

LICENSEE EVENT REPORT (LER)

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

TITLE (4)
Radioactive Effluent Gaseous Monitor Valve Improperly Installed

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		
0	2	0	8	9	0	0	2	8	N/A		
0	2	0	8	9	0	0	3	0	N/A		
DOCKET NUMBER(S)											
0 5 0 0 0											

OPERATING MODE (8)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)										
1	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)							
POWER LEVEL (10)	20.405(a)(1)(i)	50.36(e)(1)	50.73(a)(2)(v)	73.71(c)							
1 0 0	20.405(a)(1)(ii)	50.36(e)(2)	50.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)							
	20.405(a)(1)(iii)	X 50.73(a)(2)(ii)	50.73(a)(2)(viii)(A)								
	20.405(a)(1)(iv)	50.73(a)(2)(iii)	50.73(a)(2)(viii)(B)								
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)								
Special Report											

LICENSEE CONTACT FOR THIS LER (12)											
NAME							TELEPHONE NUMBER				
Timothy D. Shriver, Compliance Manager							AREA CODE	6 0 2 3 9 3 - 2 5 2 1			

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 checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO			0 6	0 1	8 9

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

On February 3, 1989, Palo Verde Unit 3 was in Mode 1 (POWER OPERATION) at approximately 100 percent power when it was discovered that the detector bypass valve in the Plant Vent System Low Range Radioactive Gaseous Effluent Monitor (RU-143) was installed backwards (i.e., reverse flow direction). The improperly installed valve resulted in a portion of the sample flow bypassing the monitor's particulate filter, iodine cartridge, and gaseous activity detector. This resulted in non-conservative values being utilized when determining the amount of Plant Vent System particulate and iodine.

The monitor was out of service at the time of discovery. The valve was properly installed prior to returning the monitor to an OPERABLE status. The remaining Unit 1, 2, and 3 Radioactive Gaseous Effluent Monitors were inspected to ensure that the flow bypass valves were properly installed. No additional problems were identified.

The cause of the valve being installed backwards has not yet been determined. When the investigation is completed, a supplement to this report will be issued with our findings and conclusions.

This LER includes the information required by Technical Specifications 3.3.3.8 ACTION 42b and 6.9.2 for a Special Report.

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

NOTE: This LER is also being submitted as a Special Report pursuant to Technical Specification 3.3.3.8 ACTION 42b and Technical Specification 6.9.2 to report an event in which a Radioactive Gaseous Effluent Monitor (Plant Vent High Range Gaseous Activity Monitor RU-144) was inoperable for greater than 72 hours. The 72 hour limit for returning to operability was exceeded at approximately 1515 MST on February 4, 1989.

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

At the time of event discovery on February 3, 1989, Palo Verde Unit 3 was in Mode 1 (POWER OPERATION) at approximately 100 percent power.

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

Event Classification: Condition prohibited by the Plant's Technical Specifications.

On February 3, 1989, Unit 3 Maintenance personnel (utility, non-licensed) discovered that the detector bypass valve (FV-05)(20) in the Plant Vent System (VL) Low Range Radioactive Gaseous Effluent Monitor (RU-143)(IL)(RI) was installed backwards (i.e., reverse flow direction). This resulted in sample flow bypassing the monitor's particulate filter (FLT), iodine cartridge (FLT), and gaseous activity detector (DET). The quantity of bypassed sample flow is indeterminate which results in noncompliance with Technical Specification 4.11.2.1.2, Table 4.11-2, Notation "f".

Prior to the event, on February 1, 1989, Unit 3 Chemistry personnel (utility, non-licensed) noted that RU-143 appeared to have excessive air in-leakage as it was difficult to obtain a low flow alarm when RU-143's inlet valve was shut to check for system integrity during routine surveillance testing. A work request was initiated and an approved work authorization document was initiated to troubleshoot and correct the suspected air in-leakage problem.

