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SUBJECT: LER 94-017-00: on 941020, TS limit exceeded due to improper
 calibr of suppression pool narrow range level transmitters.
 Suppression pool level was returned to appropriate TS
 operating level at 1558 hr. W/941121 ltr.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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Docket No. 50-397

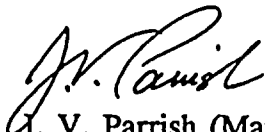
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Subject: **NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21,
LICENSEE EVENT REPORT NO. 94-017, REVISION 0**

Transmitted herewith is Licensee Event Report No. 94-017 for the WNP-2 Plant. This report is submitted in response to the reporting requirements of 10CFR50.73 and discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Should you have any questions or desire additional information, please call me or D.A. Swank at (509) 377-4563.

Sincerely,



J. V. Parrish (Mail Drop 1023)
Assistant Managing Director, Operations

JVP/JMP
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Washington Nuclear Plant - Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 3 9 7					PAGE (3) 1 OF 5		
TITLE (4) Technical Specification Limit Exceeded Due to Improper Calibration Of The Suppression Pool Narrow Range Level Transmitters.																	
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)		
												N/A			0 5 0 0 0		
10	20	94	94	-	0	1 7	-	0 0	11	21	94				0 5 0 0 0		
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR: (11)													
POWER LEVEL (10) 1 0 0		20.402(b)		20.405c		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)(x)											
LICENSEE CONTACT FOR THIS LER (12)																	
James M. Pedro, Compliance Engineer										TELEPHONE NUMBER							
										AREA CODE 509			377-8418				
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			
I YES (if yes, complete EXPECTED SUBMISSION DATE)										X NO							
ABSTRACT (16)																	
<p>At 1544 hours on October 20, 1994, the Control Room was informed the suppression pool narrow range water level transmitters had been improperly calibrated. Due to the improper calibration, the suppression pool actual water level was approximately two inches greater than indicated level. The difference between actual and indicated level resulted in exceeding the high level limit of Technical Specification 3.6.2.1. Suppression pool water level was lowered to within Technical Specification limits and the narrow range level transmitters were recalibrated. The calibration error resulted from a failure to recognize the impact on the transmitter zero reference point when a transmitter utilizes a wet sensing line and a dry reference line and account for this in the calibration procedure. The error occurred in 1983 during original development of the calibration procedure for one transmitter and during a procedure revision in 1985 for the other two transmitters. Corrective actions include changing the calibration procedures, calibrating the transmitters, and reviewing calibration procedures for other transmitters using the same calibration methodology. Because the suppression pool volume increase was determined to have a negligible impact on plant safety, the condition described in this report did not have an effect on the safe operation of the plant or the health and safety of the public.</p>																	

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TEXT (17)

Event Description:

At 1544 hours on October 20, 1994 with the plant in Operational Condition 1 at 100 percent power, the Control Room was informed that the suppression pool [BT] narrow range water level transmitters [LT] (CMS-LT-1, CMS-LT-2 and CMS-LT-2R) were improperly calibrated. The calibration error resulted in actual suppression pool level being approximately two inches greater than indicated level and exceeding the high level limit of Technical Specification 3.6.2.1 at various times since initial plant operations. The error was discovered during a field walkdown of the transmitters for a previous Problem Evaluation Report (PER) corrective action.

The transmitters are Rosemount differential pressure transmitters [PDI] and are mounted with the center of the diaphragm at a plant elevation of the 464 feet 1.75 inches. This point is -25 inches below the original suppression pool normal level of 466 feet 2.75 inches. Suppression pool normal level was later adjusted to 466 feet 3 inches. The transmitters are calibrated through a range of +/-25 inches; with the zero representing suppression pool normal level at a plant elevation of 466 feet 3 inches. Technical Specification high and low limits for suppression pool level are set at +1.75 and -2.25 inches respectively. The high limit corresponds to a plant elevation of 466 feet 4.75 inches; while the low limit is at a plant elevation of 466 feet 0.75 inches. The High Pressure Core Spray (HPCS) System has a suction valve switchover from the condensate storage [KA] tank [TK] to the suppression pool at +5.0 inches in the suppression pool. The +5.0 inches in the suppression pool is at a plant elevation of 466 feet 8 inches.

