ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9209020013 DOC. DATE: 92/08/26 NOTARIZED: NO DOCKET #
FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylva 05000387
50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylva 05000388
AUTH. NAME AUTHOR AFFILIATION
KEISER, H. W. Pennsylvania Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION
MILLER, C. L. Project Directorate I-2

SUBJECT: Provides info re failure of 5 remote temp detectors used in Unit 1 suppression pool temp monitoring sys. Detectors mfg by Hy-Cal Engineering. Possibly caused by entrained moisture in sensing units. Accelerated testing in both units underway.

DISTRIBUTION CODE: A001D COPIES RECEIVED: LTR 1 ENCL 0 SIZE: 2
TITLE: OR Submittal: General Distribution

NOTES: LPDR 1 cy Transcripts. ; MAXWELL, G 05000387/
LPDR 1 cy Transcripts. ; MAXWELL, G 05000388

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD1-2 LA	1	1	PD1-2 PD	1	1
	RALEIGH, J.	2	2			
INTERNAL:	ACRS	6	6	NRR/DET/ESGB	1	1
	NRR/DOEA/OTSB11	1	1	NRR/DST/SELB 7E	1	1
	NRR/DST/SICB8H7	1	1	NRR/DST/SRXB 8E	1	1
	NUDOCS-ABSTRACT	1	1	OC/LFMB	1	0
	OGC/HDS2	1	0	REG FILE 01	1	1
	RES/DSIR/EIB	1	1			
EXTERNAL:	NRC PDR	1	1	NSIC	1	1
NOTES:		2	2			

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 504-2065) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 24 ENCL 22

MAP

RIDS/ADDS

PP&L Pennsylvania Power & Light Company
Two North Ninth Street • Allentown, PA 18101-1179 • 215/774-5151

Harold W. Keiser
Senior Vice President-Nuclear
215/774-4194

AUG 26 1992

Director of Nuclear Reactor Regulation
Attention: Mr. C. L. Miller, Project Director
Project Directorate I-2
Division of Reactor Projects
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION
FAILURES OF HY-CAL RTDs **Docket Nos. 50-387**
PLA-3842 FILE R41-2A **and 50-388**

Dear Mr. Miller:

This letter serves to provide information regarding the failure of 5 remote temperature detectors (RTDs) used in the Susquehanna Steam Electric Station Unit 1 suppression pool temperature monitoring system (SPOTMOS).

The RTDs in question were procured from a single common lot of detectors (Part No. RTS-4096-B-A-100-C290-3-12-XI-M3) manufactured by Hy-Cal Engineering of El Monte, California. These RTDs have failed to meet minimum insulation resistance test criteria after less than 18 months service whereas previously installed Hy-Cal RTDs in this application have seen service in excess of 10 years. Analysis of the RTD failure rates and resistance or voltage drift rates, indicates that entrained moisture in the sensing units may be a likely mechanism to cause the operating problems and failures encountered. It is hypothesized that any entrained moisture dissociates the magnesium oxide within the RTD forming an electrolytic reaction that acts much like an internal battery. It is thought that when the RTD is removed from service this electrolytic affect dissipates over time making the test results difficult to repeat.

Additional testing is required to confirm the tentative conclusion above. Toward this end, PP&L has returned the RTDs to Hy-Cal for analysis. Initial reports from Hy-Cal have proven inconclusive regarding the exact failure mechanism. Further activities, possibly in the form of destructive analysis, may be required to arrive at the root cause failure

A001
1/0

determination for the RTDs. In the interim PP&L has replaced all Hy-Cal RTDs in Unit 1 from the suspect lot and we have accelerated testing of all inservice RTDs in both Unit 1 and Unit 2 to every 6 months. Unit 2 has 1 Hy-Cal RTD from the suspect lot but to date no performance problems have been noticed, and we currently plan to replace this RTD in the upcoming Unit 2 5th refueling and inspection outage.

PP&L is pursuing a root cause failure determination for these RTDs in conjunction with Hy-Cal. As we determine a more definitive diagnosis of the problem with these RTDs we will develop a corrective action plan and if required, submit a report per 10CFR21.

If you have any questions please call Mr. J.B. Wesner at 215-774-7911.

Very truly yours,

H. W. Keiser

cc: NRC Document Control Desk (original)
NRC Region I
Mr. G. S. Barber, NRC Sr. Resident Inspector
Mr. J. J. Raleigh, NRC Project Manager