

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9701070104 DOC.DATE: 96/12/23 NOTARIZED: NO DOCKET
FACIL:50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylva 0500038
AUTH.NAME AUTHOR AFFILIATION
KUCZYNSKI,G.J. Pennsylvania Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Forwards LER 96-009-00, event was determined to be reportable per 10CFR50.73(a)(2)(i)(B) in that 'D' RHR pump was inoperable.

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

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December 23, 1996

~~RE ISSUED TO CORRECT
LETTER NUMBER FROM
PLAS 454 TO PLAS 692
NO CHANGES TO TEXT~~

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
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SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-388/96-009-00
PLAS - 692 FILE R41-2

Docket No. 50-388
License No. NPF-22

Attached is Licensee Event Report 50-388/96-009-00. This event was determined to be reportable per 10CFR50.73(a)(2)(i)(B) in that the 'D' RHR pump was inoperable due to a pump suction valve interlock problem. The inoperability was unknown and no Limiting Condition for Operation (LCO) was entered until the pump was being aligned for suppression pool cooling operation. This is a condition prohibited by the Technical Specifications.

G. J. Kuczynski
Plant Manager - Susquehanna SES

Attachment

cc: Mr. H. J. Miller
Regional Administrator
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Kenneth M. Jenison
Sr. Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 35
Berwick, PA 18603-0035

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PDR ADOCK 05000388
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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 2	DOCKET NUMBER(2) 0 5 0 0 0 3 8 8 1	PAGE (3) OF 0 4
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TITLE (4)
Inoperability of 'D' RHR Pump Unknown

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)
1	1	2 1 9 6	9 6	0 0 9	0 0	1	2 2 3 9 6			0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (Check one or more of the following) (11)									
POWER LEVEL (10) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(X)	<input type="checkbox"/> 50.30(e)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(e)						
	<input type="checkbox"/> 20.405(a)(1)(X)	<input type="checkbox"/> 50.30(e)(2)	<input type="checkbox"/> 50.73(a)(2)(v)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)						
	<input checked="" type="checkbox"/> 20.405(a)(1)(M)	<input checked="" type="checkbox"/> 50.73(a)(2)(f)	<input type="checkbox"/> 50.73(a)(2)(v)(A)							
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(g)	<input type="checkbox"/> 50.73(1)(2)(v)(B)							
<input type="checkbox"/> 20.405(a)(1)(X)	<input type="checkbox"/> 50.73(a)(2)(h)	<input type="checkbox"/> 50.73(a)(2)(v)								

(LICENSEE CONTACT FOR THIS LER (12))

NAME Cornelius T. Coddington, Senior Project Engineer	TELEPHONE NUMBER
	AREA CODE: 7 1 7 NUMBER: 5 4 2 - 3 2 8 9

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 November 21, 1996, at 2228, with Unit 2 in Condition 1 (Power Operation) at 100% power, the 'D' Residual Heat Removal (RHR) pump failed to start when aligned for Suppression Pool Cooling operation. Technical Specification 3.5.1 Action b.1 was entered. The cause of the failure to start was determined to be that Rotor 3 in the limit switch for the pump suction valve was not aligned correctly to ensure consistent operation and thus maintained the pump trip relay in the energized state when the pump suction valve was full open. During the investigation of the failure to start, it was determined that the pump suction valve was last stroked on November 14, 1996, and that the 'D' RHR pump was inoperable from that date. The inoperability of the 'D' RHR pump was unknown to operations personnel and no LCO was entered. Therefore, this is a condition prohibited by the Technical Specifications and is reportable in accordance with 10CFR50.73(a)(2)(f)(B). The pump trip signal cleared when the pump suction valve was stroked. The pump suction valve was stroked several times and the limit switch operated properly. The event did not repeat. The 'D' RHR pump was declared operable and the LCO exited. Subsequently the LCO was re-entered and the limit switch on the suction valve was adjusted to the proper setup to ensure consistent operation. The pump suction valve was stroked satisfactorily, the 'D' RHR pump was declared operable and the LCO exited. The pump trip relays on the other RHR pumps were verified not to be in the energized state when the pump suction valves are full open. The corrective actions include revising surveillance procedures to check pump trip relays de-energized after the pump suction valves are stroked, revising operation procedure to check pump trip relays de-energized for Low Pressure Coolant Injection (LPCI) standby alignment, verifying that both units' pump suction valve limit switches are properly setup, evaluating modification to the existing logic to provide indication in the control room if the pump suction valves are not full open, reviewing other MOVs used in safety related applications to determine if critical safety functions come off Rotors 3 or 4 of the limit switches, determining if procedure changes or other measures are appropriate to ensure proper operation until the setup of Rotors 3 and 4 on the limit switches for the other MOVs are checked, and checking for proper setup of Rotors 3 and 4 for the limit switches for other MOVs that use those rotors for critical safety functions. There were no safety consequences or compromises to public health and safety as a result of the 'D' RHR pump being inoperable for more than seven (7) days since the other Emergency Core Cooling Systems (ECCS) were operable during that time and any other equipment outages that occurred during this time period had no significant affect on the overall risk assessment of the unit.

