
PDR Adock OS 000530  
PDR

JE271



## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 3 DOCKET NUMBER (2) 0 5 0 0 0 5 3 0 1 OF 0 6

TITLE (4) Auxiliary Feedwater Flow Transmitters Equalizing Valve Improperly Aligned

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	1	0	4	9	1	9	1	0	1	1	3	0	9	1	N/A	0 5 0 0 0 0
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)													
1			20.402(b)			20.405(c)			50.73(a)(2)(iv)			73.71(b)				
POWER LEVEL (10)			20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)				
1 0 0			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)			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 Thomas R. Bradish, Compliance Manager TELEPHONE NUMBER 6 0 2 3 9 3 - 1 2 5 2 1  
AREA CODE

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	

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)

On November 4, 1991, at approximately 2342 MST, Palo Verde Unit 3 was in Mode 1 (POWER OPERATION) operating at approximately 100 percent power when an auxiliary operator (AO) assisting in the performance of a surveillance test (ST) discovered that the Channel "B" auxiliary feedwater flow transmitter AFB-FT-41B equalizing valve was improperly aligned. The AO notified the Control Room reactor operator designated as the ST Test Leader of the improper valve alignment. While waiting for Control Room response, the AO discovered that the other Channel "B" auxiliary feedwater flow transmitter AFB-FT-41A equalizing valve was also improperly aligned. Since both Channel "B" flow transmitters were found to be improperly aligned, one less than the required number of channels (i.e., two) specified in the Technical Specification (TS) Limiting Condition for Operation (LCO) 3.3.3.6 was operable. Since it has not been determined when the flow transmitter equalizing valves were manipulated, it is assumed that the OPERABILITY requirements and the associated seven (7) day ACTION were not met for TS LCO 3.3.3.6 since the last time that the flow transmitters were determined to be operating properly on October 27, 1991.

Based upon the results of the investigation, the cause of the auxiliary feedwater flow transmitter equalizing valves being improperly aligned has not been determined.

There have been no previous similar events reported pursuant to 10CFR50.73.



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## I. DESCRIPTION OF WHAT OCCURRED:

## A. Initial Conditions:

At 2342 MST on November 4, 1991, Palo Verde Unit 3 was in Mode 1 (POWER OPERATION) operating at approximately 100 percent power.

## B. Reportable Event Description (Including Dates and Approximate Times of Major Occurrences):

Event Classification: Condition prohibited by the plant's Technical Specifications (TS).

The auxiliary feedwater (BA) flow to each steam generator (AB) is monitored by redundant flow transmitters. Auxiliary feedwater flow transmitters (FT)(BA) AFA-FT-40A and AFB-FT-41A monitor flow to steam generator 1 and AFA-FT-40B and AFB-FT-41B monitor flow to steam generator 2. The auxiliary feedwater flow transmitters are part of the Emergency Response Facilities Data Acquisition and Display System (ERFDADS) (IP), which displays flow in the Technical Support Center (TSC). The flow signals are also transmitted to the Quality Safety Parameter Display System (QSPDS) (IP). The same auxiliary feedwater flows are also displayed in the Main Control Room flow indication instrumentation (Channel "A" AFA-FI-40A and Channel "B" AFB-FI-41A) and the Remote Shutdown Panel flow indication instrumentation (Channel "A" AFA-FI-40B and Channel "B" AFB-FI-41B). Auxiliary feedwater flow transmitters AFA-FT-40A (steam generator 1) and AFA-FT-40B (steam generator 2) provide Channel "A" auxiliary feedwater flow indication. Auxiliary feedwater flow transmitters AFB-FT-41A (steam generator 1) and AFB-FT-41B (steam generator 2) provide Channel "B" auxiliary feedwater flow indication.

Technical Specification (TS) section "Post-Accident Monitoring Instrumentation" Limiting Condition for Operation (LCO) 3.3.3.6 states that the post-accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE. The post-accident monitoring instrumentation table includes two (2) required channels for auxiliary feedwater flow rate. The applicable ACTION states that with the number of OPERABLE channels one less than the required number of channels, either restore the inoperable channel to OPERABLE status within seven (7) days, or be in HOT SHUTDOWN (Mode 4) within the next twelve (12) hours.

On November 4, 1991, at approximately 2342 MST, an auxiliary operator (AO) (utility, non-licensed) assisting in the performance of a surveillance test (ST) discovered that the Channel "B"





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TEXT

auxiliary feedwater flow transmitter AFB-FT-41B equalizing valve (V) was improperly aligned. The AO notified the Control Room reactor operator (utility, licensed) designated as the ST Test Leader of the improper valve alignment. While waiting for Control Room response, the AO discovered that the other Channel "B" auxiliary feedwater flow transmitter AFB-FT-41A equalizing valve was also improperly aligned. The AO notified the ST Test Leader of the second improper valve alignment. At approximately 0001 MST on November 5, 1991, the Control Room Shift Supervisor (utility, licensed) declared the Channel "B" auxiliary feedwater flow transmitters inoperable and entered TS section "Post-Accident Monitoring Instrumentation" LCO 3.3.3.6 ACTION 29. The Shift Supervisor directed the Instrument and Control (I&C) technicians to verify the Channel "B" flow transmitter valve alignments and to perform a complete Channel "A" and Channel "B" auxiliary feedwater instrumentation valve alignment verification. The I&C technicians found no other valve alignment deficiencies. Following proper alignment of the Channel "B" auxiliary feedwater flow transmitter equalizing valves, the Shift Supervisor declared the flow transmitters operable and exited the ACTION statement.

