

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9202030261    DOC. DATE: 92/01/29    NOTARIZED: NO    DOCKET #  
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv    05000387  
 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv    05000388  
 AUTH. NAME    AUTHORITY AFFILIATION  
 KEISER, H.W.    Pennsylvania Power & Light Co.  
 RECIPIENT NAME    RECIPIENT AFFILIATION  
 MILLER, C.L.    Project Directorate I-2

SUBJECT: Provides info concerning discrepancy in Limitorque Corp published curves for torque output. Discrepancy discovered during testing in compliance w/NRC Generic Ltr 89-10.

DISTRIBUTION CODE: A001D    COPIES RECEIVED: LTR 1 ENCL 0 SIZE: 3  
 TITLE: OR Submittal: General Distribution

NOTES: LPDR 1 cy Transcripts.    05000387  
 LPDR 1 cy Transcripts.    05000388

	RECIPIENT		COPIES			RECIPIENT		COPIES	
	ID CODE/NAME		LTTR	ENCL		ID CODE/NAME		LTTR	ENCL
	PD1-2 LA		1	1		PD1-2 PD		1	1
	RALEIGH, J.		2	2					
INTERNAL:	ACRS		6	6		NRR/DET/ECMB 7D		1	1
	NRR/DET/ESGB		1	1		NRR/DOEA/OTSB11		1	1
	NRR/DST 8E2		1	1		NRR/DST/SELB 7E		1	1
	NRR/DST/SICB8H7		1	1		NRR/DST/SRXB 8E		1	1
	NUDOCS-ABSTRACT		1	1		OC/LEMB		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. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 26 ENCL 24<sup>0</sup>

MAY

R  
I  
D  
S  
/  
A  
D  
D  
S



SECRET

SECRET



**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

JAN 29 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, DC 20555

**SUSQUEHANNA STEAM ELECTRIC STATION  
DISCREPANCY IN TORQUE CURVES FOR  
LIMITORQUE SMB-O ACTUATOR SPRING PACKS  
PLA-3709 FILES R41-2/A17-10**

Docket Nos. 50-387  
and 50-388

Dear Mr. Miller:

The purpose of this letter is to provide information concerning a discrepancy in Limatorque Corporation published curves for torque output versus torque switch setting characteristics for Limatorque SMB-O Actuators Model 60-600-0017-1. This discrepancy was recently discovered during testing in compliance with NRC Generic Letter 89-10 as a result of aggressive team work between our Maintenance and Engineering groups.

Limatorque published curves for two spring packs used in this actuator depict distinctly different torque output versus torque switch setting characteristics. The two spring packs carry different model numbers, yet are physically and functionally identical in all practical respects. Testing has shown the newer model spring pack to be more accurate; the older model curve underestimates the torque output for a given torque switch setting by as much as 50% to 100%.

The condition is known to exist for the (Old Style) Number 60-600-0017-1 spring pack (New Model 0501-184). Potentially as many as 10 other spring pack models are affected at Susquehanna.

030091

9202030261 920129  
PDR ADOCK 05000387  
P PDR

A001  
1/10

The specific valve actuator applications identified at Susquehanna for the 60-600-0017-1 spring packs are not adversely affected by the subject design error. The identified condition could result in over stressed valve components, damaged disks and seat rings, and opening torques that approach the motor capabilities. However, the affected valves are in large, low pressure applications with sufficient design stress margin to provide confidence that damage would not occur. Specific design calculations provide support for this conclusion. Formal calculations documenting the analysis will be completed as part of the engineering deficiency disposition process.

The valve over-torque in the closed direction could result in difficulty in opening the valve when required; under voltage conditions may aggravate the situation, but the opening functions can generally be postponed until the under voltage condition clears. In addition the valves of concern do not have an opening safety function.

The valves are designed with significant seismic loads in addition to the operating loads. The valve functions are manually actuated, none of which are required or expected to occur when subjected to seismic and LOCA hydrodynamic loads. Therefore, there is a considerable margin to the operating limits for the affected valves; the over-torque condition due to the spring pack is expected to be less than the valve thrust design factor for this dynamic loads.

Therefore, there is minimal safety significance of the identified condition with respect to the known applications at Susquehanna and is, therefore not reportable under 10CFR21. The identified condition can result in the miscalibration of torque switches for motor operated valves such that the setpoint is outside the acceptable range for the device and application. Although no service has been identified where the condition is considered to pose a safety problem at Susquehanna, we have decided to inform NRC of this condition since the spring pack may be used in applications at other facilities where the condition may create a substantial safety hazard.

Based on a similar difference between new and old model spring packs that are apparently identical but which have different calibration curves, other older model spring packs from the same manufacturer are being thoroughly investigated for the same defect. Additional calculations are being expeditiously prepared to evaluate those devices; additional defects and deficiencies will be reported as they are identified. The analysis is expected to be complete by the end of March, 1992.

Our engineering department is preparing a list of all affected valves that will be used to chart our corrective actions, as well as to assess impact on the upcoming Unit 1 6th Refueling and Inspection Outage currently scheduled to begin in March 1992.

6  
6  
6  
6  
6

U  
N  
I  
T  
E  
D  
S  
T  
A  
T  
E  
S

DEPARTMENT OF THE ARMY  
OFFICE OF THE ADJUTANT GENERAL  
WASHINGTON, D. C.

If you have any questions please direct them to 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 Resident Inspector  
Mr. J. J. Raleigh - NRR Project Manager

