CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9606180070 DOC.DATE: 96/06/09 NOTARIZED: NO DOCKET #
FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
AUTH.NAME AUTHOR AFFILIATION
GRABO,B.A. 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 96-002-00:on 960514,Tech Spec violation occurred due to erroneous surveillance requirement.Caused by incorporation of C-E generic TS.Investigation being conducted.W/960609 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:STANDARDIZED PLANT 05000528

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD4-2 PD	1	1	CLIFFORD,J	1	1
INTERNAL:	ACRS	1	1	AEOD/SPD/RAB	2	2
	AEOD/SPD/RRAB	1	1	FILE CENTER	1	1
	NRR/DE/ECGB	1	1	NRR/DE/EELB	1	1
	NRR/DE/EMEB	1	1	NRR/DRCH/HHFB	1	1
	NRR/DRCH/HICB	1	1	NRR/DRCH/HOLB	1	1
	NRR/DRCH/HQMB	1	1	NRR/DRPM/PECB	1	1
	NRR/DSSA/SPLB	1	1	NRR/DSSA/SRXB	1	1
	RES/DSIR/EIB	1	1	RGN4 FILE 01	1	1
EXTERNAL:	L ST LOBBY WARD	1	1	LITCO BRYCE,J H	2	2
	NOAC MURPHY,G.A	1	1	NOAC POORE,W.	1	1
	NRC PDR	1	1	NUDOCS FULL TXT	1	1

NOTE TO ALL "RIDS" RECIPIENTS:
PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM OWFN 5D-5(EXT. 415-2083) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED
TOTAL NUMBER OF COPIES REQUIRED: LTTR 26 ENCL 26

CATEGORY 1 DOCUMENT

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

192-00970-JML/BAG/KR
June 09, 1996

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-37
Washington, DC 20555-0001

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528, 50-529, 50-530
License Nos. NPF-41, NPF-51, NPF-74
Licensee Event Report 96-002-00

Attached please find Licensee Event Report (LER) 96-002 prepared and submitted pursuant to 10CFR50.73. This LER reports a Technical Specification (TS) violation due to an erroneous TS surveillance requirement specification for trisodium phosphate. Control Room personnel declared both trains of the Emergency Core Cooling System inoperable and entered TS Limiting condition for Operation 3.0.3. The emergency TS amendment was approved by the NRC and TS LCO 3.0.3 was exited within the 24 hours allowed by TS SR 4.0.3.

In accordance with 10CFR50.73(d), a copy of this LER is being forwarded to the Regional Administrator, NRC Region IV. If you have any questions, please contact Burton A. Grabo, Section Leader, Nuclear Regulatory Affairs, at (602) 393-6492.

Sincerely,

James M. Levine

JML/BAG/KR/pv

Attachment

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

170044

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 5

TITLE (4)
Technical Specification Violation Due to Erroneous Surveillance Requirement

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 NUMBERS
0 5	1 4	9 6	9 6	- 0 0 2	- 0 0	0 6	0 9	9 6	Palo Verde Unit 2	0 5 0 0 0 5 2 9
									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)	1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
[redacted]		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)(vi)	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)(vii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(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
Burton A. Grabo, Section Leader, Nuclear Regulatory Affairs	AREA CODE 6 0 2 3 9 3 - 6 4 9 2

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

CAUSE	SYSTE	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	[redacted]	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	[redacted]

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)

