

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 03	
TITLE (4) Plant Shutdown Required by Technical Specifications															
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)		
07	11	85	85	042	000	08	12	85					0 5 0 0 0		
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)													
1		20.402(b)				20.406(c)				50.73(a)(2)(iv)				73.71(b)	
POWER LEVEL (10)		20.406(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)	
0 5 0		20.406(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)	
		20.406(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(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)(x)					
LICENSEE CONTACT FOR THIS LER (12)															
NAME W. F. Quinn, Manager - Nuclear Licensing (Ext. 4087)										TELEPHONE NUMBER AREA CODE 6 0 2 9 4 3 - 7 2 0 0					
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)															
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS					
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR	
YES (if yes, complete EXPECTED SUBMISSION DATE)										X NO					

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

On July 11, 1985 at 0400, Palo Verde Unit 1 was in Mode 1 at 50 percent power. Reactor Coolant System (RCS) Water Inventory Balance, procedure 41ST-1RCO2, was completed indicating that the unidentified RCS Leak Rate was 1.28 GPM. That amount of leakage exceeds the 1.0 GPM limit as specified in Technical Specification (Tech. Spec.) 3.4.5.2.b causing the Action Statement to be entered which requires "the leakage rate to be within limits within 4 hours or be in at least Hot Standby within the next 6 hours and Cold Shutdown within the following 30 hours". Attempts were made to determine the source of the leakage and another leak rate determination was completed confirming the initial value. At 0824 a Notification of Unusual Event was declared as required by the Plant Emergency Plan. At 1331 a reactor shutdown was completed and the plant entered Mode 3. At 2128 the Notification of Unusual Event was terminated based on determination of reduced RCS unidentified leakage to .88 GPM. On July 12, 1985, the NRC granted a one time 72 hour extension to the 30 hour time limit specified in the Tech. Spec. Results of the investigation effort indicated that no RCS leakage of the magnitude shown by the calculations was present. The RCS Leak Rate, procedure 41ST-1RCO2, has been improved and can accommodate changing plant conditions as well as recognize and avoid certain hazards to obtaining accurate leak rate calculations. For confirmation a 1 GPM intentional leak was induced through the sample system with the procedure showing agreement. On 7-14-85 at 2200 the reactor was taken critical to resume power ascension testing.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Palo Verde Unit 1	0 5 0 0 0 5 2 8 8 5	8 5	0 4 2	0 0	0 2	OF 0 3

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

On July 11, 1985, at 0400 Palo Verde Unit 1 was in Mode 1 at 50 percent power. Reactor Coolant System (RCS) Water Inventory Balance, procedure 41ST-1RCO2, was completed indicating that the unidentified RCS Leak rate was 1.28 GPM. That leak rate exceeded the 1.0 GPM limit as specified in Technical Specification (Tech. Spec.) 3.4.5.2.b causing the action statement to be entered which requires "that leakage rate to be within limits within 4 hours or to be in at least Hot Standby within the next 6 hours and in Cold Shutdown within the following 30 hours". Attempts were made to determine the location of the leak and another RCS leak rate determination was completed indicating 1.238 GPM unidentified leakage. At 0800 the portion of the Action Statement requiring the plant to be "in at least Hot Standby within the next 6 hours" was entered and the operations staff started preparations to shutdown the plant. At 0824 a Notification of Unusual Event was declared as required due to the plant's Emergency Plan. Required notifications were completed within 15 minutes. The main turbine was tripped at 1308 and a reactor shutdown was commenced.

At 1331 the reactor shut-down was completed and the plant entered Mode 3. This placed the plant in the portion of the ACTION statement requiring it to be "in Cold Shutdown" within the following 30 hours. At 2128 the Notification of Unusual Event was terminated based on determination of RCS unidentified leakage of .88 GPM. On July 12, 1985, the NRC granted a one time 72 hour extension to the 30 hour time limit allowed in the Tech. Spec. to allow for additional leak testing.

Extensive walkdowns of the RCS and Chemical & Volume Control System (CVCS) were conducted and no obvious external leakage of any magnitude was detected. These efforts included checking all pressure relief valves which discharge into the Equipment Drain Tank. A complete walkdown of the Reactor Coolant System was done which noted several leaks of 1-5 drops/min., which would not account for the measured water loss. All chemistry and radwaste activities were reviewed, no RCS sampling or unusual processing of water had occurred. Primary relief valve tail pipe temperatures were investigated for valve weepage, none apparent. CVCS 3-way divert/control valves were checked for leakage. The CVCS was also isolated from the RCS in an attempt to separate the leakage paths. This provided no conclusive evidence of the leakage path.

Prior to being granted the special 72 hour extension the RCS temperature and pressure were being reduced to comply with the action statement. Upon receiving this extension the RCS was returned to normal temperature and pressure to allow the leak investigation to continue. Soon afterwards, (2128) the leak rate was determined to be < 1 gpm and as stated the Unusual Event was terminated. The investigations continued for the next 24 hours in an attempt to identify the leak with no result. It is believed that the leak self-terminated during the period when preparations were being made to reduce RCS Temperature and Pressure. Subsequent RCS leakage calculations revealed consistently an acceptable unidentified leakage.

Although the RCS leak rate procedure 41ST-1RCO2 was verified as adequate to identify a 1 GPM leakrate several refinements were made to increase the accuracy. These included temperature compensation corrections, pressurizer pressure compensations, increased leak rate time interval from 2-4 hours, and added instructions to clarify the evaluation of potential conditions which could invalidate the test. To reduce the probability of errors an alternate method utilizing a computer program to

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

calculate leakrates was added.

Effort was then concentrated on the Equipment Drain Tank (EDT). The EDT level change is one of the Variables used in measuring and evaluating the RCS identified leakage. As was noted, the largest potential for the introduction of error in the unidentified leakage determination is in the EDT volume change calculation due to its being a large, horizontal, cylindrical tank.

Numerous RCS leak rate tests were performed that assured that whatever conditions were causing the unacceptably high unidentified leakage were now changed as was the procedural method of detection. For further confirmation, a 1.0 GPM intentional leak was induced, through the sample system with the procedure showing agreement. The results of the investigative effort indicate that there never was an out-of-system leak of the magnitude shown by the calculations. The RCS leak rate procedure, 41ST-1RCO2, has been improved and can accomodate changing plant conditions as well as recognize and avoid certain hazards to obtaining accurate leak rate calculations.

No offsite releases of radioactivity occurred as a result of this event.

On 7-14-85 at 2200 the reactor was taken critical to resume power ascension testing.



Arizona Nuclear Power Project

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

August 12, 1985
ANPP-33192-EEVB/JRP

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528, License No. NPF-41
Licensee Event Report - Plant Shutdown
Required by Technical Specifications
File: 85-056-026; G.1.01.10

Dear Sirs:

Attached please find Licensee Event Report (LER) No. 85-042-00 prepared and submitted pursuant to 10 CFR 50.73. This LER addresses plant shutdown as required by Technical Specifications. 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 or concerns, please contact me.

Very truly yours,

E. E. Van Brunt, Jr.
Executive Vice President
Project Director

EEVB/GEC/slh
Attachments

cc: J. B. Martin (all w/a)
R. P. Zimmerman
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E. A. Licitra
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INPO Records Center

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