Due to a difference between the Technical Specification allowed operating band and the EOP entry points, an action was issued to make the Technical Specifications and EOPs coincide. In response to this action, the "normal" suppression pool level was to be lowered by 0.25 inches (to elevation 466' 2.75"). Field investigations to determine the calibration steps necessary to lower the normal level revealed that the suppression pool narrow range water level transmitters were incorrectly calibrated. Using the sea level surveyor markings on the wall, the distance from the suppression pool +5.0 inch water level mark to the top of the suppression pool narrow range transmitter vent port (assumed zero reference point for the transmitter) was measured. This measurement should have revealed a distance of 30 inches. Instead the measurement revealed the distance to be approximately 28 inches.

The calibration error occurred during original calibration procedure development for one of the transmitters and a revision of the calibration procedure for the other transmitters. The procedures implemented a wet sensing leg and dry reference leg calibration and when doing so failed to account for the impact on the transmitter zero reference point. The use of a wet sensing leg shifted the

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TEXT (17)

transmitter zero reference point from the center of the transmitter to the top of the transmitter vent port, introducing approximately a two inch calibration error. The wet leg calibration would have been appropriate for the transmitters had the calibration procedures properly accounted for the shift in the transmitter zero reference.

Immediate Corrective Action:

The plant entered the appropriate EOPs and Technical Specification Action Statement. Suppression pool level was returned to the appropriate Technical Specification operating level at 1558 hours and the Action Statement was exited at 1600 hours on October 20, 1994.

Operator aids to determine actual suppression pool water level from the indicated values were provided until the level transmitters were properly calibrated.

Further Evaluation:

Plant Procedure Manual procedures were reviewed to identify other transmitter calibration procedures implementing the wet/dry calibration methodology. The procedure review did not identify any instances where the wet/dry calibration methodology failed to account for its impact on the transmitter zero reference point in the procedure. The Instrumentation & Control shop, Procedures Group, and Technical Staff were queried to determine if any other transmitters used the wet/dry calibration methodology and could have similar calibration errors. These discussions did not identify any concerns related to use of the wet/dry transmitter calibration methodology.

This event is reported per 10 CFR 50.73(a)(2)(i) as a condition prohibited by the Technical Specifications.

There were no structures, systems, or components that were inoperable at the start of the event that contributed to the event.

Root Cause:

The calibration error occurred during original development of the calibration procedure for transmitter CMS-LT-2R and during a revision of the calibration procedure for transmitters CMS-LT-1 and CMS-LT-2. It resulted from a failure to recognize and account for the impact on the transmitter zero reference point when the transmitter employs a wet sensing line and a dry reference line.

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Further Corrective Actions:

The calibration procedures for the suppression pool narrow range water level transmitters were corrected. Each of the suppression pool narrow range instruments were recalibrated and the operator aids were removed at 0420 hours on October 21, 1994.

Safety Significance:

An evaluation was performed to determine the impact on plant safety as a result of exceeding the Technical Specification suppression pool limit. The evaluation incorporated known levels from previous high suppression pool events and considered the mechanical and thermal impacts of the increased suppression pool level on containment and related plant systems. The conclusion was that the two inch level error resulted in an actual suppression pool volume increase of 0.63 percent which did not pose a challenge to any design basis limit. The two inch level error was determined to be within the range of the containment design basis analysis and would not impact the operations of related systems. Consequently, the condition described in this report did not have an effect on the safe operation of the plant or the health and safety of the public.

Previous Similar Events:

A review of LERs for similar root cause, failure, or sequence of events did not identify any similar LERs. The LER review did identify the following events related to exceeding suppression pool level limits and events which could have provided earlier discovery of the condition identified in this LER.

LERs 90-014, 91-015 and 93-007 involved HPCS switchover events at suppression pool levels less than the +5.0 inch setpoint. The indicated suppression pool levels at the time of the HPCS switchover events ranged from +3.0 to +3.5 inches. Due to the fact that the HPCS switchovers occurred within instrument tolerances and the instruments were within calibration, no actions were taken to determine why the actuations occurred at a lower than expected level. Thus, the corrective actions did not address the conditions described in this LER.

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EIIS Information

Text Reference

EIIS Reference

System Component

Condensate Storage Tank
 CMS-LT-1, 2, & 2R
 High Pressure Core Spray (HPCS)
 Rosemount differential pressure
 transmitters
 Suppression Pool

KA	TK
BT	LT
BG	---
---	PDI
BT	---