~~9701020077 4177~~

**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)

EVENT DESCRIPTION

On November 21, 1996, at 2228, with Unit 2 in Condition 1 (Power Operation) at 100% power, the 'D' Residual Heat Removal (RHR; EISS Code: BO) pump failed to start when aligned for Suppression Pool Cooling operation. Technical Specification 3.5.1 Action b.1 was entered. The cause of the failure to start was determined to be that Rotor 3 for the limit switch on the pump suction valve was not aligned correctly to ensure consistent operation and thus maintained the pump trip relay in the energized state when the pump suction valve was full open. The design of the limit switches on the pump suction valves is such that there are four (4) rotors. Contacts on Rotors 1 and 2 control the functioning (open/close) of the valve and provide control room indication for valve position. Some of the contacts on Rotors 3 and 4 are used to provide addition indication and actuation of additional logic such as pump trips. For the RHR pump suction valves, the contacts on Rotor 3 provide input to the RHR pump trip logic to actuate the trip logic if the valve is not full open. During the investigation of the failure to start, it was determined that the pump suction valve was last stroked on November 14, 1996, and that the 'D' RHR pump was inoperable from that date. The inoperability of the 'D' RHR pump was unknown to operations personnel and no LCO was entered. Therefore, this is a condition prohibited by the Technical Specifications and is reportable in accordance with 10CFR50.73(a)(2)(i)(B). The pump trip signal cleared when the pump suction valve was stroked. The pump suction valve was stroked several times and the limit switch operated properly. The event did not repeat. The 'D' RHR pump was declared operable and the LCO exited. Subsequently the LCO was re-entered and the limit switch on the suction valve was adjusted to the proper setup to ensure consistent operation. The pump suction valve was stroked satisfactorily, the 'D' RHR pump was declared operable and the LCO exited. The pump trip relays on the other RHR pumps were verified not to be in the energized state when the pump suction valves are full open.

CAUSE OF EVENT

The cause of the failure to start was determined to be that Rotor 3 for the limit switch on the pump suction valve was not aligned correctly to ensure consistent operation and thus maintained the pump trip relay in the energized state when the pump suction valve was full open.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a)(2)(i)(B), in that Susquehanna SES Unit 2 was in a condition prohibited by the Technical Specifications because the 'D' RHR pump was inoperable for a period of greater than 7 days and this condition was unknown to operations personnel. There were no safety consequences or compromises to public health and safety as a result of the 'D' RHR pump

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

being inoperable for more than seven (7) days since the other Emergency Core Cooling Systems (ECCS) were operable during that time and any other equipment outages that occurred during this time period did not significantly affect the overall risk assessment of the unit.

In accordance with the guidelines provided in NUREG-1022, Supplement 1, Item 14.1 and 10CFR50.4(d), the required submission date for this report was determined to be December 23, 1996.

CORRECTIVE ACTIONS

The following corrective actions have been identified and completed:

- Adjusted the limit switch for the 'D' RHR pump suction valve to the proper setup,
- Revised surveillance procedures to check pump trip relays de-energized after the pump suction valves are stroked.

The following corrective actions have been identified and are to be completed:

- Revise operation procedure to check pump trip relays de-energized for Low Pressure Coolant Injection (LPCI) standby alignment,
- Verify that the other seven (7) RHR pump suction valve limit switches (total for both units) are properly setup,
- Evaluate modification to the existing logic to provide indication in the control room if the pump suction valves are not full open,
- Review other MOVs used in safety related applications to determine if critical safety functions come off Rotors 3 and 4 of the limit switches,
- Determine if procedure changes or other measures are appropriate to ensure proper operation until Rotors 3 and 4 for the limit switches for the other MOVs are checked, and
- Check for proper limit switch setup for Rotors 3 and 4 for other MOVs that use these rotors for critical safety functions.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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ADDITIONAL INFORMATION

Past Similar Events: None

Failed Component: None