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LEVINE,J.M. Arizona Public Service Co. (formerly Arizona Nuclear Power
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 94-001-01:on 940407,determined that surveillance testing of containment penetration conductor overcurrent protective devices.Caused by personnel error.Addl breakers were assigned to be tested.W/940819 ltr.

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

192-00904-JML/BAG/RJR
August 19, 1994

JAMES M. LEVINE
VICE PRESIDENT
NUCLEAR PRODUCTION

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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Washington, DC 20555

Dear Sirs:

Subject: **Palo Verde Nuclear Generating Station (PVNGS)**
Units 1, 2, and 3
Docket No. STN 50-528/529/530 (License No. NPF-41/51/74)
Licensee Event Report 94-001-01
File: 94-020-404

Attached please find supplement 1 to Licensee Event Report (LER) 94-001-00 prepared and submitted pursuant to 10 CFR 50.73. This supplement provides clarification on the test results of the additional breakers tested in April 1994. This supplement also clarifies the guidelines used to regroup breakers into the correct sample size. In accordance with 10 CFR 50.73(d), a copy of this LER is being forwarded to the Regional Administrator, USNRC Region IV.

If you have any questions, please contact Burton A. Grabo, Supervisor, Nuclear Regulatory Affairs, at (602) 393-6492.

Sincerely,

James M Levine

JML/BAG/RJR/rv
Attachment

cc: W. L. Stewart (all with attachment)
L. J. Callan
K. E. Perkins
K. E. Johnston
INPO Records Center

050034

IE22

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Palo Verde Unit 1	0 5 0 0 0 5 2 8	1 OF 0 7

TITLE (4)
Surveillance Requirement 4.8.4.1 Not Fully Met

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)
									Palo Verde Unit 2	0 5 0 0 0 5 2 9
0 4	0 7	9 4	9 4	0 0 1	0 1	0 8	1 9	9 4	Palo Verde Unit 3	0 5 0 0 0 5 3 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)	8 6	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
Burton A. Grabo, Supervisor, Nuclear Regulatory Affairs	6 0 2 3 9 3 - 6 4 9 2

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 April 7, 1994, Palo Verde Units 1 and 2 were in Mode 1 (POWER OPERATION) at approximately 86 percent power and Unit 3 was in its 4th refueling outage with the core off loaded to the spent fuel pool when APS Maintenance Standards personnel determined that surveillance testing of the containment penetration conductor overcurrent protective devices (molded case circuit breakers) did not fully comply with Technical Specification Surveillance Requirement (TS SR) 4.8.4.1. This surveillance requires a sample of "at least 10 percent" be tested for each breaker type. Additional breakers were satisfactorily tested in Units 1 and 2 to meet the TS SR. Test packages for Unit 3 (currently in an outage) were reviewed and additional breakers were added, as needed, to meet the "at least 10 percent" sampling requirement. Test procedures will be changed to assure future breaker test sample sizes meet "at least 10 percent" TS SR.

The most recent LER on incorrect surveillance test sample size is 528/93-007-00.

FACILITY NAME	DOCKET NUMBER	LER NUMBER			PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Palo Verde Unit 1	0 5 0 0 0 5 2 8	9 4	– 0 0 1	– 0 1	0 2 OF 0 7

TEXT

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

On April 7, 1994, Palo Verde Units 1 and 2 were in Mode 1 (POWER OPERATION) at approximately 86 percent power and Unit 3 was in its 4th refueling outage (3R4) with the core off loaded to the spent fuel pool.

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

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

On June 23, 1993, PVNGS Independent Safety and Quality Engineering Department personnel (utility, nonlicensed) completed a review of the cause of LER 528/93-007-00. This review determined that there was a potential for other TS Surveillance Requirements (SR) to have errors in sample size selection that could cause testing not to meet the TS SR. Based on the recommendations from this review, PVNGS Quality Assurance personnel (utility, nonlicensed) audited sample sizes used for other TS SRs. QA Audit 93-009, which was completed on August 30, 1993, identified a discrepancy in the sample sizes of Control Element Assembly (RCT)(CEA) breakers. Although all CEA breakers would be tested over a 10 cycle period, the sample size of the final test group (not required to be tested for several cycles) would not meet the "at least 10 percent" sampling requirement of TS SR 4.8.4.1. Condition Report Disposition Request (CRDR) 9-3-0569 was written during the QA audit to resolve this issue and determine if other types of molded case circuit breakers (BRK)(52)(72) contained similar sampling errors.

