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SUBJECT: LER 89-004-00:on 890617,operability & action requirements of Tech Spec 3.8.1.1.a not met.W/890717 ltr.
W/8 ltr.

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Arizona Public Service Company

PALO VERDE NUCLEAR GENERATING STATION
P O BOX 52034 • PHOENIX, ARIZONA 85072-2034

192-00499-JGH/TDS/RKR
July 17, 1989

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529 (License No. NPF-51)
Licensee Event Report 89-004-00
File: 89-020-404

Attached please find Licensee Event Report (LER) No. 89-004-00 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. D. Shriver, Compliance Manager at (602) 393-2521.

Very truly yours,

J. G. Haynes
Vice President
Nuclear Production

JGH/TDS/RKR/bjh

Attachment

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NRC Form 366
(9-83)

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)
Palo Verde Unit 2	0 5 0 0 0 5 2 9	1 OF 0 7

TITLE (4)

Technical Specification Action Requirement Performed Late Due to Personnel Error

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 6	1 7	8 9	8 9	0 0 4	0 0	0 7	1 7	8 9	N/A	0 5 0 0 0
									N/A	0 5 0 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 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
Timothy D. Shriver, Compliance Manager	6 0 2 3 9 3 - 2 5 2 1

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 June 17, 1989, at approximately 0320 MST, Palo Verde Unit 2 was in Mode 3 (Hot Standby) when the Shift Supervisor discovered that the OPERABILITY and ACTION requirements of Technical Specification 3.8.1.1.a had not been met as a result of the onsite Class 1E distribution system not being supplied by two physically independent circuits. Both Class 1E busses were being supplied by a single startup transformer.

The cause of the missed ACTION was a cognitive personnel error by the operations personnel.

As immediate corrective action, one of the 4.16 KV Class 1E busses was shifted to its normal power supply. As corrective action to prevent recurrence, personnel involved were counseled, Unit 2 personnel were briefed on the need for thorough shift turnovers and that they be cognizant of bus alignment, and a precaution was added to the 13.8 KV electrical system operating procedure.

A previous similar event was reported in Unit 2 LER 529/88-003.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Palo Verde Unit 2	0 5 0 0 0 5 2 9	8 9	— 0 0 4	— 0 0	0 2 OF 0 7

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

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

On June 17, 1989, at approximately 0320 MST, Palo Verde Unit 2 was in Mode 3 (Hot Standby) at normal operating temperature and pressure.

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

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

At approximately 0320 MST on June 17, 1989, the Unit 2 Shift Supervisor (utility, licensed) discovered that the OPERABILITY and ACTION requirements of Technical Specification (TS) 3.8.1.1.a had not been met as a result of the onsite Class 1E distribution system (EB) not being supplied by two physically independent circuits (EA). TS 3.8.1.1 ACTION a. requires that with one offsite circuit inoperable, the OPERABILITY of the remaining offsite circuit be demonstrated within one hour and at least once per eight hours thereafter by verifying correct breaker alignment indicating power availability.

Palo Verde Nuclear Generating Station (PVNGS) is a 3 unit site. Three startup transformers (XFMR)(EA)(NAN-X01, NAN-X02, and NAN-X03) supply power to the 13.8 KV onsite distribution system (EA) for each unit. NAN-X01 supplies normal power to Unit 2 Bus 2E-NAN-S05 (BU)(EA) and Unit 3 Bus 3E-NAN-S06 (BU)(EA). NAN-X02 supplies normal power to Unit 1 Bus 1E-NAN-S06 (BU)(EA) and Unit 3 Bus 3E-NAN-S05 (BU)(EA). NAN-X03 supplies normal power to Unit 1 Bus 1E-NAN-S05 (BU)(EA) and Unit 2 Bus 2E-NAN-S06 (BU)(EA). Each startup transformer is also the alternate power source for its respective unit. For example, NAN-X01 is the alternate power source for Unit 1 Busses 1E-NAN-S05 and 1E-NAN-S06. Each 13.8 KV bus supplies a 4.16 KV Class 1E bus (BU)(EB). This configuration provides two independent circuits for each unit from the switchyard (FK) to the onsite Class 1E distribution system.

Prior to the event, normal maintenance was scheduled for NAN-X01 and NAN-X03. This required transferring the busses being supplied by the startup transformers to their alternate power source. The bus transfers are

performed in accordance with an approved procedure. At approximately 0143 MST on June 15, 1989, Bus 2E-NAN-S05 was shifted from its normal power source (Startup Transformer NAN-X01) to its alternate power source (Startup Transformer NAN-X02) to allow maintenance on Startup Transformer NAN-X01. At approximately 0348 MST on June 15, 1989 NAN-X01 was deenergized for maintenance. NAN-X01 was reenergized at approximately 0604 MST when maintenance was complete. At approximately 0610 MST on June 16, 1989 the Unit 1 Shift Supervisor (utility, licensed) informed the Unit 2 and Unit 3 Shift Supervisors (utility, licensed) that Startup Transformer NAN-X01 had been returned to service and that Startup Transformer NAN-X03 was going to be deenergized later in the day for scheduled maintenance.

