

CATEGORY 1

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 FACIL: STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Public 05000530
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 MARKS, D.G. Arizona Public Service Co. (formerly Arizona Nuclear Power
 OVERBECK, G.M. Arizona Public Service Co. (formerly Arizona Nuclear Power
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 98-001-00: on 980730, entered TS 3.0.3 due to safety
 injection flow instruments being removed from svc. Caused by
 personnel error. Transmitters were unisolated & returned to
 svc. W/980828 ltr.

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NOTES: Standardized plant.

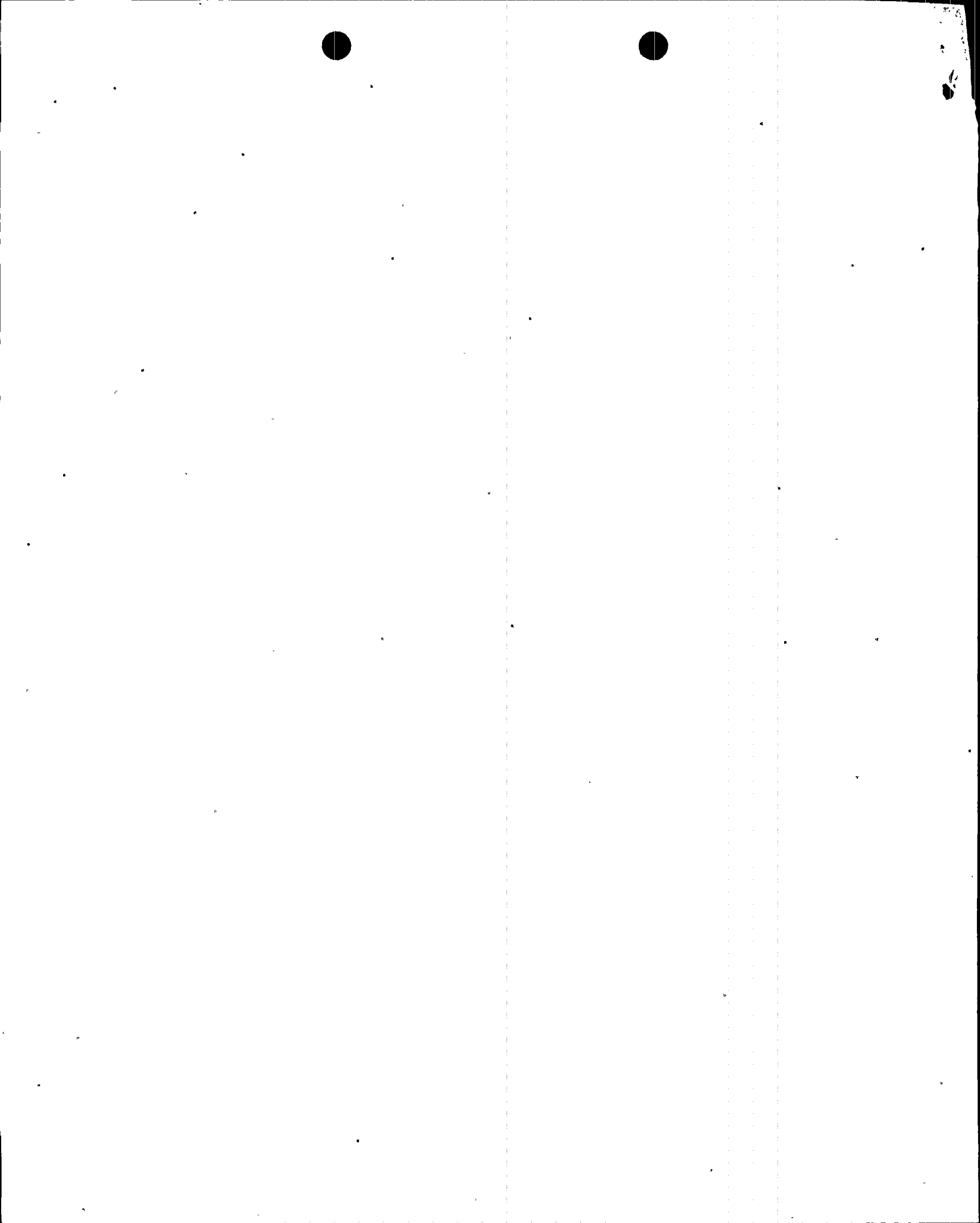
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A04





