

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8906280073      DOC. DATE: 89/06/21      NOTARIZED: NO      DOCKET #  
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv      05000387  
 AUTH. NAME      AUTHOR AFFILIATION  
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 BYRAM, R.G.      Pennsylvania Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 89-015-00: on 890521, loss of RHR sys shutdown cooling  
 after closure of suction inboard isolation valve occurred.  
1 W/8 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1      SIZE: 4  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 1 cy Transcripts. 05000387

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	NRR/DEST/ICSB 7	1 1	NRR/DEST/MEB 9H	1 1
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	NRR/DOEA/EAB 11	1 1	NRR/DREP/RPB 10	2 2
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NOTES:		2 2		

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June 21, 1989


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SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 89-015-00  
FILE R41-2  
PLAS -374

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

Attached is Licensee Event Report 89-015-00. This event was determined reportable per 10CFR50.73(a)(2)(iv) in that it resulted in the inadvertent closure of the Residual Heat Removal System shutdown cooling suction inboard isolation valve, HV-151-F009, which constituted an unplanned actuation of an Engineered Safety Feature.

  
R. G. Byham  
Superintendent of Plant - Susquehanna

PPR/mjm

cc: Mr. W.T. Russell  
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EX-100

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit 1	DOCKET NUMBER (2) 0   5   0   0   0   3   18   7	PAGE (3) 1 OF 0   3
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TITLE (4)  
Improperly Placed Jumper During Surveillance Causes RHR Shutdown Cooling Valve Closure

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)														
0	5	21	8	9	0	0	1	5	0	0	0	6	2	1	8	9		0	5	0	0	0		

OPERATING MODE (9) 5	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)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)					
	20.406(a)(1)(ii)	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(viii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)					
	20.406(a)(1)(iii)	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)						
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)						
20.406(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)	
NAME P.P. Rusanowsky - Power Production Engineer, Compliance	TELEPHONE NUMBER AREA CODE: 7   1   7 5   4   2   -   3   7   5   9

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)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO						

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

At 1357 on 5-21-89, with Unit 1 in its fourth refueling outage, a Primary Containment Isolation System logic fuse was inadvertently blown when an electrician accidentally caused a short circuit to ground while attempting to install a temporary jumper in a difficult location in support of a surveillance testing procedure. The blown fuse caused the Residual Heat Removal System Shutdown Cooling (SDC) Suction Inboard Isolation Valve, HV-151-F009, to close which resulted in a temporary loss of SDC. This constituted an unplanned actuation of an Engineered Safety Feature and was hence reportable under 10CFR50.73(a) (2) (iv). The testing was suspended, the blown fuse was replaced, HV-151-F009 was reopened and SDC was restored at 1457 on 5-21-89. Reactor coolant temperature increase during the event was insignificant. The surveillance procedure was revised to facilitate installation of the temporary jumper and subsequently completed without further incidents. A project to minimize inadvertent equipment actuations during testing was initiated in 1988 and is being actively pursued. Since the HV-151-F009 failed in its safe (closed) position regarding its primary containment isolation function and since an alternate method of decay heat removal was available, there was no compromise to the health or safety of the public.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Unit 1 Susquehanna Steam Electric Station	DOCKET NUMBER (2)  0 5 0 0 0 3 8 7	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 9	- 0 1 5	- 0 0	0 2	OF	0 3

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

DESCRIPTION OF EVENT

On 5-21-89, with Unit 1 in its fourth refueling outage and its Residual Heat Removal (RHR) System (EIIS Code: BO) in service in the Shutdown Cooling (SDC) mode, an electrician was attempting to install a temporary jumper in support of SE-159-200 (18 Month Logic System Functional Test of the Primary and Secondary Containment Isolation System). At 1357, the electrician accidentally shorted across two terminals of a Primary Containment Isolation System (PCIS; EIIS Code: JM) logic relay with the temporary jumper. This caused a PCIS logic fuse to blow which resulted in the automatic closure of the RHR SDC suction inboard isolation valve HV-151-F009 and hence, a temporary loss of SDC. The performance of SE-159-200 was suspended, the blown fuse was replaced, HV-151-F009 was reopened and SDC was restored at 1457 on 5-21-89.

CAUSE OF EVENT

The cause of this event was attributed to the SE-159-200 procedure in that it specified the installation of a temporary jumper in a location that was not readily accessible and on terminal points not configured to facilitate jumper installation. This specific problem was identified in 1985 during the performance of SE-159-200 but was not resolved at the time due to the unavailability of qualified hardware for use on safety related logic terminal points. Although suitable hardware has since been approved, its installation in the Unit 1 PCIS was not scheduled to be performed prior to conducting SE-159-200 during this outage.

REPORTABILITY/ANALYSIS

This event was determined to be reportable under 10CFR50.72(b) (2) (ii) and 10CFR50.73(a) (2) (iv) in that the unanticipated, automatic closure of a primary containment isolation valve constituted an unplanned actuation of an Engineered Safety Feature. An Emergency Notification System (ENS) call was made at 1530 on 5-21-89. Based on the following facts .....

- 0 the HV-151-F009 valve failed in its safe (closed) position regarding its primary containment isolation function.
- 0 the HV-151-F009 valve is only used in the SDC mode of RHR and thus its closure did not affect any other RHR system modes of operation.
- 0 SDC was restored within the one hour limit specified in the plant's Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		-	0   1   5	-	0   0	0   3	OF 0   3

TEXT (If more space is required, use additional NRC Form 306A's) (17)

- 0 there was no appreciable increase in reactor coolant temperature during the event (100°F recorded at 1400 and a maximum 102°F at 1500 with a Technical Specification limit of 140°F in Operational Condition 5).
  - 0 the Control Rod Drive (EIIS Code: CD) and Reactor Water Cleanup (EIIS Code: CE) Systems were available as an alternate means of decay heat removal.
- ...., there was no compromise to the health or safety of the public.

CORRECTIVE ACTIONS

A change to the SE-159-200 procedure was issued on 5-23-89 which specified a more readily accessible location for the temporary jumper discussed previously in this report and installed permanent banana jacks at the new terminal points to facilitate jumper installation. The surveillance was subsequently completed without further incidents. Also, during this performance of SE-159-200, most of its other permanent banana jacks were installed.

A project to install permanent banana jacks on terminal points used for periodic testing and to convert to the use of switched temporary jumpers was initiated in 1988 to minimize inadvertent equipment actuations during the installation and removal of temporary jumpers. The use of switched temporary jumpers has been implemented and completion of the installation of banana jacks is being actively pursued on a prioritized basis. Also, as part of the same effort, prerequisites were added to applicable test procedures to ensure that test support personnel are briefed on the need to exercise extreme caution when installing and removing temporary jumpers and on the possible adverse effects associated with this type of activity.

ADDITIONAL INFORMATION

A review of past LERs for the station revealed the following similar events.

Unit 1: 86-017  
86-020  
88-007

Unit 2: (Docket No. 50-388; License No. NPF-22)  
84-020  
85-018