

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8801110406 DOC. DATE: 88/01/05 NOTARIZED: NO DOCKET #
 FACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
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 MALIK, J. E. Arizona Nuclear Power Project (formerly Arizona Public Serv
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 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-027-00: on 870728, unit entered Mode 4 (hot shutdown)
 w/o meeting surveillance requirements for containment spray
 sys Train B pump. Caused by personnel error. Train A pump
 tests verified & procedure revised. W/870105 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: Standardized plant.

05000528

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INTERNAL:	ACRS MICHELSON		1	1		ACRS MOELLER		2	2
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	RES TELFORD, J		1	1		RES/DE/EIB		1	1
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EXTERNAL:	EG&G GROH, M		5	5		FORD BLDG HOY, A		1	1
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 5 2 8	PAGE (3) 1 OF 0 4
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TITLE (4)
Containment Spray System "B" Train Pump Incorrectly Declared Operable

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	7	2 8	8	7	—	0	2	7	0	0	0	0	5	0	0	0
0	7	2 8	8	7	—	0	2	7	0	0	0	0	1	0	5	8 8
									N/A		0	5	0	0	0	
									N/A		0	5	0	0	0	

OPERATING MODE (9) 5	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)	20.406(e)	50.73(a)(2)(iv)	73.71(b)						
	20.406(a)(1)(i)	50.38(e)(1)	50.73(a)(2)(v)	73.71(c)						
	20.406(a)(1)(ii)	50.38(e)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 368A)						
	20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(vii)(A)							
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)							
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME John E. Malik, (Acting) Compliance Lead		AREA CODE 6 0 2	3 9 3 - 3 5 2 7

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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)		<input checked="" type="checkbox"/> NO			

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

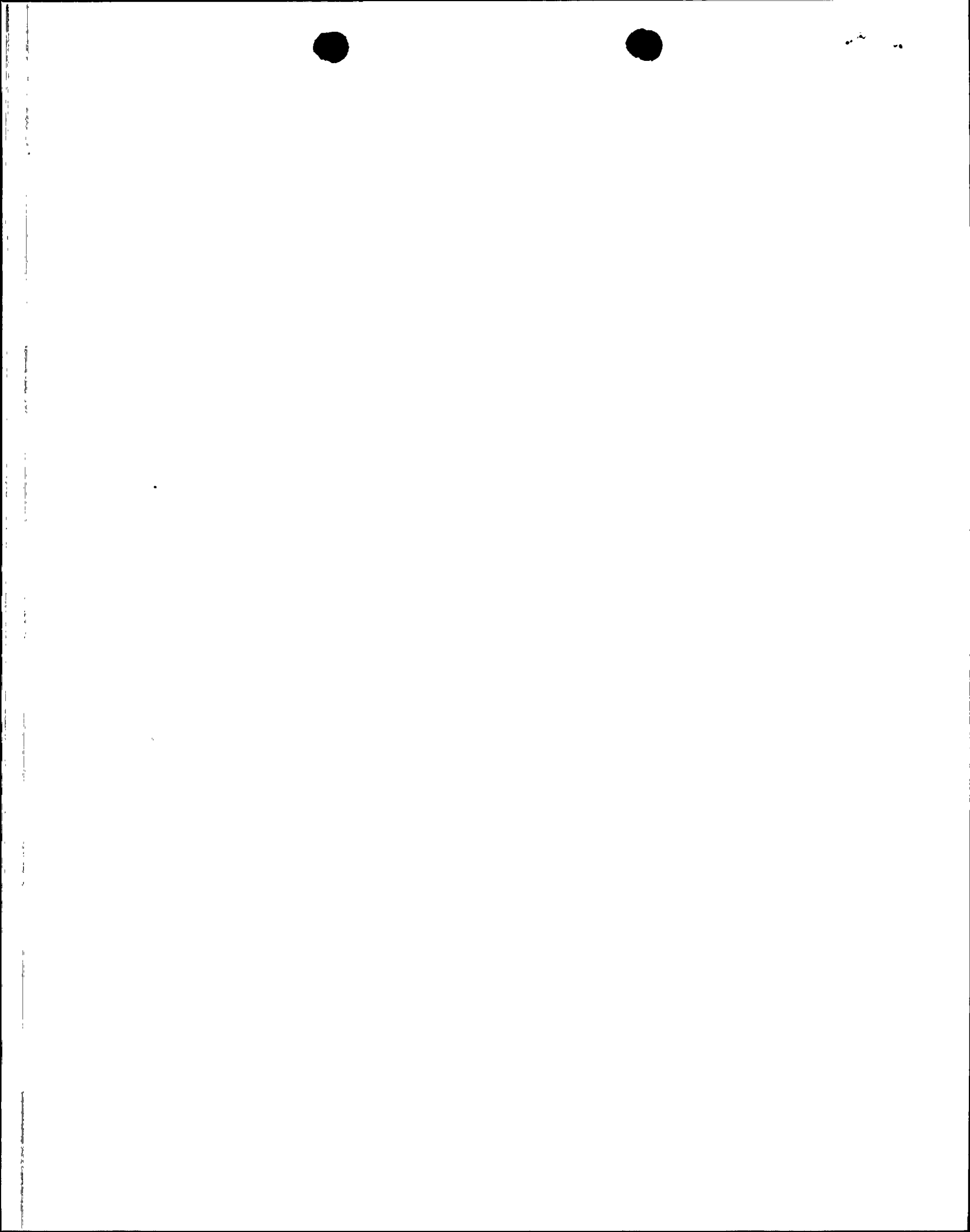
At approximately 0947 MST on December 7, 1987, it was discovered that Palo Verde Unit 1 had entered Mode 4 (HOT SHUTDOWN) at approximately 0234 MST on July 28, 1987, without meeting the surveillance requirements for the containment spray system (BE) "B" train pump (P) as specified in Technical Specification (T.S.) 4.6.2.1.b. A test conducted on August 5, 1987, later verified operability of the pump in accordance with T.S. 4.6.2.1.b.