In preparation for maintenance on Startup Transformer NAN-X03, the need to shift 2E-NAN-S06 from Startup Transformer NAN-X03 was discussed during the Unit 2 shift turnover at approximately 0700 MST. However, the status of 2E-NAN-S05 not being on its normal power source was not discussed. At approximately 1037 MST on June 16, 1989, 2E-NAN-S06 was shifted from its normal power source (NAN-X03) to its backup power source (NAN-X02) in accordance with an approved procedure. This resulted in both Unit 2 13.8 KV busses being supplied by the same Startup Transformer (NAN-X02). As a result, the Unit 2 Class 1E busses were not being supplied by two physically independent circuits which required entry into ACTION a. of TS 3.8.1.1.

At approximately 0320 MST on June 17, 1989, the Unit 1 Shift Supervisor contacted the Unit 2 Shift Supervisor and discussed the fact that Busses 2E-NAN-S05 and 2E-NAN-S06 were both being powered from startup transformer NAN-X02. The Unit 2 Shift Supervisor immediately declared 2E-NAN-S06 inoperable and entered ACTION Statement a. of TS 3.8.1.1. At approximately 0326 MST on June 17, 1989, 2E-NAN-S05 was shifted to its normal power supply in accordance with approved procedures. Bus 2E-NAN-S06 was declared OPERABLE and ACTION a. of TS 3.8.1.1 was exited. Unit 2 completed the one hour requirements of TS 3.8.1.1 ACTION a. at approximately 0418 MST.

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

As described in Section I.B, Startup Transformer NAN-X03

(XFMR)(EA) was inoperable for maintenance. No other structures, systems, or components were inoperable at the start of the event which contributed to this event.

The required offsite circuit was returned to OPERABLE status approximately six minutes after the Unit 2 Shift Supervisor discovered it was inoperable. The offsite circuit was inoperable for approximately 16 hours 43 minutes prior to discovery by the Unit 2 Shift Supervisor.

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 component failures 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 train was returned to service:

Not applicable - no component failures were involved.

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

Not applicable - there were no component or system failures or procedural errors.

I. Cause of Event:

The cause of the event was a cognitive personnel error by the operations personnel (utility, licensed) responsible for being aware of the abnormal plant configuration. The responsible individuals did not recognize the effects of the plant configuration discussed in Section I.B and did not take the appropriate ACTIONS required by TS 3.8.1.1. Not discussing the abnormal electrical lineup during shift turnover may have contributed to the event.

Not taking the appropriate ACTIONS required by TS 3.8.1.1 is contrary to approved procedures. There were no procedural errors. The transfer of the busses to a single startup transformer was done in accordance with an approved procedure. There were no unusual characteristics of the work location that directly contributed to the event.

An investigation of this event is being performed in accordance with the PVNGS Incident Investigation Program. If additional information is developed which would significantly alter the readers' perception of this event, a supplement to this LER will be submitted.

J. Safety System Response:

Not applicable - no safety system responses occurred 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:

The startup transformers (XFMR) are part of the offsite power distribution system (EA). The offsite power distribution system is designed to provide physically independent power supplies from the offsite transmission network to the 4.16 KV Class 1E busses (BU)(EB) for each Unit. The offsite power distribution system is the preferred power source for each 4.16 KV Class 1E bus. Emergency diesel generators (DG)(EB) are also available to provide standby power to each 4.16 KV Class 1E bus. The offsite power distribution system is designed such that, with a single failure, one offsite power supply would still be available to a single 4.16 KV Class 1E bus. With a complete loss of offsite power, the emergency diesel generators provide power to each 4.16 KV Class 1E bus.

In the event described in this LER, a single failure in the Startup Transformer NAN-X02 or Startup Transformer power supply would have resulted in the loss of offsite power to Unit 2.

The ACTION requirements of TS 3.8.1.1 (verification of correct breaker alignment) were successfully performed as described in Section I.B. Verification of correct breaker alignment is

also a weekly surveillance requirement of Technical Specification 3/4.8.1. The surveillances performed before and after the event demonstrated that breaker alignment was satisfactory. Both Emergency Diesel Generators were OPERABLE during the event and available to supply the 4.16 KV Class 1E busses upon a loss of their offsite power supplies. Therefore, there was no threat to the health and safety of the public.

III. CORRECTIVE ACTIONS:

A. Immediate:

Bus 2E-NAN-S05 was shifted to its normal power supply (Startup Transformer NAN-X01) as discussed in Section I.B.

B. Action to Prevent Recurrence:

The following actions to prevent recurrence are being taken:

1. Personnel involved with the event were counseled.

2. A night order was issued in Unit 2 to remind operations personnel of the need for thorough shift turnovers and that they be cognizant of bus alignment.

3. Yellow caution tags were placed on the control panel breaker controls to remind personnel that the requirements of TS 3.8.1.1 apply to any configuration changes. This is considered to be an interim corrective action. Continued use of the yellow caution tags will be based on the final corrective actions developed during the investigation of this event.

4. Although it was not part of the cause of this event, Unit 2 procedure 42OP-2NA01, "13.8 KV Electrical System (NA)" was revised to add a precaution to be aware of the requirements of Technical Specification 3.8.1.1 when in-plant electrical loads are being supplied from a single source. This is considered an enhancement to aid personnel in recognizing applicable Technical Specification requirements. The corresponding procedures for Units 1 and 3 were also revised.