

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8905310363 DOC. DATE: 89/05/25 NOTARIZED: NO DOCKET #  
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania 05000387  
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SUBJECT: LER 89-011-00: on 890427, reactor water cleanup sys  
 containment isolation logic actuated on false flow signal.  
 W/8 ltr.

DISTRIBUTION CODE: IE22D 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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May 25, 1989

U.S. Nuclear Regulatory Commission  
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SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 89-011-00  
FILE R41-2  
PLAS -365

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

Attached is Licensee Event Report 89-011-00. This event was determined to be reportable per 10CFR50.73(a) (2) (iv) in that an unplanned actuation of an Engineered Safety Feature occurred when the Reactor Water Cleanup System's containment isolation logic actuated on a false high flow signal.

R.G. Byram  
Superintendent of Plant - Susquehanna

MLC/mjm

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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 8 7	PAGE (3) 1 OF 0 3
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TITLE (4) Reactor Water Cleanup System's Containment Isolation Logic Actuated on False High Flow Signal due to a Procedural Inadequacy

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 4	2 7	8 9	8 9	0 1 1	0 0	0 5	2 5	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 1 0 1 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	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)(vii)(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 Michael L. Crist - Compliance Evaluator	TELEPHONE NUMBER AREA CODE: 7 1 7 5 4 2 - 3 2 8 9
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On April 27, 1989 at 0930 hours with Unit 1 defueled, Condition 5, the Reactor Water Cleanup (RWCU) System's containment isolation logic actuated on a false high flow signal. The signal was generated during preparations for a RWCU local leak rate test (LLRT). Following isolation of the "B" RWCU differential pressure switch, a high flow containment isolation signal was received. The RWCU System was shutdown prior to the event, with the inboard and outboard containment isolation valves closed, so no valve movement resulted. The flow instrumentation valves were re-opened, clearing the isolation signal.

A packing leak on one of the flow instrumentation valves caused the differential pressure switch to sense a pressure decrease on one side of the switch, simulating a high flow condition. The root cause of the event was failure of the LLRT procedure to require equalization of the high flow instrumentation prior to isolating the instruments.

The packing leak was repaired and the Unit 1 and Unit 2 RWCU LLRT procedures have been revised. In addition, all remaining Unit 1 and Unit 2 LLRT procedures were reviewed for similar instances where differential pressure switches are isolated in preparation for LLRT, none were found.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Unit 1 Susquehanna Steam Electric Station	0 5 0 0 0 3 8 7	8 9	- 0 1 1	- 0 0	0 2	OF 0 3

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

DESCRIPTION OF EVENT

On April 27, 1989 at 0930 hours during the Unit 1 Fourth Refueling and Inspection Outage, with the Reactor defueled/Condition 5, an Engineered Safety Feature (ESF) actuation occurred when Reactor Water Cleanup (RWCU, EIS Code: CE) System's containment isolation logic actuated on a high flow signal. Prior to the event, RWCU was shutdown, with both containment isolation valves, HV-144-F001 (inboard) and HV-144-F004 (outboard), closed for local leak rate testing (LLRT). As directed by SE-159-033, Rev. 3, LLRT of RWCU Supply Penetration Number X-14, Operations personnel (nonlicensed/utility) closed flow instrumentation valves 144001C and 144001D to isolate RWCU differential pressure switch, PDIS-G33-1N044B. Following closure of these valves, a false high flow isolation signal was generated. Since the inboard and outboard containment isolation valves were closed no valve movement occurred. Operations personnel re-opened the flow instrumentation valves and the isolation signal cleared.

CAUSE OF EVENT

The root cause of the event was failure of the LLRT procedure to require equalization of the RWCU high flow instrumentation prior to isolation of the instruments. A second causal factor was a packing leak on one of the flow instrumentation valves. When flow instrumentation valves, 144001C and 144001D, were closed a packing leak developed on valve 144001D. This caused pressure to drop on one side of the instrument. Note, the high flow instrumentation measures differential pressure between the two legs of the instrument. As the pressure decreased the differential pressure switch sensed a high differential pressure equivalent to a high flow condition. Subsequently, a system high flow isolation signal was generated.

REPORTABILITY/ANALYSIS

The event was determined to be reportable per 10CFR50.73(a) (2) (iv) in that Unit 1 experienced an unanticipated Engineered Safety Feature actuation when the RWCU system containment isolation logic actuated on a false system high flow signal.

There were no safety consequences resulting from this event. This assessment is based on the fact that the RWCU isolation logic performed its intended function of containment isolation upon receipt of the false high flow signal. The intended function would have been performed regardless of power level.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR 8   9	SEQUENTIAL NUMBER -   0   1   1	REVISION NUMBER -   0   0	0   3	OF	0   3

TEXT (If more space is required, use additional NRC Form 364A's) (17)

CORRECTIVE ACTIONS

Immediate corrective actions included re-opening the flow instrumentation valves to clear the isolation signal. The packing leak on flow instrumentation valve 144001D was repaired. Unit 1 and Unit 2 RWCU LLRT procedures have been revised to require high flow instrumentation be equalized prior to isolating. In addition, a review was conducted by Plant Staff Engineers (nonlicensed/utility and contractors) on the remaining Unit 1 and Unit 2 LLRT procedures for identification of similar instances where differential pressure switches are isolated in preparation for LLRT, none were found.

ADDITIONAL INFORMATION

Failed Components: None.

Previous Similar Events: None.

There have been past ESF actuations involving RWCU isolations initiated from system high flow signals. It was determined from a review of these events, however, that causal factors for previous events were not similar.