Palo Verde Nuclear
Generating Station

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192-01026-GRO/DGM/REB
August 28, 1998

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 3
Docket No. STN 50-530
License No. NPF-74
Licensee Event Report 98-001-00**

Attached please find Licensee Event Report (LER) 98-001-00 prepared and submitted pursuant to 10 CFR 50.73. This LER reports a Technical Specification (TS) violation due to the isolation of high pressure safety injection system flow transmitters.

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 Daniel G. Marks, Section Leader, Regulatory Affairs, at (602) 393-6492.

Sincerely,

Gregg R. Overbeck

7/1
Jezz

GRO/DGM/RAB/rlh

Attachment

cc: E. W. Merschoff (all with attachment)
M. B. Fields
J. H. Moorman
INPO Records Center

9809090266 980828
PDR ADDCK 05000530
S PDR

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 5 3 0	PAGE (3) 1 OF 05
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TITLE (4)
TS 3.0.3 entry due to safety injection flow instruments being removed from service

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	7	3	0	9	8	9	8	-	0	0	1	-	0	0	0	0	8	2	8	9	8	N/A	0	5	0	0	0		
																					N/A	0	5	0	0	0			

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

OPERATING MODE (9) 1	20.402(b)	20.405(c)	50.73(a)(2)(N)	73.71(b)
POWER LEVEL (10) 1 0 0	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)	<input checked="" type="checkbox"/> 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 Daniel G. Marks, Section Leader, Nuclear Regulatory Affairs	TELEPHONE NUMBER AREA CODE 6 0 2 3 9 3 - 6 4 9 2
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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)

YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On July 30, 1998, at approximately 1135 MST, Palo Verde Unit 3 was in Mode 1 (POWER OPERATION), operating at approximately 100 percent power when control room personnel determined that all four flow transmitters for the high pressure safety injection system were isolated and out of service. The transmitters had been isolated earlier in the shift in support of planned maintenance on the B train high-pressure safety injection pump and injection valves (4). At approximately 1212 MST the Shift Manager determined that with all four of the transmitters isolated the condition constituted operation outside the associated emergency core cooling system technical specification limiting condition for operation and action statement. Technical Specification 3.0.3. was entered and concurrent action was initiated to restore the transmitters to OPERABLE status. At 1242 MST Technical Specification 3.0.3 was exited after the transmitters had been aligned and independently verified.

The cause of the isolation of all HPSI flow transmitters was determined to be cognitive personnel error. As immediate corrective action the transmitters were unisolated and returned to service.

No previous similar events have been reported pursuant to 10CFR50.73.

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TEXT

1. REPORTING REQUIREMENT:

This LER 530/98-001-00 is being written to report an event that resulted in the operation in a condition prohibited by the technical specifications. (50.73(a)(2)(i))

Specifically, on July 30, 1998, at approximately 1135 MST, Palo Verde Unit 3 was in Mode 1 (POWER OPERATION), operating at approximately 100 percent power when control room personnel (utility-licensed operator) determined that all four flow transmitters (FT) for the high pressure safety injection system (HPSI) (BQ) were isolated and out of service. The transmitters had been isolated earlier in the shift in support of planned maintenance on the B train HPSI pump and injection valves (4). At approximately 1212 MST the Shift Manager (utility-licensed operator) determined that with all four of the transmitters isolated the condition constituted operation outside the associated emergency core cooling system technical specification limiting condition for operation 3.5.2 and the associated action statement. Technical Specification 3.0.3. was entered and concurrent action was initiated to restore the transmitters to OPERABLE status. At 1242 MST Technical Specification 3.0.3 was exited after the transmitters had been aligned and independently verified.