An independent investigation of this event was conducted in accordance with the APS Incident Investigation Program. The investigation determined that the Channel "B" flow transmitters were operable on October 27, 1991. At approximately 0722 MST on October 27, 1991, a reactor trip occurred in Unit 3 (LER 528/91-010). Following the reactor trip, a Control Room reactor operator (utility, licensed) observed the Channel "A" AFA-FI-40A and Channel "B" AFB-FI-41A auxiliary feedwater flow indication instrumentation to be operating properly. Through a review of equipment history, the investigation also determined that no maintenance activities or surveillance testing which may have manipulated the equalizing valves occurred on the auxiliary feedwater flow transmitters since October 27, 1991 when they were last determined to be operable.

Since both Channel "B" flow transmitters were found to be improperly aligned, one less than the required number of channels (i.e., two) specified in the TS LCO 3.3.3.6 was operable. Since it has not been determined when the flow transmitter equalizing valves were manipulated, it is assumed that the OPERABILITY requirements and the associated seven (7) day ACTION were not met for TS LCO 3.3.3.6 since the last time that the flow transmitters were determined to be operating properly on October 27, 1991.



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- C. Status of structures, systems, or components that were inoperable at the start of the event that contributed to the event:

Auxiliary feedwater flow transmitters AFB-FT-41A (steam generator 1) and AFB-FT-41B (steam generator 2) providing Channel "B" auxiliary feedwater flow indication, were declared inoperable at approximately 0001 MST on November 15, 1991. In accordance with the Essential Auxiliary Feedwater System Instrument Valve Alignment List procedure, the equalizing valves' required position is closed. The AO discovered the valves to be open.

- D. Cause of each component or system failure, if known:

Not applicable - no component or system failures were involved.

- E. Failure mode, mechanism, and effect of each failed component, if known:

Not applicable - no component failures were involved.

- F. For failures of components with multiple functions, list of systems or secondary functions that were also affected:

Not applicable - no failures of components with multiple functions were involved.

- G. For a failure that rendered a train of a safety system inoperable, estimated time elapsed from the discovery of the failure until the train was returned to service:

Not applicable - no failures that rendered a train of a safety system inoperable were involved.

- H. Method of discovery of each component or system failure or procedural error:

Not applicable - there have been no component or system failures or procedural errors identified. There were no procedural errors which contributed to this event.

- I. Cause of Event:

Based upon the results of the investigation, the cause of the auxiliary feedwater flow transmitter equalizing valves being improperly aligned has not been determined (SALP Cause Code X: Other).



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TEXT

No unusual characteristics of the work location (e.g., noise, heat, poor lighting) were determined to have directly contributed to this event. There were no known procedural errors which contributed to this event. There were no known personnel errors which contributed to this event.

If through further investigation, it is determine when or how the auxiliary feedwater flow transmitter equalizing valves were misaligned, a supplement to this report will be submitted.

J. Safety System Response:

Not applicable - there were no (other) safety system responses and none were necessary.

K. Failed Component Information:

Not applicable - no component failures were involved.

II. ASSESSMENT OF THE SAFETY CONSEQUENCES AND IMPLICATIONS OF THIS EVENT:

OPERABILITY of the post-accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident," December, 1975 and NUREG 0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations." As described above, two channels of auxiliary feedwater flow transmitters are available to monitor the auxiliary feedwater flow to each steam generator. Channel "A" was available during the time that Channel "B" was determined to be inoperable. Therefore, the redundant channel would have been available to monitor and assess flow to the steam generators following an accident, had one occurred.

The event did not result in any challenges to the fission product barriers or result in any releases of radioactive materials. Therefore, there were no other adverse safety consequences or implications as a result of this event. This event did not adversely affect the safe operation of the plant or the health and safety of the public.



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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT

## III. CORRECTIVE ACTION:

## A. Immediate:

The Channel "B" auxiliary feed flow transmitter equalizing valves were properly aligned and a complete Channel "A" and Channel "B" auxiliary feedwater instrumentation valve alignment verification was performed.

## B. Action to Prevent Recurrence:

Since the cause of the event has not been determined by the investigation, actions to prevent recurrence have not been developed.

Since the discovery of the valve misalignment, the atmospheric dump valves (SB) and both auxiliary feedwater pumps (P) have been functionally tested. In addition, a verification of valve alignment has been performed on components within the Main Steam Support Structure (NM) [i.e., feedwater isolation valves (SJ)(ISV) and main steam isolation valves (SB)(ISV)].

If through further investigation, it is determine when or how the auxiliary feedwater flow transmitter equalizing valves were misaligned, a supplement to this report will be submitted. Corrective actions will be included in the supplement.

## IV. PREVIOUS SIMILAR EVENTS:

Although there have been other events in which equipment was inoperable due to misaligned valves, there have been no similar events in which the root cause is indeterminant.

