

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9903110117 DOC.DATE: 99/03/01. NOTARIZED: NO DOCKET #
 FACIL:STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
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 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 99-001-00:on 990103,TS violation for power dependent
 insertion limit alarm being inoperable.Caused by peronnsel
 error.Revised procedure to clarify how computer point is to
 be returned to scan mode.With 990302 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Standardized plant.

05000529

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192-01041-GRO/DGM/REB
March 2, 1999

U. S. Nuclear Regulatory Commission
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Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529
License No. NPF-51
Licensee Event Report 99-001-00**

Attached please find Licensee Event Report (LER) 99-001-00 prepared and submitted pursuant to 10 CFR 50.73. This LER reports a condition prohibited by the Technical Specifications in that a required Power Dependent Alarm Circuit was inoperable for longer than the required action completion time. No commitments are being made to the NRC by this letter.

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,

[Handwritten signature: DGM for GROVERBECK] *Jerz*

GRO/DGM/RAB/rh

Attachment

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

9903110117 990301
PDR ADOCK 05000529
S PDR

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 5 2 9	PAGE (3) 1 OF 0 5
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TITLE (4) TS Violation for Power Dependent Insertion Limit Alarm Inoperable Due to Personnel Error
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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 1	0 3	9 9	9 9	- 0 0 1	- 0 0	0 3	0 1	9 9	N/A	0 5 0 0 0 0	
0 1	0 3	9 9	9 9	- 0 0 1	- 0 0	0 3	0 1	9 9	N/A	0 5 0 0 0 0	

OPERATING MODE (9) 1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (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)			
		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)(ix)					

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

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
<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)

On January 31, 1999 at approximately 0219 hours MST with Unit 2 operating at approximately 100 percent power, operations personnel discovered that the Power Dependent Insertion Limit (PDIL) alarm was INOPERABLE. This alarm is computer generated and is used to alert the operators to a condition in which the regulating Control Element Assemblies (CEA) may be outside the required insertion limits. The alarm had last been tested satisfactorily on January 3, 1999. However, on restoring from the test the circuit was left in a condition that prevented it from performing its function.

When discovered on January 31, the Technical Specification Required Action for the PDIL circuit was completed within the required time limit and all regulating CEA group positions were verified to be within insertion limits. The PDIL alarm was returned to OPERABLE status at 0342 MST on January 31, 1999.

The cause of the INOPERABLE alarm was attributed to personnel error in that control room personnel did not recognize the computer was not placed back into the scan mode of operation following the completion of the alarm testing performed on January 3, 1999.

As corrective action the procedure has been revised to clarify how the computer point is to be returned to the scan mode. No similar events have been reported pursuant to 10CFR50.73 during the last three years.

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TEXT

1. REPORTING REQUIREMENT:

This LER 99-001-00 is submitted to report an event that resulted in an operation or condition prohibited by the plant's Technical Specifications (TS) as specified in 10CFR50.73(a)(2)(i)(B).

Specifically, on January 31, 1999 at approximately 0219 hours MST with Unit 2 at approximately 100 percent power, operations personnel discovered that the Power Dependent Insertion Limit (PDIL) alarm was INOPERABLE. The alarm had been INOPERABLE since January 3, 1999 at approximately 0121 MST when a computer point had been left in a condition that rendered the alarm incapable of performing its function. This exceeded the one-hour completion time specified for the PDIL alarm circuit in Technical Specification 3.1.7 Required Action D.1.

2. EVENT DESCRIPTION:

On January 3, 1999 at approximately 0121 MST with Unit 2 at approximately 100 percent power, control room operators performed a 31 day Surveillance Requirement (SR) to verify that the PDIL alarm circuit (IB) was OPERABLE. The surveillance test (ST) procedure required the operators to insert into the plant computer (ID) a value for the lowest control element assembly (CEA) (AA) in regulating group 5 position (LREG5) that was lower than the PDIL alarm setpoint and verify the alarm actuated. With the inserted value the PDIL alarm circuit is INOPERABLE due to the inability of the plant computer to determine the actual lowest CEA in regulating group 5 position. The PDIL alarm circuit was declared INOPERABLE on January 3, 1999 at 0121 MST when a value of 115 inches was inserted into the plant computer for CEA regulating group 5 position. The PDIL alarm was verified to be functioning at that time. The ST then required the plant computer be restored to the scan mode of operation and an independent verification be performed that the CEA group 5 position was restored. The PDIL alarm circuit was declared OPERABLE at 0123 MST.

On January 31, 1999 at approximately 0219 MST, Unit 2 control room operators were performing the next regularly scheduled performance of the PDIL alarm circuit ST when a Reactor Operator observed that the plant computer had an inserted value of 150 inches for the lowest CEA in regulating group 5 position. The PDIL alarm was declared INOPERABLE and Condition D of TS 3.1.7 was entered. The Required Action for this Condition states that within one hour each regulating CEA group position be verified to be within its insertion limits and once per four hours thereafter.