2. EVENT DESCRIPTION:

On July 30, 1998 at approximately 0500 MST Unit 3 was operating at 100% reactor power when the B train HPSI injection valves and pump were removed from service and tagged for planned maintenance. In support of the planned maintenance a separate clearance had previously been generated to ensure compliance with Technical Specification (TS) 3.6.3 action requirements since the injection valves are also containment isolation valves. This course of action had been discussed by the Shift Manager and the work control senior reactor operator (SRO) (utility-licensed operator) the previous day and both agreed that the clearance would ensure compliance with the containment isolation TS. At approximately 0645 MST on July 30, an operator (utility- licensed operator) isolated the four HPSI flow transmitters in accordance with the clearance and as directed by control room personnel.

At approximately 1135 MST, during a daily operations crew briefing, I&C personnel (other utility personnel) began performing instrument loop calibrations for HPSI cold leg injection transmitters, SIB-FT-311, SIB-FT-321 which provide HPSI flow indication to the control room. During this performance a computer alarm was received in the control room and an



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TEXT

operator noticed that an A train HPSI flow indicator was "bouncing". The system design for HPSI flow indication includes a flow transmitter in each of the four HPSI injection lines. Each of these injection lines combines flow from both the A and B HPSI trains. Each flow transmitter supplies flow indication to the train A and B safety injection portion of the main control board in the control room.

The Shift Manager and Work Control SRO were contacted and a review of work activities in progress was performed. During this review it was identified that all four HPSI flow transmitters were isolated under the TS 3.6.3 clearance and that the A train HPSI may also be impacted. At approximately 1212 MST the Shift Manager determined the condition constituted operation outside the associated emergency core cooling system TS limiting condition for operation (LCO) and action statement. TS 3.0.3. was entered and concurrent action was initiated to restore the four transmitters to OPERABLE status. At 1242 MST TS 3.0.3 was exited after the transmitters had been aligned and independently verified.

There were no safety system actuations and none were required.

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

The HPSI flow indicators are a related support system for the emergency core cooling system (ECCS) and are required to support the operability of the ECCS. During the initial injection phase of a loss of coolant accident (LOCA), flow indication is not required since the associated cold leg injection header orifices ensure proper cold leg injection flow balance. However, approximately 2 hours after a large break LOCA simultaneous hot and cold leg flow is initiated. Hot and cold leg flow indication is required at that time so that average cold leg flow can be measured and hot leg injection valves can be throttled so that total hot leg flow equals total cold leg flow. This flow split is required to provide core flushing in order to prevent possible precipitation of boron in the core which would adversely affect heat transfer. The methodology used in the emergency operating procedures to establish this flow split accounts for one or two failed HPSI cold leg flow transmitters by averaging only those transmitters which are indicating flow. Since flow is actually balanced between cold legs by surveillance testing, which sets a limit for the open travel of the injection valve, averaging three or four indicators would essentially yield the same result.

Since the initial injection flow is determined by the mechanical characteristics of the system, the flow indicators are not required for the initial HPSI injection phase.

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TEXT

The event did not result in any challenges to the fission product barriers or result in any release of radioactive materials. Therefore, there were no adverse safety consequences or implications as a result of this event. This event did not adversely affect the safe operation of the plant or health and safety of the public.

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 determination of the cause of the event will be performed. A preliminary evaluation has determined that the apparent root cause is attributed to cognitive personnel error (SALP Cause Code: A: Personnel Error) on the part of the individuals involved with preparing, reviewing, and authorizing the clearance used to ensure compliance with the TS for containment isolation. These individuals concentrated on the containment penetration aspect of the clearance and did not consider other ramifications of isolating the four HPSI transmitters. If the evaluation results differ from this determination, a supplement to this report will be submitted to describe the final root cause determination.