At approximately 1400 MST on April 7, 1994, PVNGS Maintenance Standards personnel (utility, nonlicensed) completed the review of approximately 248 molded case circuit breaker preventive maintenance (PM) tasks in support of the investigation for CRDR 9-3-0569. From this review, it was determined that surveillance testing of some types of molded case circuit breakers did not fully comply with TS SR 4.8.4.1.

TS SR 4.8.4.1 requires that all containment penetration conductor overcurrent protective devices (molded case circuit breakers) shown in Table 3.8-2 be demonstrated OPERABLE at least once per 18 months by selecting and functionally testing a representative sample of at least 10 percent of each type of circuit breaker.

The Limiting Condition for Operation (LCO) for TS 3.8.4.1 states in part that ...with one or more of the required containment penetration conductor overcurrent protective devices shown in TS Table 3.8-2 inoperable, restore the protection device(s) to OPERABLE status or de-

energize the circuits(s) by tripping the associated backup circuit breaker or racking out or removing the inoperable device within 72 hours...or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

In reviewing the PM tasks of molded case circuit breakers, the CRDR investigation team identified two types of errors. In one instance (Unit 2), one type of 70 breakers had been grouped in sample sizes such that the sample tested during the recently completed outage (2R4) contained only 6 breakers instead of the required 7. Three previous testing samples contained 7 breakers and 1 previous testing sample contained 8 breakers. The team could not determine if the sample of 6 breakers were grouped this way because of location, power supply, or loads. Testing an additional breaker of the type in question was satisfactorily completed at approximately 1300 MST on April 8, 1994. The breaker tested met the surveillance requirements. This brought the most current testing into compliance with TS SR 4.8.4.1.

The other instance was determined to be a rounding error. The rounding error showed up in several breaker types in Units 1 and 3. The rounding error existed in samples that contained odd numbers of breakers. When the 10 percent sample contained a fraction of a breaker (i.e., 7.2 or 7.8), the sample size was sometimes rounded down versus rounded up. The odd breaker(s) was included in one of the other samples so that all breakers in that group would be tested over 10 cycles. Rounding up in each case would have met the requirement of "at least 10 percent."

The rounding error in Unit 1 was identified in one breaker type sample which was tested during the last refueling outage (1R4). The sample size tested (1) was a fraction of a breaker less than 10 percent (1.2). This resulted in a total of 4 breakers having been tested through the current testing cycle when 4.8 should have been tested. Although the investigation team felt that the intent of TS (to test all breakers of each type over 10 cycles) was being met, an additional breaker was selected and tested to adjust the rounding to 5. Testing was satisfactorily completed at approximately 2100 MST on April 13, 1994. The breaker tested met the surveillance requirements.

Unit 3 was in a refueling outage. A review of molded case circuit breaker test packages for the current Unit 3 refueling outage was conducted and three packages were found that did not meet the "at least 10 percent" requirement. Additional breakers were assigned to meet the "at least 10 percent" requirement for the current cycle.

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 at the start of the event which contributed to this event.

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:

Previously, LER 528/93-007-00 had been written to identify an error in the sample size used in performing snubber testing. As a result, the PVNGS Independent Safety and Quality Engineering Department conducted a review of the cause of LER 528/93-007-00 to determine if there was a potential for other TS SRs to have a similar condition. Based on the recommendations from this review, the PVNGS Quality Assurance Department audited sample sizes used in other TS SRs. It was during this audit (93-009) that questions were raised as to how sample sizes of molded case circuit breakers were determined. This led to the identification of procedural errors in the development of PM tasks on molded case circuit breakers identified in this LER.

I. Cause of Event:

This event was caused by personnel not fully understanding that rounding down, grouping for convenience, or not wanting to over test molded case circuit breakers would cause the minimum sample size requirements of "at least 10 percent" not to be met during each required testing cycle. Personnel responsible for the development and maintenance of this testing program appeared to have equated "at least 10 percent each 18 months" to 100 percent over 10 cycles. Thus, as long as the total number of breakers would be tested over the 10 cycles, an individual sample of less than 10 percent would not impact the intent of TS. For the specific example in Unit 2, the investigation team did agree that the error was not due to rounding down, but they could not determine why this sample size (6 versus 7) was chosen (SALP Cause Code A: Personnel Error).