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At 0305 MST the one-hour requirement was completed satisfactorily. The operators then attempted to restore the plant computer to the scan mode for the lowest CEA in regulating group 5 position. The operators were successful in placing the plant computer into the scan mode and at 0342 MST the PDIL alarm circuit was declared OPERABLE and Condition D of TS 3.1.7 was exited.

Units 1 and 3 control room personnel were contacted and they verified that their plant computers were functioning properly.

There were no safety system actuations and none were required.

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

The power dependent insertion limit (PDIL) alarm circuit is required to be OPERABLE to notify the control room operators that the CEAs are outside the required insertion limits. The insertion limits on regulating CEA sequence, overlap, and physical insertion are maintained to serve the function of preserving power distribution, ensuring that shutdown margin (SDM) is maintained, ensuring that ejected CEA worth is maintained, and ensuring adequate negative reactivity insertion on trip.

During the time period the PDIL alarm circuit was INOPERABLE, the CEAs were maintained essentially at the all rods out (ARO) position and no violation of the insertion limits occurred. The core protection calculators and CEA calculators were not affected by the PDIL circuit and remained OPERABLE throughout the event to generate thermal margin trips.

In addition, TS surveillance requirement 3.1.7.1 requires that each regulating CEA group position be verified to be within insertion limits every 12 hours. Therefore, the maximum amount of time the regulating CEAs could be inserted beyond the insertion limits, with the PDIL alarm circuit INOPERABLE, would have been 12 hours. The TS bases for the 31 day frequency of verifying the PDIL circuit OPERABLE takes credit for other Surveillances being performed at a shorter frequencies to identify CEA alignments.

The PDIL alarm remained functional for the other regulating CEA groups and would have alarmed if CEA regulating group 4 had been inserted beyond the insertion limits. Normal sequencing and overlap between groups 4 and 5 is that group 4 remains within approximately 90 inches of regulating group 5. This could have resulted in operation at 100 percent power with group 5 at 60 inches withdrawn for up to 12 hours before the PDIL condition was recognized. The condition used in the following safety consequence assessment takes no credit for the CEA group deviation alarms that would annunciate as a result of the absolute difference (5.25 inches) between

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TEXT the highest CEA in group 5 and the inserted 150 inches for the lowest CEA in group 5.

The effect of operating in this condition would not have exceeded safety analysis results for shutdown margin, adequate negative reactivity insertion on a trip, or for an ejected CEA event. Excess SDM of approximately 500 pcm would have been available to ensure reactor shutdown on a trip. The CEA ejection event analysis assumptions use either all rods out or a group fully inserted, therefore the margin of safety would not have been reduced. In addition, although the core operating limit supervisory system may have been non-conservatively impacted by using all rods out radial peaking factors, the CPC system would have operated normally and provided the appropriate trip function.

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:

A preliminary evaluation of the event has determined that the cause of the event was personnel error by control room operators (Utility-Licensed Operator). The ST procedure directed the operator to restore the LREG 5 computer point to the scan mode of operation and to verify the value of LREG 5. When the operator restored the LREG5 point to scan the computer point display did not indicate a value. In an attempt to verify the computer point value the operator inadvertently inserted a value of 150 inches. The effect of the inserted value was to leave the point in a condition that rendered it INOPERABLE. Both the operator who entered the value and the operator who performed the independent verification did not recognize this condition.

If the final evaluation results differ from this determination or if information is developed which would significantly change the readers' understanding or perception of event, a supplement to this report will be submitted.

No unusual characteristics of the work location (e.g., noise, heat, poor lighting) directly 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.

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TEXT

No component or system failures were involved.

6. CORRECTIVE ACTIONS TO PREVENT RECURRENCE:

On January 31, 1999 at approximately 0219 MST, Unit 2 control room operators identified that the computer point for monitoring CEA group position in the PDIL circuit was not capable of performing its function. The operators declared the PDIL circuit INOPERABLE, complied with the required action of TS 3.1.7, and returned the computer point to its correct condition.

An independent investigation of this event is being conducted in accordance with the PVNGS Corrective Action Program. Actions to prevent recurrence include revising the procedure, which has been completed, to clarify how the computer point is to be returned to the scan mode. In addition, this event will be reviewed in licensed operator continuing training. This training and any other actions developed based upon the results of the investigation will be tracked in the PVNGS corrective action system.

7. PREVIOUS SIMILAR EVENTS:

No similar events have been reported pursuant to 10CFR50.73 during the last three years.

8. ADDITIONAL INFORMATION:

NONE

