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 FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
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 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-023-00:on 890208,ventilation turning vanes not
 seismically qualified.

W/8 ltr.

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NOTES:

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A04

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

JAMES M. LEVINE
VICE PRESIDENT
NUCLEAR PRODUCTION

192-00616-JML/TRB/SBJ
January 8, 1990

U. S. Nuclear Regulatory Commission
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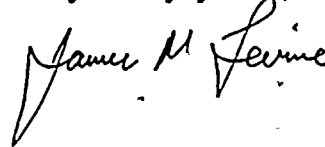
Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528 (License No. NPF-41)
Licensee Event Report 1-89-023-00
File: 90-020-404

Attached please find Licensee Event Report (LER) No. 1-89-023-00 prepared and submitted pursuant to 10CFR50.73. In accordance with 10CFR50.73(d), we are herewith forwarding a copy of the LER to the Regional Administrator of the Region V office.

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

Very truly yours,



JML/TRB/SBJ/kj

Attachment

cc: W. F. Conway (all w/a)
E. E. Van Brunt
J. B. Martin
D. Coe
M. J. Davis
A. C. Gehr
INPO Records Center

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PDR ADQCK 05000528
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LICENSEE EVENT REPORT (LER)

FACILITY NAME Palo Verde Unit 1	DOCKET NUMBER 0 5 0 0 0 5 2 8	PAGE 1 OF 0 6
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TITLE

Ventilation Turning Vanes Not Seismically Qualified

EVENT DATE			LER NUMBER			REPORT DATE			OTHER FACILITIES INVOLVED										
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)								
0	2	0	8	8	9	8	9	0	2	3	0	0	1	0	8	9	0	N/A	0 5 0 0 0 0
OPERATING MODE 6			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following)																
POWER LEVEL 0 0 0			20.402(b)			20.406(a)			80.73(a)(2)(i-v)			73.71(b)							
			20.406(a)(1)(i)			80.38(a)(1)			80.73(a)(2)(v)			73.71(c)							
			20.406(a)(1)(ii)			80.38(a)(2)			80.73(a)(2)(vii)			OTHER (Specify in Abstract below and in Text)							
			20.406(a)(1)(iii)			80.73(a)(2)(ii)			80.73(a)(2)(viii)(A)										
			20.406(a)(1)(iv)			80.73(a)(2)(iii)			80.73(a)(2)(viii)(B)										
			20.406(a)(1)(v)			80.73(a)(2)(iii)			80.73(a)(2)(ii)										

LICENSEE CONTACT FOR THIS LER

NAME Thomas R. Bradish, (Acting) Compliance Manager	TELEPHONE NUMBER 6 0 2 3 9 3 - 2 5 2 1
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	

SUPPLEMENTAL REPORT EXPECTED

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

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

On December 8, 1989 at approximately 1500 MST Palo Verde Unit 1 was in Mode 6 (REFUELING) when the Shift Supervisor declared the engineered safety feature (ESF) equipment room essential ventilation fans inoperable after receiving information that turning vanes in the ESF equipment room ventilation and the auxiliary building ventilation were not seismically qualified. The normal ventilation fans were available to provide cooling. The condition did not effect the immediate operability of any plant equipment.

The cause of this event was an inadequate administrative program to ensure significant conditions were escalated to management for appropriate disposition.

As immediate corrective action, bracing was installed on the ESF equipment room ventilation duct to provide required stiffness and the air handling units were declared operable at approximately 0635 MST on December 14, 1989. Bracing is being installed on the auxiliary building ventilation duct. This work will be complete prior to entry into mode 4.

Although not a specific corrective action for this report, a material non-conformance program has been implemented which requires an engineering justification that a condition will not adversely effect a component in order for a system to remain operable.

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

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

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

On December 8, 1989, Palo Verde Unit 1 was in Mode 6 with the reactor coolant system (RCS)(AB) at atmospheric pressure and approximately 90 degrees Fahrenheit.

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

Event Classification: Condition outside the design basis of the plant.

On December 8, 1989 at approximately 1500 MST the Unit 1 Shift Supervisor (utility, licensed) declared the auxiliary building ventilation and engineered safety feature (ESF) equipment room essential ventilation fans inoperable. This action was taken after reviewing information in a material non-conformance report (MNCR) that questioned the seismic qualification of turning vanes in the auxiliary building ventilation and the ESF equipment room ventilation. In accordance with an approved work document, braces were added to the ventilation duct and the essential ventilation fans were declared operable at approximately 0645 MST on December 14, 1989.

