

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9102130032 DOC. DATE: 91/02/07 NOTARIZED: NO DOCKET #
 FACIL: 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv 05000388
 AUTH. NAME AUTHOR AFFILIATION
 LLOYD, H. Pennsylvania Power & Light Co.
 STANLEY, H.G. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-001-00: on 910108, RHR sys automatically isolated while technicians replaced pressure switches due to setpoint drift. Caused by improper work instructions & failure to use available drawings. Sys restored. W/910207 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. 05000388

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February 7, 1991

U.S. Nuclear Regulatory Commission
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SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 91-001-00
FILE R41-2
PLAS - 470

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

Attached is Licensee Event Report 91-001-00. This report is being made pursuant to 10CFR50.73(a)(2)(iv), in that an unplanned ESF actuation occurred when the Residual Heat Removal System, operating in the Shutdown Cooling Mode, automatically isolated. The isolation occurred while instruments were being replaced. The work crew immediately restored from the maintenance activity and shutdown cooling was then restored.

H.G. Stanley
Superintendent of Plant - Susquehanna

HL/mjm

cc: Mr. T. T. Martin
Regional Administrator, Region I
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Sr. Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 35
Berwick, PA 18603-0035

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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	PAGE (3) 1 OF 0 4
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TITLE (4)
Inadvertent Isolation of Shutdown Cooling Mode of Residual Heat Removal System

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)																																																						
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9)</td> <td style="width:15%;">4</td> <td colspan="10">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td>POWER LEVEL (10)</td> <td>0 0 0</td> <td>20.402(b)</td> <td>20.406(c)</td> <td><input checked="" type="checkbox"/></td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td></td> <td></td> <td>20.406(a)(1)(i)</td> <td>50.36(c)(1)</td> <td></td> <td>50.73(a)(2)(v)</td> <td>73.71(c)</td> </tr> <tr> <td></td> <td></td> <td>20.406(a)(1)(ii)</td> <td>50.36(c)(2)</td> <td></td> <td>50.73(a)(2)(vi)</td> <td>OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td></td> <td></td> <td>20.406(a)(1)(iii)</td> <td>50.73(a)(2)(i)</td> <td></td> <td>50.73(a)(2)(vii)(A)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>20.406(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td></td> <td>50.73(a)(2)(viii)(B)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>20.406(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td></td> <td>50.73(a)(2)(ix)</td> <td></td> </tr> </table>												OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)										POWER LEVEL (10)	0 0 0	20.402(b)	20.406(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)			20.406(a)(1)(i)	50.36(c)(1)		50.73(a)(2)(v)	73.71(c)			20.406(a)(1)(ii)	50.36(c)(2)		50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)			20.406(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(vii)(A)				20.406(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)				20.406(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(ix)	
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LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
H. Lloyd, Jr. - Power Production Engineer	7 1 7 5 4 2 - 3 9 1 7

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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 January 8, 1991 with Unit 1 in Cold Shutdown, the Residual Heat Removal System, operating in the Shutdown Cooling Mode, automatically isolated while technicians were performing instrument maintenance. Pressure switches were being replaced due to problems with setpoint drift. The cause of the isolation was improper work instructions which required opening links and when these links were opened, the isolation circuitry actuated. This event was determined to be reportable per 10CFR50.73(a)(2)(iv) as an unplanned ESF actuation. There were no safety consequences or compromises to the health or safety of the public or plant personnel. Personnel performing the work immediately restored from the work activity and shutdown cooling was restored to operation. Contributing to the improper work instruction was the failure to use all available drawings. PP&L is developing a work planning guide for Instrument & Controls personnel and appropriate training will be performed on this guide.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 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) Unit 2 Susquehanna Steam Electric Station	DOCKET NUMBER (2) 0 5 0 0 0 3 8 8 9 1	LER NUMBER (6)			PAGE (3)	
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		9 1	0 0 1	0 0	0 2	OF 0 4