This event was caused by personnel error as a direct result of an error in an approved procedure. The containment spray pump operability test procedure had been revised on July 8, 1987 to include provisions for performing Section XI testing of the pump in shutdown cooling mode. The requirements specified in T.S. 4.6.2.1.b require this test to be performed in recirculation mode, however, the revised procedure permitted the test steps necessary to comply with T.S. 4.6.2.1.b to be bypassed without violating the procedure. The "B" train pump was subsequently tested on July 10, 1987 and determined to be operable without meeting T.S. 4.6.2.1.b.

As corrective action, "A" train pump tests were verified to have been performed correctly, and the Unit 1 procedure was revised to ensure proper verification of T.S. 4.6.2.1.b. No similar events have been identified.

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

At approximately 0947 MST on December 7, 1987, with Palo Verde Unit 1 in Mode 5 (COLD SHUTDOWN), it was discovered that Unit 1 had entered Mode 4 (HOT SHUTDOWN) at approximately 0234 MST on July 28, 1987 without meeting the surveillance requirements for the containment spray system (BE) "B" train pump (P) as specified in Technical Specification 4.6.2.1.b.

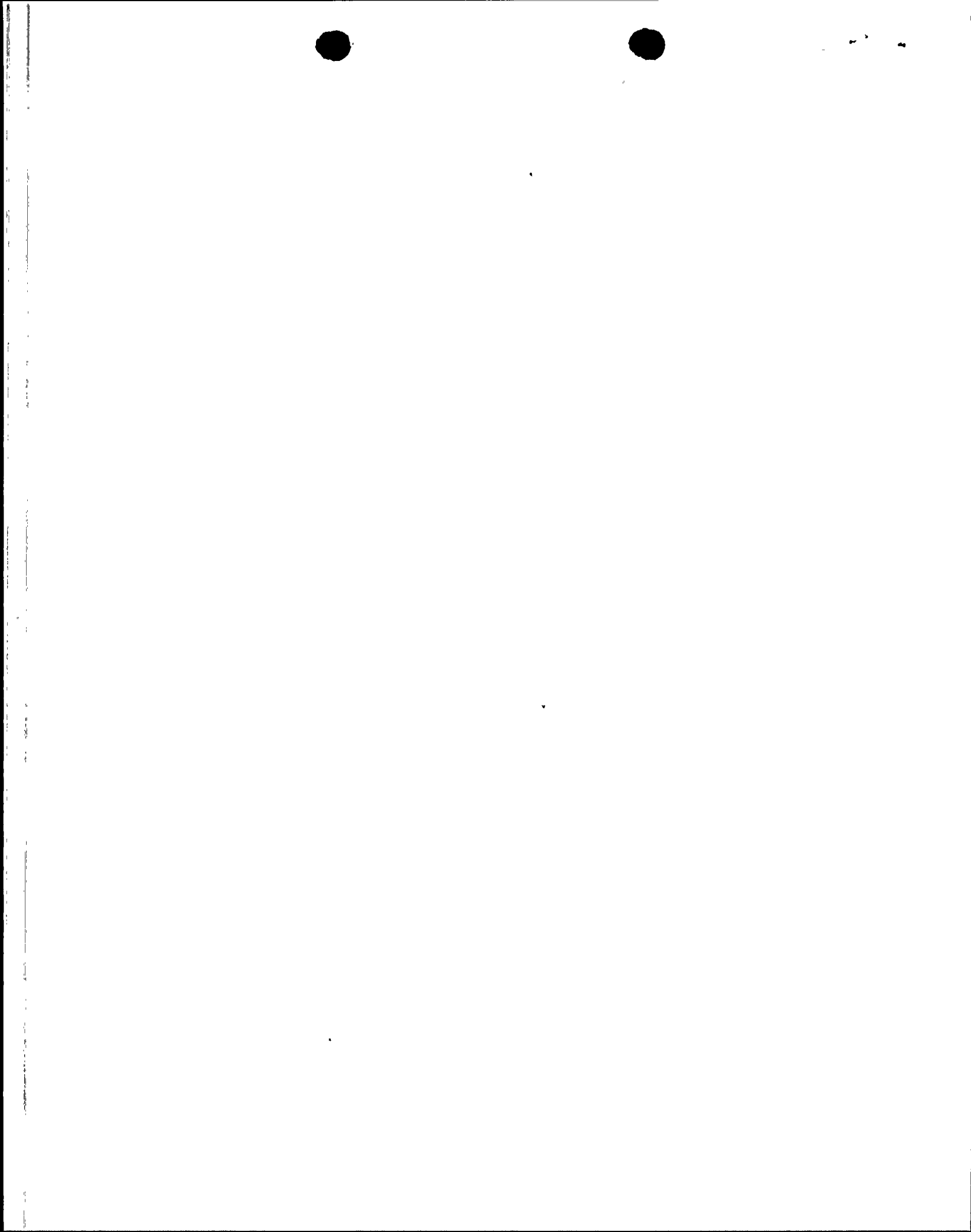
Technical Specification (T.S.) 4.6.2.1.b requires that each containment spray system be demonstrated operable by verifying that each containment spray pump develops an indicated differential pressure of greater than or equal to 257 psid, at greater than or equal to the minimum allowable recirculation flowrate, when tested pursuant to T.S. 4.0.5.

Technical Specification 4.0.5 specifies surveillance requirements for inservice inspection and testing in accordance with the applicable requirements of Section XI of the ASME Boiler and Pressure Vessel Code. Section XI requires that an inservice test be run on each pump nominally every 3 months during normal plant operations, and recommends that this test frequency be maintained during shutdown periods if this can reasonably be accomplished.

This event was discovered by an individual (utility, licensed) while conducting a review of an approved revision to the Unit 1 containment spray pump operability test procedure, prior to making similar changes in the corresponding Unit 2 and 3 procedures. The surveillance test specified in T.S. 4.6.2.1.b requires the pump to be tested in recirculation mode, however, the Section XI requirements can be met with the pump operating in other operational configurations. The Unit 1 test procedure had been revised, effective July 8, 1987, to permit Section XI testing of the containment spray "B" train pump to be performed in shutdown cooling mode.