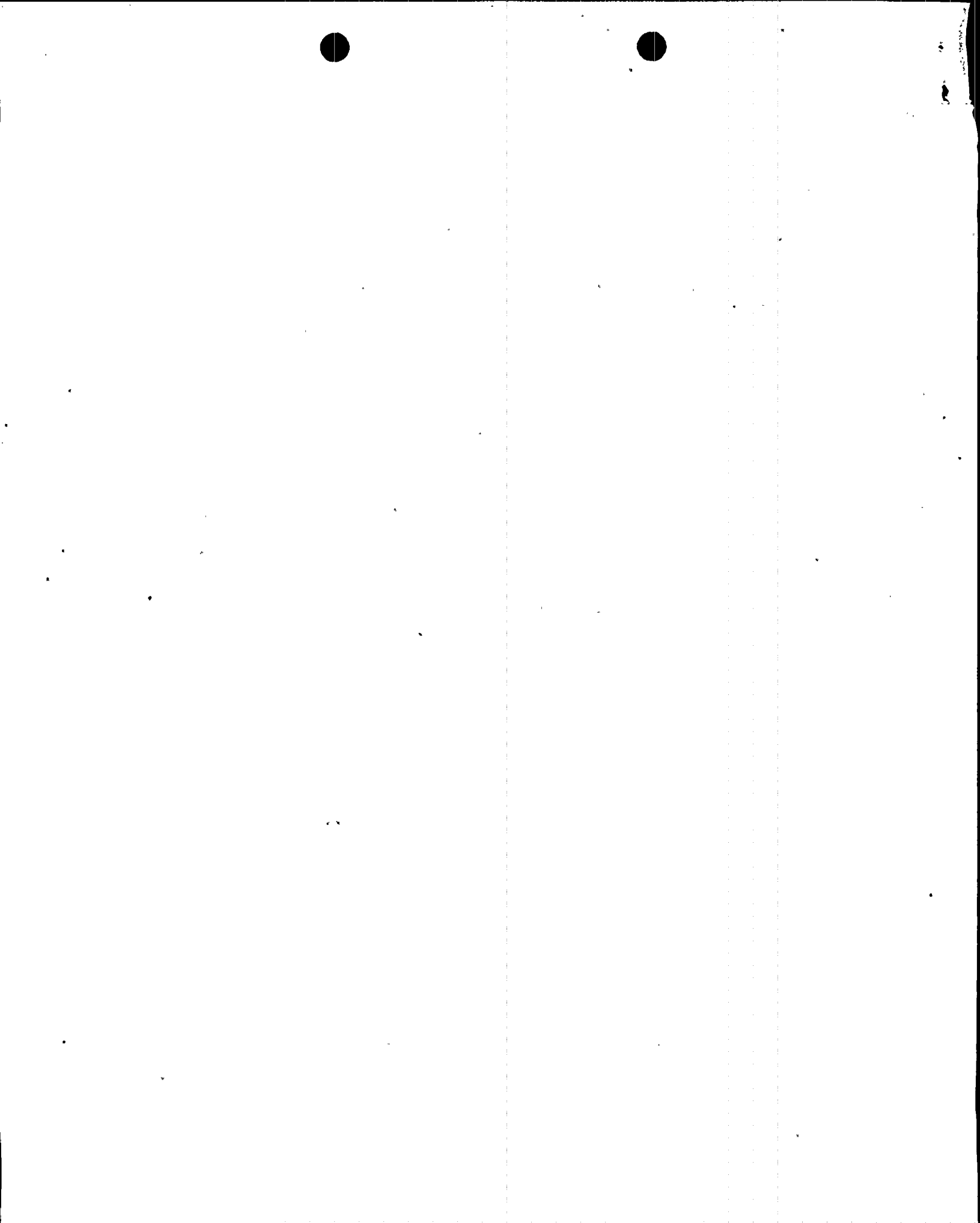
No unusual characteristics of the work location (e.g., noise, heat, poor lighting) directly contributed to this event. No procedural errors contributed to this event.

5. STRUCTURES, SYSTEMS, OR COMPONENTS INFORMATION:

There are no indications that any structures, systems, or components were inoperable at the start of the event that contributed to this event. No component or system failures were involved.

6. CORRECTIVE ACTIONS TO PREVENT RECURRENCE:

An independent investigation of this event is being conducted in accordance with the APS Corrective Action Program. Actions to prevent recurrence are being developed based upon the results of the investigation. Actions identified include a lessons learned briefing, of the results from the investigation, to all Work Control personnel. In addition, changes to the work control process, to more clearly define responsibilities for reviewers regarding TS impacts caused by clearances, will be made.



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TEXT 7. PREVIOUS SIMILAR EVENTS:

No other previous events, in the last three years, have been reported pursuant to 10 CFR 50.73 where entry into TS 3.0.3 occurred when equipment was removed from service.

8. ADDITIONAL INFORMATION:

None