J. Safety System Response:

Not applicable - there were no 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:

The testing program in place at the discovery of the condition would have tested all the required breakers over 10 refueling cycles and the testing of the additional breakers required to make the current testing cycle meet the "at least 10 percent" TS SR was completed satisfactorily. This condition did not result in any challenges to the fission product barriers or result in any releases of radioactive materials. There were no adverse safety consequences or implications as a result of this condition and it did not adversely affect the safe operation of the plant or the health and safety of the public.

III. CORRECTIVE ACTION:

A. Immediate:

A review of molded case circuit breaker test packages for the current Unit 3 refueling outage was conducted. Three packages were found that did not meet the "at least 10 percent" requirement. Additional breakers were assigned to be tested. This testing was completed prior to the end of the Unit 3 outage to assure that testing meets the "at least 10 percent" requirement.

Additional breakers were tested in Units 1 and 2 to meet the requirement "of at least 10 percent" for breaker types found deficient during the investigation of the condition.

With the completion of these two actions, each Unit's current testing cycle is in compliance with TS SR 4.8.4.1.

B. Action to Prevent Recurrence:

PM tasks specifying sample sizes of molded case circuit breakers will be updated so that the "at least 10 percent" TS SR will be satisfied and all applicable breakers will be tested at least once during the first 10 cycles. The PM tasks are expected to be completed by October 14, 1994.

A review of TS SR programs which delineate the use of sampling to meet testing requirements is being conducted. If information is developed that identifies similar deficiencies, a new LER will be submitted. This review is being conducted in accordance with the PVNGS Incident Investigation Program.

IV. PREVIOUS SIMILAR EVENTS:

One other previous event has been reported pursuant to 10CFR50.73 (LER 528/93-007) where the sample size did not meet the sample size requirement of the TS SR. As discussed in Section I.B, the corrective actions for this previous condition led to the discovery of the condition identified in this LER. Thus, the corrective actions taken as a result of LER 528/93-007 would not have prevented the condition reported in this LER.

V. ADDITIONAL INFORMATION:

Unit 1 Investigation Results

Type THED, 76 breakers total, 10 percent = 7.6, 4x7.6 = 30.4 breakers

A total of 30 breakers have been tested. Testing performed in 1989 and 1992 had been completed with 7 breakers in each sample. Testing performed in 1991 and 1993 (1R4, last cycle) contained a sample of 8 breakers.

Type TJK, 12 breakers total, 10 percent = 1.2, 4x1.2 = 4.8

A total of 4 breakers have been tested. Testing performed in 1992 and 1993 (1R4, last cycle) had been completed with 1 breaker in each sample. Testing in 1989 contained a sample of 2 breakers. An additional breaker was tested to account for the apparent rounding error and to bring the last testing cycle (1R4) into compliance.

Unit 2 Investigation Results

Type TEC, 70 breakers total, 10 percent = 7, 4x7 = 28

A total of 35 breakers have been tested. Testing performed in 1988 was completed with 8 breakers in the sample. Testing performed in 1989, 1990, and 1991 was completed with 7 breakers in the sample. The most recent testing cycle performed for outage 2R4 had been completed with 6 breakers in the sample. An additional breaker was tested to bring the last testing cycle (2R4) into compliance.

Unit 3 Investigation Results

Type THED, 74 breakers total, 10 percent = 7.4, 3x7.4 = 22.2

A total of 23 breakers have been tested. Testing performed in 1990 was completed with 7 breakers in the sample. Testing completed in 1989 and 1992 was completed with 8 breakers in each sample.

Type THQB, 25 breakers total, 10 percent = 2.5, 3x2.5 = 7.5

A total of 11 breakers have been tested. Testing performed in 1992 was completed with 2 breakers. Two samples tested in 1989 and 1 sample tested in 1990 contained 3 breakers.

A review of molded case circuit breaker test packages for the current Unit 3 refueling outage was conducted. Three packages were found that did not meet the "at least 10 percent" requirement. Additional breakers were assigned to be tested and testing will be completed prior to the end of the current Unit 3 outage.