On July 6, 1987 an engineering evaluation was performed to establish additional sets of reference values for Section XI testing of the containment spray pumps other than those specified in T.S. 4.6.2.1.b. This evaluation established acceptance criteria for testing the pumps with full flowrate during shutdown cooling, in lieu of the recirculation flowrate, thus permitting Section XI testing to be conducted for a containment spray system pump when in service for shutdown cooling. This evaluation established a reference differential pressure of 217 and 211 psid for the "A" and "B" train containment spray pumps, respectively, with full flowrate conditions. The evaluation specified, however, that additional testing in the recirculation mode was required to comply with the requirements of T.S. 3.6.2.1.

The revision incorporated into the Unit 1 procedure included the values specified in T.S. 4.6.2.1.b in addition to the values provided in the engineering evaluation. The procedure also contained the instructions necessary to conduct the test with the pump in either the recirculation mode or the shutdown cooling mode.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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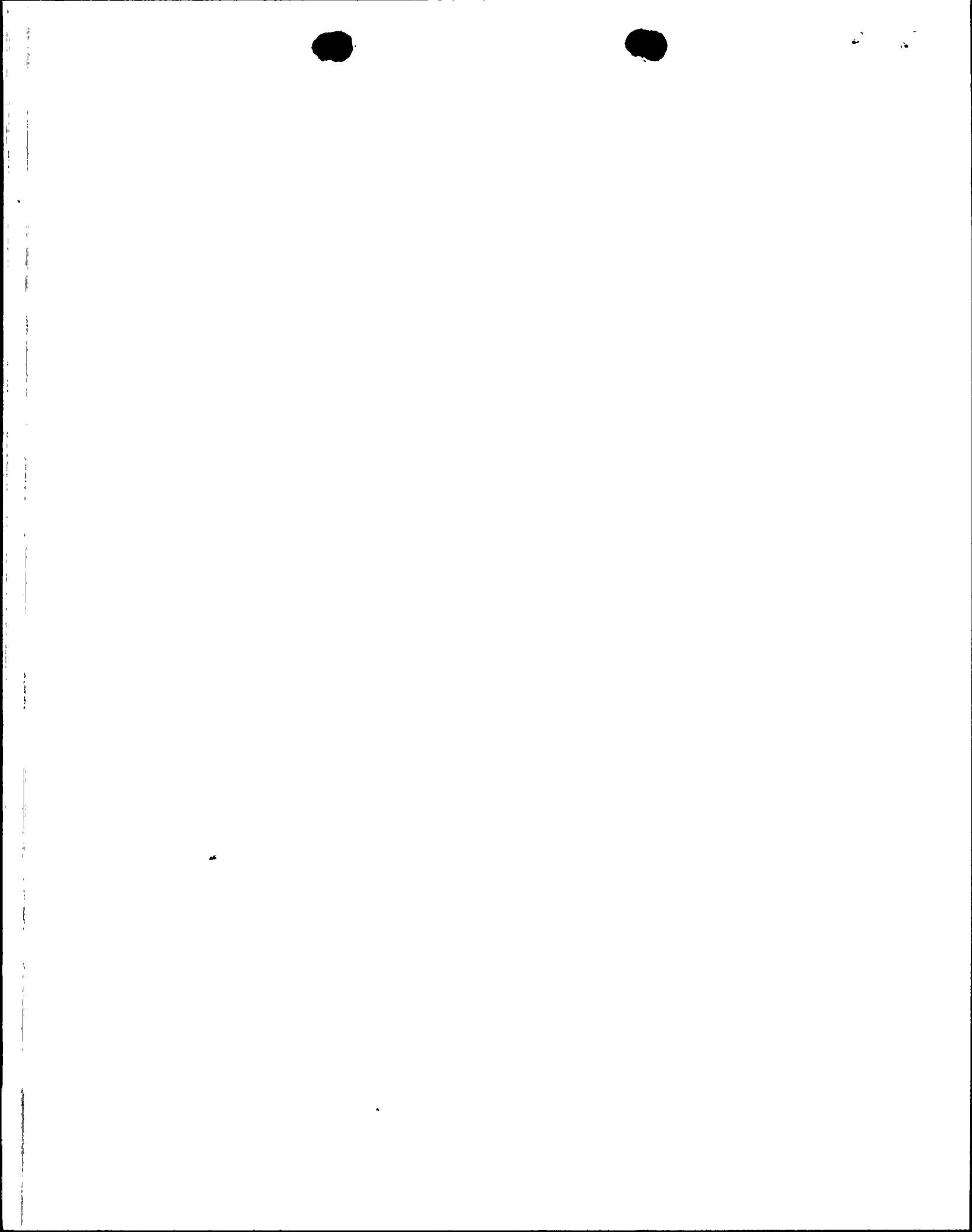
TEXT (If more space is required, use additional NRC Form 366A's) (17)