At approximately 1515 MST on February 1, 1989, the Plant Vent System Radioactive Gaseous Effluent Monitors (RU-143 and RU-144) were declared inoperable to investigate the cause of the apparent sample stream leakage on RU-143. Monitors RU-143 and RU-144 work as a pair with RU-143 being the low range monitor and RU-144 being the high range monitor. Normal configuration consists of RU-143 operating and RU-144 in standby. When RU-143 reaches a predetermined setpoint, RU-144 starts and RU-143 goes into standby. RU-144 must be declared inoperable when RU-143 is removed from service. RU-144 is provided for tracking postulated accident

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releases. Pursuant to Technical Specification 3.3.3.8 ACTIONS 37 and 42a the Preplanned Alternate Sampling Program was initiated to monitor Plant Vent System effluent.

During troubleshooting it was identified that seal gaskets for the particulate and iodine filter shield assembly were leaking. It was also noted that the detector bypass valve (FV-05) was installed backwards. The valve was re-installed properly. The gaskets were replaced and the air in-leakage problem was resolved. After appropriate retesting, RU-143 and RU-144 were returned to service at approximately 1540 MST on February 4, 1989. RU-144 was inoperable approximately 72 hours and 25 minutes.

During a subsequent engineering review of the effects of the detector bypass valve being installed backwards, it was determined the valve would not have been seating properly. This allowed an indeterminate amount of bypass flow around RU-143's detector and filter section which resulted in non-conservative calculations of radioactive particulate and iodine effluent from the Plant Vent.

Surveillance Requirement 4.11.2.1.2 states, "The dose rate to I-131, I-133, Tritium and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents shall be determined to be within [prescribed] limits...by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in Table 4.11-2." Table 4.11-2, Notation "f" states, "The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1..." With an indeterminate amount of sample bypass flow, the ratio of sample flow rate to the sampled stream flow rate is not precisely known. In situ testing was performed and the existing flow ratio determined to the degree possible. The results of the testing and the effects of correcting the release calculations will be reported in a supplemental report.

- C. Status of structures, systems, or components that were inoperable at the start of the event that contributed to the event:

As discussed in Section I.B, the Plant Vent System Radioactive Gaseous Effluent Monitors were inoperable at the time of event discovery.

- D. Cause of each component or system failure, if known:

Not applicable - no component or system failures were involved.



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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 component failures were involved.

G. For failures 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 were involved.

H. Method of discovery of each component or system failure or procedural error:

Not applicable - there were no component or system failures or procedural errors.

I. Cause of Event:

An investigation to determine when the bypass valve was improperly installed is underway. Based upon the results of the investigation conducted to date, the cause of the bypass valve being improperly installed cannot be determined. PVNGS personnel are continuing to review documentation of previous work on RU-143 in an attempt to determine when the valve was incorrectly installed. A supplement to this report will be issued to describe the results of the investigation and conclusions made regarding the cause.

J. Safety System Response:

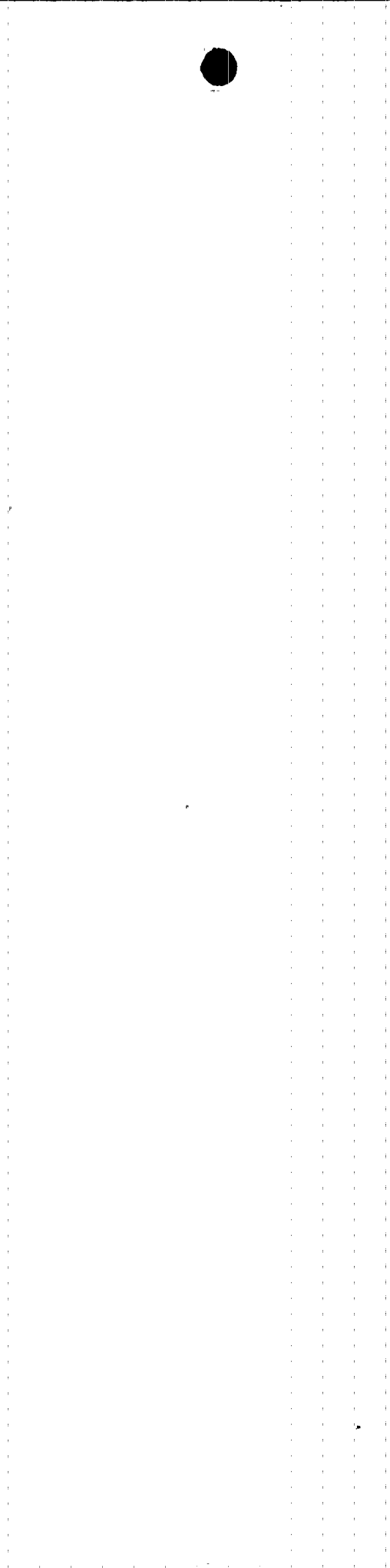
Not applicable - no safety system responses occurred and none were necessary.