TEXT (If more space is required, use additional NRC Form 368A's) (17)

DESCRIPTION OF EVENT

On January 8, 1991 with Unit 1 in Condition 4 (Cold Shutdown), an isolation of the Shutdown Cooling Mode of Residual Heat Removal (RHR-EIIS Code: B0) occurred while Instrument & Controls technicians (utility, non-licensed) were replacing the shutdown cooling low reactor pressure permissive switches. Personnel performing the activity were instructed to immediately restore from the work activity and Control Room personnel (utility, licensed) then restored shutdown cooling to operation. The duration of the loss of shutdown cooling was one hour and five minutes and reactor coolant temperature increased from 108°F to 135°F. Technicians were replacing the subject pressure switches due to previous problems with setpoint drift. The replacement switches had undergone additional bench testing that had not been performed on the previously installed pressure switches. These previously installed switches had been replaced by a modification in 1990 which involved utilization of instruments with a narrower range in an attempt to improve the performance of the reset function.

During the time that shutdown cooling was out of service, core circulation was maintained by the reactor recirculation system and alternate methods of decay heat removal were available.

CAUSE OF EVENT

Investigation revealed the cause of the event to be improper work instructions for the pressure switch replacement. The work instructions involved jumper installation and link openings within a wiring panel. The jumper installations should have prevented the isolation by maintaining the circuit energized when the links were opened. However, not all available drawings were utilized during the job planning process. When the links were opened, the isolation logic was actuated. This was due to the circuit, which was thought to be properly jumpered as part of the work activity, being interrupted by the link opening. The drawings which should have been used were connection list and connection diagrams. Another contributing causal factor involved the physical wiring arrangement in the panel. A modification performed in 1989 installed a time delay in the isolation logic due to previous problems with system isolations during certain operational evolutions. The wiring changes for this modification were schematically correct but were not typical of field wiring/internal wiring interface. The isolation logic actuation caused the shutdown cooling inboard suction isolation valve to close which in turn caused the Residual Heat Removal pump to trip. This sequence is as per design and all equipment functioned properly.

LICENSEE EVENT REPORT (LER)
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TEXT (if more space is required, use additional NRC Form 366A's) (17)

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that an unplanned ESF actuation occurred when the Residual Heat Removal System, operating in the shutdown cooling mode, automatically isolated. There were no safety consequences or compromises to health or safety of the public or plant personnel. Core circulation was maintained throughout the event by the Reactor Recirculation pumps and alternate means of decay heat removal were available but were not required to be used. This event would not have been more significant at any other operating condition since system design precludes system use at power by virtue of pressure interlocks and system isolation valves are closed.

In accordance with guidance provided in NUREG 1022, Supplement 1, item 14.1, the required submission date for this report was determined to be February 7, 1991. The event was determined to be reportable on January 8, 1991 and the required ENS notification was properly completed at that time.