However, the subsequent review of the approved procedure noted that if the test was performed while the pump was being operated in the shutdown cooling mode, the steps necessary to comply with T.S. 4.6.2.1.b could be bypassed without violating the procedure. Based on these facts, the root cause of the event has been determined to be a personnel error as a direct result of an error in an approved procedure.

Following identification of this procedural error, a review was conducted which identified that the revised procedure had been used to test the Unit 1 containment spray "B" train pump on July 10, 1987. This test, which was performed with the pump in shutdown cooling mode, satisfied Section XI test requirements but did not utilize the values required to satisfy T.S. 4.6.2.1.b. As discussed above, Unit 1 entered Mode 4 at approximately 0234 MST on July 28, 1987 without verification of the differential pressure specified in T.S. 4.6.2.1.b for the "B" train pump, and contrary to the requirements of T.S. 3.6.2.1 and 3.0.4. The unit completed power ascension, entering Mode 1 (POWER OPERATION) at approximately 2145 MST on July 31, 1987. Further review identified that the test was conducted again on August 5, 1987, at which time the values specified in T.S. 4.6.2.1.b were satisfactorily verified. The duration of this event was approximately eight (8) days. Inasmuch as the requirements of T.S. 4.6.2.1.b were satisfactorily verified on May 15, 1987 and again on August 5, 1987, with no major maintenance or modifications performed in the interim, it has been determined that the containment spray system "B" train pump was always able to perform its safety-related functions.

As immediate corrective action it was verified that the Unit 1 containment spray "A" train pump was satisfactorily tested as meeting both Section XI and T.S. 4.6.2.1.b requirements prior to the Mode 4 entry on July 28, 1987. In addition, the proposed revisions to the corresponding Unit 2 and 3 test procedures were cancelled, and the Unit 1 procedure was revised to correct the procedural error described above.

An evaluation conducted by the responsible supervisor concluded that the error in the procedure was the result of including multiple test requirements (i.e., Section XI and T.S. requirements with different operational alignments and acceptance criteria) in the same procedure. This evaluation included a review of other test procedures which addressed compliance with Section XI requirements in addition to T.S. requirements. No other deviations of this type were noted. Although this is considered an isolated case, the technical reviewer (utility, licensed) of the procedure revision noted above will be counseled (non-disciplinary) on the necessity for attention to detail and consideration of potential misinterpretation of a procedure by the user. The preparer of the procedure revision is no longer employed by the Arizona Nuclear Power Project.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

There were no structures, systems or components other than those discussed above that were inoperable at the start of the event that contributed to the event. There were no automatically or manually initiated safety system responses. There were no unusual characteristics of the work location that contributed to the event. Based upon the above discussion, and the fact that the containment spray "A" train was always operable, this event had no safety consequences.

While other events have been identified (e.g., Unit 1 LER 86-29-00 and Unit 2 LER 86-16-00) in which a surveillance test was incorrectly performed due to a procedural deficiency, these event did not involve the root cause described above and are not considered similar events.





Arizona Nuclear Power Project

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192-00330-JGH/JEM/KCP

January 5, 1988

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528
Licensee Event Report 87-027-00
File: 88-020-404

Attached please find Licensee Event Report (LER) No. 87-027-00 prepared and submitted pursuant to 10CFR 50.73. In accordance with 10CFR 50.73(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 J. E. Malik, (Acting) Compliance Lead at (602) 393-3527.

Very truly yours,

J. G. Haynes
J. G. Haynes
Vice President
Nuclear Production

JGH/JEM/KCP/kj

Attachment

cc: O. M. DeMichele (all w/a)
E. E. Van Brunt, Jr.
J. B. Martin
J. R. Ball
R. C. Sorenson
E. A. Licitra
A. C. Gehr
INPO Records Center

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