At approximately 1900 MST on May 14, 1996, Operations personnel were notified by APS Engineering personnel that anhydrous trisodium phosphate (TSP stored in dissolving baskets located in the Containment basement of all three units) was in use as opposed to the Technical Specification (TS) required TSP dodecahydrate and as a result, the TS surveillance requirement (SR) 4.5.2.d.2 had not been satisfied. Although anhydrous TSP is an original design basis specification, Units 1, 2, and 3 Control Room personnel declared both trains of the Emergency Core Cooling System (ECCS) inoperable and entered TS 3.0.3 when the ACTION statements of TS LCO 3.5.2 could not be satisfied. The ACTION requirements for 3.0.3 were delayed in accordance with TS 4.0.3 for up to 24 hours in order to process an emergency TS SR amendment to replace the word "dodecahydrate" with "anhydrous." Since the anhydrous TSP satisfies the design basis function, plant operations were not affected. At approximately 1553 MST on May 15, 1996, Control Room personnel declared ECCS operable and exited TS 3.0.3 and TS LCO 3.5.2 following the TS amendment approval by the NRC for all three units. A preliminary evaluation determined that the cause of the event was incorporation of the generic TS which specified TSP dodecahydrate without validating the TS against the original design which used anhydrous TSP. There have been no previous similar events reported pursuant to 10CFR50.73.

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 6	- 0 0 2	- 0 0	0 2 of 0 5

TEXT

1. REPORTING REQUIREMENT:

This LER 529/95-006-00 is being written to report a condition prohibited by the plant's Technical Specifications (TS) as specified in 10 CFR 50.73(a)(2)(i)(B).

Specifically, at approximately 1700 MST on May 14, 1996, Palo Verde Units 1, 2, and 3 were in Mode 1 (POWER OPERATION), operating at approximately 100 percent power when Operations personnel (utility, licensed) were notified by APS Engineering personnel (utility,nonlicensed) that anhydrous trisodium phosphate [TSP stored in dissolving baskets located in the Containment (NH) basement of all three units] was in use as opposed to the Technical Specification (TS) required TSP dodecahydrate, and as a result, the TS surveillance requirement (SR) 4.5.2.d.2 had not been satisfied. Although anhydrous TSP is in the original design basis specification, Units 1, 2, and 3 Control Room (NA) personnel (utility, licensed) declared both trains of the Emergency Core Cooling System (ECCS) (BQ/BP) inoperable and entered TS 3.0.3 when the ACTION statements of TS LCO 3.5.2 could not be satisfied. The ACTION requirements for 3.0.3 were delayed in accordance with TS 4.0.3 for up to 24 hours in order to process an emergency TS SR amendment to replace the word "dodecahydrate" with "anhydrous." Since the installed quality of anhydrous TSP satisfies the design basis function, plant operations were not affected.

2. EVENT DESCRIPTION:

Prior to the event, the APS team responsible for converting the TS for all three units to the improved standard TS (ITS) requested APS Design Engineering personnel to verify information related to post-LOCA (loss of coolant accident) sump volume and mass of TSP dodecahydrate used in Containment as part of the ITS first level review process. During the process of validating the quantity of TSP contained in the baskets, APS personnel identified that the form of the TSP in the Containment baskets was anhydrous rather than the dodecahydrate as specified in TS surveillance requirement (SR) 4.5.2.d.2 and the associated TS Bases.

TS SR 4.5.2.d.2 stated that "Each ECCS subsystem shall be demonstrated OPERABLE ... At least once per 18 months by: ... Verifying that a minimum total of 464 cubic feet of solid granular trisodium phosphate (TSP) dodecahydrate is contained within the TSP storage baskets."

As a result of this discovery, the 24-hour provision of TS 4.0.3 was entered at 1900 MST on May 14, 1996, since TS SR 4.5.2.d.2 had not been satisfied. Failure to satisfy the TS SR resulted in the declaration of both ECCS trains inoperable. Per the provisions of TS 4.0.3 and Generic

Letter 87-09, "Sections 3.0 and 4.0 of the Standard Technical Specifications (STS) on the Applicability of Limiting Conditions for Operation and Surveillance Requirements," in the case of a missed surveillance, a 24-hour window is provided to perform the surveillance or to obtain the necessary relief from the requirement from the NRC. Failure to satisfy the SR at the end of the 24-hour action would have resulted in the shutdown of all 3 units at PVNGS.

Since the form of the TSP in Containment (i.e., anhydrous form) was in accordance with the design basis of the plant, a TS change under emergency circumstances was submitted to revise TS 4.5.2.d.2 and TS Bases to specify that the TSP contained in the baskets in Containment is in the anhydrous form rather than the dodecahydrate form.