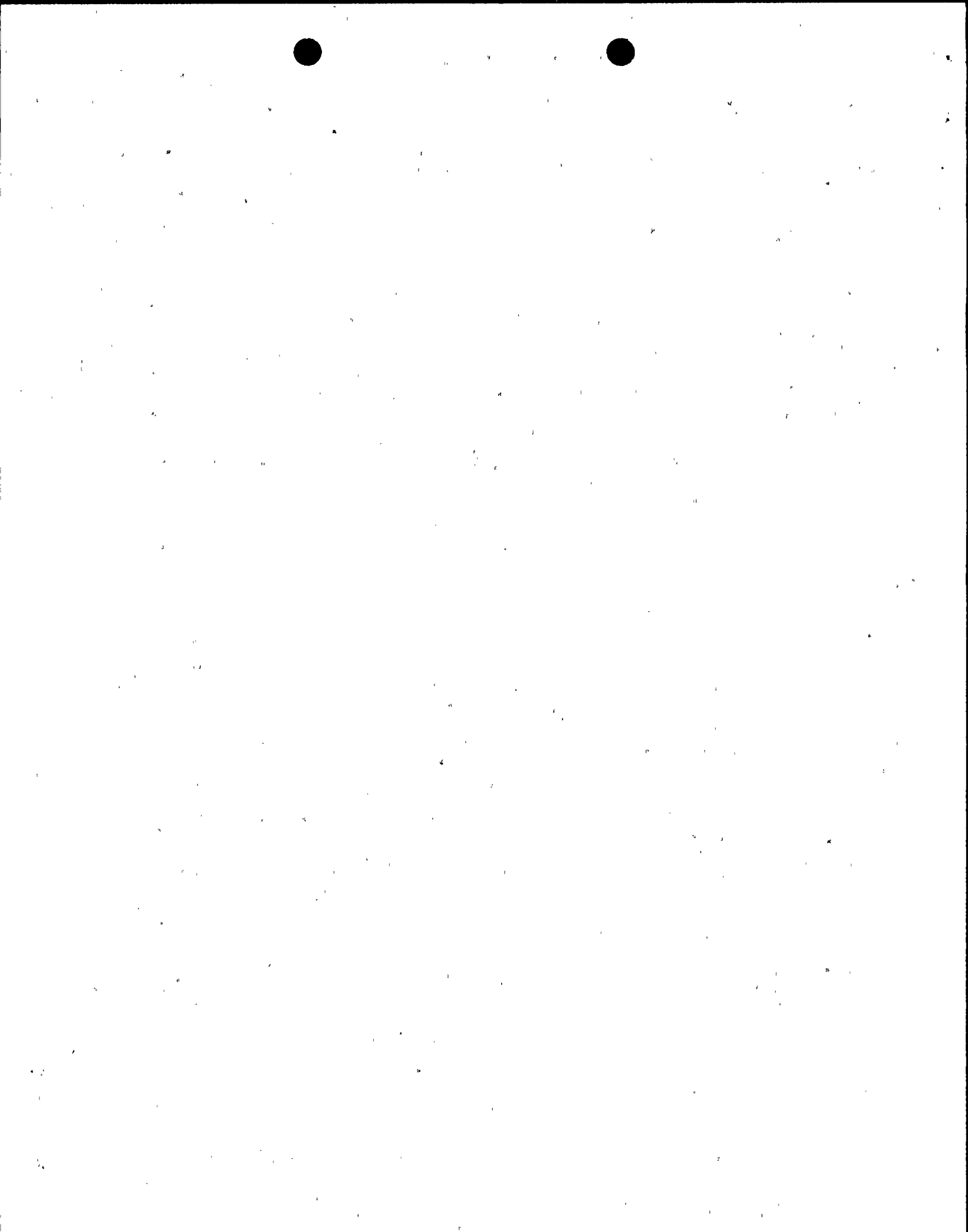
CORRECTIVE ACTION

Immediately upon recognition of the isolation, control room personnel notified the work crew to restore from the work activity. Steps were then initiated to restore the system to operation in shutdown cooling in accordance with applicable operating procedures. The system was restored to operation one hour and five minutes after the isolation occurred.

We are developing an Instrumentation & Controls planners guide. This guide will provide direction for planning of I&C maintenance functions including utilization of all applicable drawings as well as all other aspects of the planning process. Training on this document will be performed for appropriate personnel. In addition, the physical wiring arrangement in the subject panel will be modified to improve field wiring/internal wiring interface and to improve logic circuit testability. The estimated completion of a planners guide preparation and applicable training is September 1, 1991.

ADDITIONAL INFORMATION

Failed Component Identification: Not Applicable.



LICENSEE EVENT REPORT (LER)
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Previous Similar Events:

Previously reported events involving automatic isolation of shutdown cooling were not similar in that none were the result of maintenance activities thus they are not listed herein.