K. Failed Component Information:

Not applicable - no component failures were involved.

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

The Plant Vent System radioactive gaseous effluent instrumentation is provided to monitor the releases of radioactive materials in gaseous effluents during actual or potential release of gaseous effluents. The alarm/trip setpoints for these instruments are calculated and adjusted



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in accordance with the methodology and parameters in the Offsite Dose Calculation Manual (ODCM) to ensure that an alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. There are two separate radioactive gaseous effluent monitoring channels: the low range effluent monitor (RU-143) for normal plant radioactive gaseous effluents and the high range effluent monitor (RU-144) for post-accident plant radioactive gaseous effluents. The low range monitor operates at all times until the concentration of radioactivity in the effluent becomes too high during post-accident conditions. The high range monitor only operates when the concentration of radioactive gas in the effluent is above the setpoint of the low range monitor. The bypass flow does not affect the operation of the monitor's gaseous activity channel. In the event RU-143 and RU-144 are inoperable, monitoring of Plant Vent effluent can be performed by periodic sampling and analyzing.

As discussed in Section I.B, the amount of detector bypass flow is indeterminate and varies as a function of the differential pressure across the detector/filter assembly. ANPP has conducted an evaluation to approximate the amount of bypass flow. Based upon this evaluation, PVNGS Chemistry Department personnel are conducting a re-assessment of off-site doses to the public. If information is developed which indicates that off-site dose Technical Specification limits have been exceeded, a supplement to this report will be issued. Additionally, no accident conditions occurred which would have required actuation of the high range gaseous effluent monitor (RU-144). Therefore, there were no safety consequences or implications resulting from this event.

III. CORRECTIVE ACTIONS:

A. Immediate:

The detector bypass valve was properly installed.

B. Action to Prevent Recurrence:

The detector bypass valves in the other Unit 1, 2, and 3 radioactive gaseous effluent monitors were checked. No other detector bypass valves were discovered to be improperly installed. Pending further evaluation and determination of the cause of this event, no further corrective measures to prevent recurrence are planned. When the investigation is complete, a final assessment of corrective actions will be made and reported in the supplemental report.

IV. PREVIOUS SIMILAR EVENTS:

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





Arizona Nuclear Power Project

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192-00454-JGH/TDS/DAJ
March 2, 1989

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 3
Docket No. STN 50-530 (License No. NPF-74)
Licensee Event Report 89-002-00
File: 89-020-404

Attached please find Licensee Event Report (LER) No. 89-002-00 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.

This report is also being submitted pursuant to Technical Specifications 3.3.3.8 and 6.9.2 for a Special Report to discuss the inoperability of the Plant Vent High Range Radioactive Effluent Monitor.

If you have any questions, please contact T. D. Shriver, Compliance Manager at (602) 393-2521.

Very truly yours,

J. G. Haynes
Vice President
Nuclear Production

JGH/TDS/JEM/kj

Attachment

cc: D. B. Karner (all w/a)
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