

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palo Verde Unit 1		DOCKET NUMBER (2) 0 5 0 0 0 5 2 8 1	PAGE (3) OF 0 3
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TITLE (4)
Incorrect Computer Constants Render the Containment Radiation Monitor Inoperable

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)
06	25	86	86	046	00	07	25	86	Palo Verde Unit 2		0 5 0 0 0 5 2 9
									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(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(a)(1)(vi)	20.405(a)(1)(vii)	20.405(a)(1)(viii)	20.405(a)(1)(ix)	20.405(a)(1)(x)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vi)	50.73(a)(2)(vii)	50.73(a)(2)(viii)(A)	50.73(a)(2)(viii)(B)	50.73(a)(2)(ix)	73.71(b)	73.71(c)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)	
POWER LEVEL (10) 1 0 0																						Special Report 1-SR-86-034

LICENSEE CONTACT FOR THIS LER (12)

NAME Thomas R. Bradish, Compliance Supervisor (Ext. 6936)	TELEPHONE NUMBER 6 0 2 9 3 2 - 5 3 0 0
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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)	MONTH	DAY	YEAR

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

This report also contains the required response for a special report.

At approximately 0930 on June 25, 1986, Palo Verde Unit 1 was in Mode 1 (POWER OPERATION) operating at 100 percent power and Unit 2 was in Mode 1 operating at 40 percent power when a (utility nonlicensed) operations support engineer discovered that the conversion constants utilized in the software portion of the Containment Radiation Monitor (RU-1) particulate channels were incorrect. This resulted in the alarm actuation setpoints being set at a nonconservative value for the particulate channels.

The software contained an incorrect flow factor and a detector efficiency constant. The values were supplied by the radiation monitor vendor.

As corrective action, the vendor was contacted to determine the correct constants for the monitors. The correct constants were installed in the microprocessor portion of the radiation monitor on June 27, 1986.

No component or system failures contributed to the event.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		0 4 6 -	0 0	0 2	OF	0 3	

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

This report also contains the required special report (1-SR-034-00) due to the containment radiation monitor particulate channel being inoperable for greater than 72 hours.

At approximately 0930 on June 25, 1986, Palo Verde Unit 1 was in Mode 1 (POWER OPERATION) operating at 100 percent power and Unit 2 was in Mode 1 operating at 40 percent power when a (utility nonlicensed) operations support engineer discovered, during an engineering evaluation, that the constants utilized in the software portion of the Containment Radiation Monitor (RU-1)(IL) particulate channels were incorrect. This resulted in the alarm actuation setpoints being set at a nonconservative value for the particulate channels. The particulate channels were then declared inoperable and the appropriate actions in accordance with Technical Specifications 3.3.3.1 and 3.4.5.1 were implemented.

RU-1 serves two purposes: 1) to detect reactor coolant system leakage and 2) to measure the overall activity concentration in containment.

RCS leakage is measured by comparing the rate of change of activity level over a period of time in containment. The algorithm used for indicating an RCS leak was adequate thereby satisfying the basis of Technical Specification 3.4.5.1.

The particulate channel of RU-1 measures the activity in containment (NH) by passing a sample of containment atmosphere through a filter which traps the particulates. A radiation detector measures the activity level (in units of counts per minute) of the particulates on the filter and relays it to the microprocessor (CPU) portion of the monitor. The microprocessor then utilizes an algorithm to convert the activity recorded at the filter to an equivalent containment atmospheric activity concentration (in units of microcuries per cubic centimeter) as required by Technical Specification 3.3.3.1. The high radiation level setpoints in the monitors were set in accordance with the limits specified in Technical Specification Table 3.3-6, however, the incorrect constants caused the indicated readings from the monitors' microprocessors to be less than the actual radiation levels being measured. Therefore, the monitors would not have generated an alarm if containment activity had increased to the level specified in Table 3.3-6.

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

As an immediate corrective action, the vendor was contacted to determine the correct constants for the monitors. The revised constants were installed in the microprocessor portion of the radiation monitor on June 27, 1986. The particulate channel of the radiation monitor was declared operable in Unit 1 on June 27, 1986 at 1910. The Unit 2 monitor was declared operable on June 27, 1986 at 1755.

The backup containment radiation monitors (RU-51 and RU-53) also had the incorrect constants installed in the microprocessor. The incorrect constants did not affect any other Technical Specification required monitors because the other monitors are of different design than RU-1, RU-51, and RU-53. The revised constants have been installed in both RU-51 and RU-53.

The root cause of the event was incorrect constants supplied by the vendor. An evaluation is currently being conducted to determine if this event is reportable under 10 CFR Part 50.55(e) and 10 CFR Part 21.

Grab samples taken regularly prior to this event have shown activity levels to be well below the limits established in the Technical Specifications. As described above, RCS leakage detection has been available at all times, therefore, this event had no impact on the health and safety of the public.

No automatic or manual safety system responses occurred as the result of this event. There were no structures, components, or systems that were inoperable at the start of the event that contributed to the event. There were no failed components that contributed to the event.

No operator actions or procedural deficiencies contributed to the event.

No previous similar events have occurred.



Arizona Nuclear Power Project

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July 25, 1986
ANPP-00030-JGH/TDS/JHT/96.03

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

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1 and 2
Docket Nos. STN 50-528, 50-529
Licensee Event Report-86-046-00
File: 86-020-404

Dear Sirs:

Attached please find Licensee Event Report (LER) No.86-046-00 prepared and submitted pursuant to 10 CFR 50.73. In accordance with 10 CFR 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 T. R. Bradish, Compliance Supervisor at (602)932-5300 Ext.6936.

Very truly yours,

J. G. Haynes
Vice President
Nuclear Production

JGH/JHT/dh

Attachment

cc: J. B. Martin (all w/a)
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