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REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9008280376 DOC. DATE: 90/08/23 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv 05000387
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SUBJECT: LER 90-016-00: on 900724, equipment exceeded qualified life
 environ qualification program. W/9 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 1 cy Transcripts. 05000387

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Pennsylvania Power & Light Company

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August 23, 1990

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 90-016-00
FILE R41-2
PLAS - 440

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

Attached is Licensee Event Report 90-016-00. This report is being made pursuant to 10CFR50.73(a)(2)(v), in that a condition existed that alone could have prevented the fulfillment of safety system functions due to problems with the qualified life of components in two safety related systems. This condition has been corrected and necessary reviews have been completed to ensure compliance with Environmental Qualification requirements.

H.G. Stanley
Superintendent of Plant - Susquehanna

HL/mjm

cc: Mr. T.T. Martin
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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) **Susquehanna Steam Electric Station - Unit 1** DOCKET NUMBER (2) **0 5 1 0 0 0 0 3 8 7 1** PAGE (3) **0 4**

TITLE (4) **Equipment Exceeded Qualified Life per Environmental Qualification Program**

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	24	90	90	016	00	08	23	90	Unit 2	0 5 1 0 0 0 0 3 8 8

OPERATING MODE (9) **1**

POWER LEVEL (10) **1 0 0**

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME **Harrison Lloyd, Jr. - Power Production Engineer**

TELEPHONE NUMBER **7 1 1 7 5 1 4 2 - 3 9 1 7**

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On June 29, 1990 PP&L received information that called into question the environmental qualification of four NH90 hydraulic actuators in the Standby Gas Treatment and Emergency Switchgear Room Cooling Systems. Further evaluation and validation of this information was begun in parallel with plans to refurbish the equipment in question. The problem was due to an incorrect temperature entry in the EQ index database which resulted in PP&L's failing to re-evaluate this equipment when the postulated post-LOCA Reactor Building temperature were revised in 1989. The problem was discovered while performing work to upgrade our EQ files. This condition was determined to be reportable per 10CFR50.73 (a) (2) (v). There were no significant safety consequences or compromises to the public health or safety. Appropriate parts were replaced with qualified material. All equipment in the EQ binders (files) that could be affected by a similar error was reviewed. Eight other similar occurrences were identified. The affected equipment for these eight occurrences was evaluated and the information in the binders supported qualification.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

DESCRIPTION OF EVENT/CONDITION

On June 29, 1990 PP&L received information that called into question the qualification of two damper actuators on the Standby Gas Treatment System (SBGT) (EIIS Code: BH) and two valve actuators on Emergency Switchgear Room Cooling System (EIIS Code: VA). The information called into question the material used as seals in the actuators. Further evaluation and validation of this information was begun in parallel with plans to changeout the actuators in question if OPERABILITY of the components was determined to be affected. On July 20, 1990 a decision was made to rebuild the actuators in question even though a final determination on component operability was not yet available. On July 24, 1990 it was determined that OPERABILITY of the actuators was affected. At this time the two valve actuators on the Emergency Switchgear Room Cooling System and one damper actuator on SBGT had been replaced. The remaining damper actuator on SBGT was declared inoperable and T.S. 3.6.5.3 Action (a) was entered. On July 25, 1990 this actuator was rebuilt and the LCO Action Statement was cleared.

CAUSE OF EVENT/CONDITION

The cause of this condition was determined to be an incorrect temperature specified in the Environmental Qualification EQ index database. This resulted in the subject actuators not being re-evaluated when the post-accident temperature in the area in which the actuators are located were revised by calculations performed in 1989. The error was discovered during a self initiated Equipment Qualification binder upgrade project.

REPORTABILITY/ANALYSIS

This condition was determined to be reportable per 10CFR50.73(a) (2) (v) as a condition that alone could have prevented the fulfillment of the safety function of systems that are needed to remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident.

Concerning the SGTS damper actuators, the failure mode is such that the dampers would fail closed due to leakage of hydraulic fluid past the seals. Based on data available, it is our judgement that the dampers would have continued to

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

operate for a few days and possibly up to 30 days depending on the dampers operating history. Therefore, the postulated failure would have occurred after initial SGTS draw down function during an accident condition and the only safety concern would be one of long term maintenance of Secondary Containment pressure using SGTS.

The Emergency Switchgear Cooling System provides emergency cooling to the four Emergency Switchgear rooms. Emergency cooling is provided post accident since normal cooling is automatically secured as a result of the accident condition. Concerning the Emergency Switchgear cooling water valve actuators, the failure mode is such that the valves would fail due to leakage of hydraulic fluid past the seals. Based on data available, it is our judgement that the valves would have continued to operate for a few days and possibly up to 30 days depending on the valves operating history. Therefore, the postulated valve failure would not occur until several days following an accident.

Failure of the valves would result in overcooling of the Dx Unit condenser and a trip of the system on low suction pressure. Given the fact any failure would occur days into the event, the electrical heat load within the switchgear rooms would be reduced since many ECCS loads would be shutdown. Also, it is possible normal ventilation to the reactor building (including the emergency switchgear) may have already been restored. If this action had not been taken by the time the valves failed, a loss of switchgear cooling would occur.

There were no safety consequences as a result of this condition and the potential safety significance was determined to be minimal based on alternate methods available for restoration of secondary containment pressure (damper actuator replacement, gagging damper in intermediate position) and/or Emergency Switchgear Room Cooling should an actuator fail following an accident.

In accordance with the guidance provided in NUREG 1022, Supplement 1, items 14.1 and 14.2, the required submission date for this report was determined to be August 23, 1990.

CORRECTIVE ACTIONS

Upon discovery of this discrepancy, two parallel paths were taken until the analysis was finalized. One path was pursuing necessary action to rework the subject equipment should the analysis require such action. The other path was that if the analysis revealed the equipment was still acceptable, then no rework would be required and the proper changes to the Environmental

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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

Qualification data would be in place. The rework of three of the four actuators was completed prior to the analysis being completed. The fourth actuator (in the Standby Gas Treatment System) was completed with the limiting condition for operation in effect which became effective upon receipt of the final analysis.

The seals in the subject actuators were replaced. The new seals were viton material which was determined to be environmentally qualified for the corrected environmental conditions. The seals which were removed contained polyurethane.

In addition, our Nuclear Plant Engineering EQ personnel reviewed the qualification binders (files) of all Environmentally Qualified equipment that was affected by the new post-LOCA Reactor Building temperatures to assure that the equipment was correctly qualified for these temperatures. In this process eight other similar occurrences were identified. The affected equipment for these eight occurrences was evaluated and the information in the binders supported qualification; thus this equipment's operability was not affected.

ADDITIONAL INFORMATION

Failed Component Identification: Not applicable.

Previous Similar Events: None.