

NRC FORM 366  
(12-81)  
10 CFR 50U.S. NUCLEAR REGULATORY COMMISSION  
LICENSEE EVENT REPORTAPPROVED BY OMB  
3150-0011CONTROL BLOCK: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)01 P A S E S 1 2 0 0 - 0 0 0 0 0 0 - 0 0 0 3 4 1 1 1 1 4 5  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
LICENSEE CODE LICENSE NUMBER LICENSE TYPE CATCON'T  
01 REPORT SOURCE L 6 0 5 0 0 0 3 8 7 7 0 9 2 7 8 3 8 0 4 0 6 8 4 9  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
DOCKET NUMBER EVENT DATE REPORT DATE

## EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 During a HPCI operability surveillance, the valve which controls cooling water  
03 flow to the HPCI lube oil cooler and barometric condenser would not cycle elect-  
04 ically. The valve stroked freely when operated manually. Investigation showed that  
05 the valve motor's overload heaters had burned open and that the valve operator  
06 motor was damaged. HPCI initiation capability was not affected and the valve  
07 could have been operated manually. The remaining ECCS were available. There was  
08 no adverse effects to public health and safety.  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 10009 SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE  
S F 11 E 12 B 13 V A L V O P 14 B 15 Z 16  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.  
8 3 1 4 0 0 3 X 1  
17 LER/RO REPORT NUMBER 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPRO-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER  
X 18 Z 19 Z 20 Z 21 0 0 0 0 Y 23 Y 24 N 25 L 2 0 0 0  
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

## CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 Valve electrical inoperability resulted when the torque switch did not actuate due  
11 to conditions in the spring pack. The spring pack was cleaned and reassembled and  
12 damaged components replaced. The valve was successfully tested and returned to  
13 service. An investigation was completed which determined that the circumstances  
14 which resulted in this LER are unique. No additional investigations are planned.  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100FACILITY STATUS % POWER OTHER STATUS (30) METHOD OF DISCOVERY DISCOVERY DESCRIPTION (32)  
1 5 E 28 1 0 0 29 NA A 31 Engineering Evaluation  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY (35) LOCATION OF RELEASE (36)  
1 6 Z 33 Z 34 NA  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION (39)  
1 7 0 0 0 37 Z 38 NA  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
PERSONNEL INJURIES NUMBER DESCRIPTION (41)  
1 8 0 0 0 40 NA  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION (43)  
1 9 Z 42 NA  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
PUBLICITY ISSUED DESCRIPTION (45)  
2 0 N 44 NA  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 1008404240311 840406  
PDR ADOCK 05000387  
S PDR

NRC USE ONLY

NAME OF PREPARER L.A. Kuczynski

PHONE (717) 542-3759

ATTACHMENT

LER # 83-140/03X-1

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Pennsylvania Power & Light Company  
Susquehanna Steam Electric Station  
Docket Number: 50-387

Following a preventive maintenance activity on the HPCI turbine exhaust pressure switches, a surveillance to verify HPCI system operability was performed. During the surveillance, the valve which controls cooling water flow to the HPCI lube oil cooler and barometric condenser was found to be electrically inoperable. This resulted in entry into Limiting Condition for Operation (LCO) 3.5.1 at 2200 on September 27, 1983. Upon investigation, it was determined that the valve was still mechanically operable. The valve's thermal overload heaters had burned open. The valve motor windings, armature and brushes were also burned. A thorough investigation of the torque switch spring pack revealed the following:

- 1 - grease in the spring pack.
- 2 - one Belville washer (out of 17) was installed backwards.

The combination of these items caused the torque switch to fail to open at the specified torque, causing the valve operator motor to burn up on over-torque with a locked rotor.

The spring pack was reworked and proper torque switch actuation was verified. The motor was replaced with a similar motor from Unit 2. Proper valve operation was verified and the LCO was cleared at 0446 on September 29, 1983.

Equipment Maintenance history was reviewed for safety related Limitorque actuators. All actuators of two or more torque related problems were inspected. No washers were found to be installed backwards. Grease in the spring pack area. This problem was corrected by removing the hardened grease and replenishing with new grease.

related problems on having a history Of the six actuators, four actuators had hardened and were corrected by removing the

Five more actuators were inspected which had a history of one torque related problem. No discrepancies similar to those initially identified were found. Hence, the backward washer can be considered an isolated case. Hardened grease problems were located using equipment history, and the grease was removed and replenished. Future problems with hardened grease will be identified by the Equipment Qualification Program, and inspection of grease will be performed in accordance with the Maintenance PM Program. Current plans include the inspection of safety-related Limitorque actuators for acceptable lubricant as plant conditions permit.

To assist in troubleshooting future maintenance problems, the following will be performed:

ATTACHMENT

LER #83-140/03X-1

PAGE 2 OF 2

1. When maintenance is performed on actuator springpacks or torque switches, the work plan will include documenting "as-found" conditions and "as-left" conditions.
2. Troubleshooting torque related problems will include measurement of torque required to trip the torque switch for comparison to maximum design values.
3. The findings of the investigation will be reviewed with maintenance personnel involved with Limitorque actuator repair to ensure early detection of potential problems and increase reliability.

In summary, as a result of this investigation, Q Limitorque actuators experiencing greater than one torque related problem in a 2 year period have been identified and inspected. The maintenance program will be revised in accordance with the above commitments to assure early identification and resolution of spring pack/torque switch problems. Current plans are to inspect safety-related Limitorque actuators for acceptable lubricant as plant conditions permit.



Pennsylvania Power & Light Company

April 6, 1984

Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Dr. Thomas E. Murley  
Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 83-140/03X-1  
ER 100450 FILE 841-23  
PLA-2167

Docket No. 50-387  
License No. NPF-14

Dear Dr. Murley:

Attached is updated Licensee Event Report 83-140/03X-1. The Licensee Event Report was originally submitted in accordance with Technical Specification 6.9.1.9.b, when it was determined that a HPCI valve actuator's torque switch failed to actuate and caused motor damage. This update details the actions taken since the event. Licensee Event Report 83-111/03L-0 describes a similar occurrence. No further updates are required.

H.W. Keiser  
Superintendent of Plant-Susquehanna

LAK/pjg

Attachment

cc: Mr. R.H. Jacobs  
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