The Unit 1 plant ventilation systems were manufactured and installed by Waldinger Corporation. In order to more efficiently move air through the duct work, turning vanes were installed at 90 degree corners. In 1984, a Supplier Deviation Disposition Request (SDDR) was approved that permitted fabrication and installation of turning vanes prior to completion of seismic qualification testing on the turning vanes. In December 1984 the seismic analysis on the turning vanes was completed and an SDDR was issued that identified several turning vanes that required additional bracing on the ventilation duct to ensure they met seismic qualification. An Engineering Evaluation Request (EER) was written and approved in February of 1985 requiring the recommendations of the December 1984 SDDR to be implemented. Subsequently a work order was generated. There is no documentation retrievable that indicates the EER or work order received an evaluation for operability effects.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 9	— 0 2 3	— 0 0	0 3	OF	0 6

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In December 1989, a maintenance planner (contractor, non-licensed) was reviewing the work order in preparation to update the work order for work performance. The planner noted the reason for the work order, the 1985 EER, and contacted the system engineer (contractor, non-licensed). On December 7, 1989 the system engineer initiated a material non-conformance report (MNCR). The Shift Supervisor received a copy of the MNCR per the MNCR procedure on December 8, 1989. The System Engineer visually verified that the appropriate bracing existed in Units 2 and 3.

The essential air handling units (AHU) for the ESF equipment room were declared inoperable at approximately 1500 MST on December 8, 1989. A 7-day action statement to restore the essential AHUs to operable status was entered after it was verified the normal AHU could maintain room temperatures. On December 14, 1989 at approximately 0625 MST the turning vanes associated with the essential AHUs had stiffeners installed and the system was declared operable.

The turning vanes in the auxiliary building ventilation are in the vicinity of the isolation dampers on the 100 foot elevation. These dampers isolate on a safety injection actuation signal (SIAS)(JE)(BP). With the unit in Mode 6, the isolation dampers are not required. Therefore operability of ventilation was not affected. The addition of stiffeners to the turning vanes is in progress and will be completed prior to entry into Mode 4.

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

Not applicable - no structures, systems, or components were inoperable that contributed to the event.

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

Not applicable - there were no component or system failures.

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

There were no component or system failures. However, the condition described in the report could permit the turning vanes to come out of the alignment channel during a seismic event due to flexing of the supporting duct work. If this occurred the turning vanes could impact and damage fans or dampers located in the

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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

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vicinity of the turning vanes.

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

No components with multiple functions were involved.

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

The essential fans to the ESF equipment room were declared inoperable at approximately 1500 MST on December 8, 1989. The fans were declared operable at 0645 MST on December 14, 1989.

The ESF equipment room essential ventilation fans were inoperable for approximately 136 hours after rediscovery of the condition on December 8, 1989. The condition described in this report has existed in Unit 1 since initial startup.

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

A planner reviewed the work order to determine if the work order required revision prior to performance of the work. During this review, the planner noted the significance of the condition and initiated an MNCR.

- I. Cause of Event:

The root cause of the work not being performed prior to Unit 1 startup was an inadequate administrative control program that permitted the system to be declared operable with a known deficiency. The existing administrative control program did not ensure deficiencies were escalated to management's attention and appropriate actions taken.

- J. Safety System Response:

Not applicable - there were no safety system response.

- K. Failed Component Information:

Not applicable - there were no component failures.

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

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

The installation of the turning vanes without the ventilation duct being stiffened could only affect the plant during a seismic event. If a seismic event occurred, the duct work associated with the turning vanes may flex enough to allow the turning vanes to disengage from the alignment channel.

Loose turning vanes near the emergency fans could prevent the fans from providing ventilation flow to the ESF equipment room. The equipment in the rooms affected by the ventilation is necessary for safe shutdown. Per a design calculation performed for the station blackout analysis, ESF equipment room would not reach maximum equipment qualification temperature for at least 30 hours. Plant procedures for shutdown after an earthquake require equipment inspections and verification of equipment operation. These inspections would identify any adverse condition with the ventilation fans and appropriate compensatory measures such as opening doors and providing forced circulation could be taken.

The turning vanes in the auxiliary building ventilation are located in the vicinity of isolation dampers for the 100 foot elevation of the auxiliary building. These dampers only isolate on a safety injection actuation signal. Following a seismic event, Loss of Coolant Accident is not assumed, thus a SIAS signal would not be generated. The unit will go through a controlled shutdown. Therefore, this condition would not have prevented the safe shutdown of the unit following a seismic event.

III. CORRECTIVE ACTIONS:

A. Immediate

Braces were installed on the ESF equipment room ventilation duct to provide stiffness to prevent turning vane movement. The braces are being added to the auxiliary ventilation duct. This will be completed prior to entry into Mode 4.

B. Action to Prevent Recurrence:

The MNCR program requires engineering justification that a condition will not adversely affect a component in order for the system to remain operable. This program, which was put in place

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FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Palo Verde Unit 1

0 5 0 0 0 5 2 8 8 9 — 0 2 3 — 0 0 0 6 OF 0 6

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

prior to the rediscovery of the condition and was used during this event to escalate the condition to management attention, is expected to prevent recurrence of this type of oversight.

Backlogged work orders will be reviewed to determine if the operability of safety systems is effected. This will be completed prior to startup.

IV. PREVIOUS SIMILAR EVENTS:

There have been no similar events reported in which an uncorrected identified deficiency caused the plant to be outside of the design basis.