At approximately 1553 MST on May 15, 1996, Control Room personnel declared ECCS operable and exited TS 3.0.3 and TS LCO 3.5.2 following the TS amendment approval by the NRC for all three units.

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

The Bases for the TS SR 4.5.2.d.2 (TSP stored in dissolving baskets located in the Containment basement) is to minimize the possibility of corrosion cracking of certain metal components during operation of the ECCS following a LOCA. The TSP provides this protection by dissolving in the sump water and causing its final pH to be raised to greater then or equal to 7.0. The dissolution of the TSP in the baskets also precludes the release of volatile iodine into the Containment atmosphere during recirculation following a LOCA.

Either form of TSP in the appropriate quantities would provide adequate neutralization of the borated flood water following a LOCA since both materials are chemically equivalent. Hence, the use of the anhydrous form does not present any compatibility issues relative to the dodecahydrate form. However, the two forms differ in their physical characteristics, and in particular, the amount of effective phosphate per sample mass. Anhydrous TSP yields greater buffering capacity per sample mass relative to the dodecahydrate form. However, anhydrous TSP, when subjected to high humidity, tends to hydrate forming a semi-crystalline solid. The anhydrous material, although retarded by agglomeration when the material hydrates, still possesses high dissolution characteristics as demonstrated by acceptable performances of previous 18-month TS SR.

Therefore, the ECCS was capable of performing its design basis function during the period the surveillance requirements were not met. This event did not adversely affect the safe operation of the plant or the health and

safety of the public. The event did not result in any challenges to the fission product barriers or result in any releases of radioactive material. Therefore, there were no adverse safety consequences or implications as a result of this event.

4. CAUSE OF THE EVENT:

An independent investigation of this event is being conducted in accordance with the APS Corrective Action Program. As part of the investigation, a root cause is being performed. A preliminary evaluation, based on available information, has determined that the apparent cause was incorporation of Combustion Engineering (CE) generic TS which specified TSP dodecahydrate without validating the TS against the original design calculations and basis prepared by Bechtel, CE, and APS using anhydrous TSP (SALP Cause Code B: Design, Manufacturing, Installation Error).

Two factors contributed to the delay in identifying the discrepancy:

1. TSP is loaded on a one-time initial load. Except for the refill of the baskets in Unit 2 following an event on May 28, 1994 (gravity drain from the reactor drain tank to containment), there were no other opportunities for identifying the difference in TSPs. The TSP stored in the warehouse was used for the refill.

2. The 18-month surveillance procedure does not test for a particular form of TSP. It is concerned with measuring TSP volume and sampling for solubility and buffering capacity.

No unusual characteristics of the work location (e.g., noise, heat, poor lighting) directly contributed to this event. If information is developed which would significantly affect the reader's understanding or perception of this event or if the final evaluation results differ from this determination, a supplement to this report will be submitted.

5. STRUCTURE, SYSTEM, OR COMPONENT INFORMATION:

Although the ECCS was declared inoperable for a lapsed surveillance requirement, there were no component or system failures involved in this event. No failures of components with multiple functions were involved. No failures that rendered a train of a safety system inoperable were involved. There were no safety system responses and none were necessary.

TEXT

6. CORRECTIVE ACTIONS TO PREVENT RECURRENCE:

An independent investigation of this event is being conducted in accordance with the APS Corrective Action Program. The investigation is expected to be completed by June 19, 1996. Actions to prevent recurrence are being developed based on the results of the investigation and will be tracked to completion under the APS Commitment Action Tracking System (CATS). Actions to date include initiating an Updated Final Safety Evaluation Report change request and updating applicable procedures. During the conversion to improved TS, APS will continue its efforts to identify any other TS discrepancies.

7. PREVIOUS SIMILAR EVENTS:

Although there have been previous events reported pursuant to 10CFR50.73 in the last three years for TS surveillance requirements not being satisfied, the causes discussed in the previous events have not been similar to this event. Therefore, the corrective actions of the previous events would not have prevented this event.