

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

P. O. BOX A

SANATOGA, PENNSYLVANIA 19464

(215) 327-1200 EXT. 2000

M. J. MCCORMICK, JR., P.E.
PLANT MANAGER
LIMERICK GENERATING STATION

July 6, 1990
Docket Nos. 50-352
50-353
License Nos. NPF-39
NPF-85

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

SUBJECT: Licensee Event Report
Limerick Generating Station - Units 1 and 2

This LER reports a condition that would have prevented the Standby Gas Treatment System from performing its safety function due to mispositioned handswitches because of personnel error. This also resulted in a condition prohibited by Technical Specifications for Unit 2.

Reference: Docket Nos. 50-352
50-353
Report Number: 2-90-010
Revision Number: 00
Event Date: June 6, 1990
Report Date: July 6, 1990
Facility: Limerick Generating Station
P.O. Box A, Sanatoga, PA 19464

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(v)(C) and 10 CFR 50.73(a)(2)(i)(B).

Very truly yours,

L. A. Hughes for M.J. McCormick

VAW/JLP:nlk

cc: T. T. Martin, Administrator, Region I, USNRC
T. J. Kenny, USNRC Senior Resident Inspector, LGS

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Limerick Generating Station, Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 3 5 3					PAGE (3) 1 OF 6	
TITLE (4) Inoperability of Standby Gas Treatment System due to Handswitch mispositioning due to personnel error																
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)			
									Limerick, Unit 1				0 5 0 0 0 3 5 2			
0 6	0 6	9 0	9 0	0 1 0	0 0	0 7	0 6	9 0					0 5 0 0 0 1 1			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)														
1		20.402(b)				20.405(e)				50.73(a)(2)(iv)				73.71(b)		
POWER LEVEL (10)		20.405(a)(1)(i)				50.36(e)(1)				X 50.73(a)(2)(v)				73.71(c)		
0 6 1 1		20.405(a)(1)(ii)				50.36(e)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
		20.405(a)(1)(iii)				X 50.73(a)(2)(ii)				50.73(a)(2)(viii)(A)						
		20.405(a)(1)(iv)				50.73(a)(2)(iii)				50.73(a)(2)(viii)(B)						
		20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)						
LICENSEE CONTACT FOR THIS LER (12)																
NAME G. J. Madsen, Regulatory Engineer, Limerick Generating Station										TELEPHONE NUMBER						
										AREA CODE						
										2 1 5 3 2 7 - 1 1 2 0 1 0						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC						
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)												X NO				

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

On June 6, 1990, during restoration of the Standby Gas Treatment System (SGTS) following de-inerting of the Unit 1 Drywell, the handswitches for the SGTS filter isolation valves were placed in the "AUTO" position, rather than the correct "OPEN" position. When the SGTS filter isolation valve handswitches are in "AUTO", time delays associated with the filter handswitches prevent the filter isolation valves from opening when the SGTS fans automatically start. SGTS would then be inoperable because there is no flowpath to the SGTS from the Reactor Enclosure. Therefore, this resulted in a condition that would have prevented the SGTS from performing its intended safety function and a condition prohibited by Unit 2 Technical Specifications. Upon discovery on June 7, 1990, during a routine control room switch position check, the filter isolation valve handswitches were placed in the correct position. The mispositioning occurred because of a personnel error on the part of the licensed operator determining the restoration positions of the handswitches. The consequences were minimal in that the SGTS was not called upon to operate during this time. The operator was counseled on his accountability for the content of procedures as delineated in Administrative Procedure A-7, "Shift Operations." As enhancements, the isolation valve handswitches have been marked to indicate the normal position and these positions were included in the Drywell de-inerting procedure.

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

Unit Conditions Prior to the Event:

	Unit 1	Unit 2
Operating Condition:	4 (cold shutdown)	1 (power operation)
Power Level:	0%	61%

Completion of Unit 1 Drywell de-inerting following forced shutdown.

Description of the Event:

On June 6, 1990, at 1345 hours, the de-inerting of the Unit 1 Drywell was completed. At 1413 hours during the subsequent restoration of the common Standby Gas Treatment System (SGTS)(EIIS:BH) by a utility employed licensed Main Control Room operator, the handswitches (EIIS:HS), HS-076-013A and B, for the 'A' and 'B' SGTS filter train isolation valves (EIIS:ISV) were placed in "AUTO" (see Figure 1). The normal operating position of these handswitches is "OPEN". On June 7, 1990, at 0315 hours, during a daily handswitch position verification by a licensed operator, the mispositioning was identified and corrected.

The system engineers were then contacted by the Main Control Room operators to determine whether the SGTS was operable with the handswitches mispositioned. With the filter handswitch in the "AUTO" position, the filter valves are closed. The valves will open after 5 seconds with a SGTS initiation signal and a low SGTS flow signal. Both of the SGTS fan handswitches are normally in the "AUTO" position which results in automatic fan starts immediately following an initiation signal. Therefore, the valves do not receive the low flow signal because the SGTS fans have started and have cleared the low flow signal. Consequently, the filter isolation valves would not open. Because the filter isolation valves would not open to create a flow path for the SGTS, there would be no flow through SGTS from the Reactor Enclosure. After an evaluation by the system engineers, we determined on June 8, 1990, that the SGTS would not have operated upon receipt of an actuation signal in the configuration described above.

Normally following a SGTS initiation, one of the filter isolation valve handswitches is taken from the "OPEN" to the "AUTO" position and one of the SGTS fan handswitches is placed in "STANDBY". In this configuration, the standby fan and filter train would auto start after 5 seconds following a low flow condition in the other SGTS train.

A four hour notification was made on June 8, 1990, at 1641 hours, in accordance with 10CFR50.72(b)(2)(iii)(C), reporting a condition that could have prevented fulfillment of the safety function of a system that is needed to control the release of radioactive material. This report is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(v)(C).

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U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

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

Additionally, this report is being submitted in accordance with 10CFR50.73(a)(2)(i)(B), operation prohibited by Technical Specifications (TS) for Unit 2. This reporting requirement applies to Unit 2 because the SGTS is required by TS to be operable during power operations. Both trains of SGTS were inoperable after the handswitches were mispositioned and the appropriate TS action of initiating a plant shutdown per TS Section 3.0.3 was not taken within one hour. The TS was not applicable to unit 1 because it was in Cold Shutdown during this time.

Consequences of the Event:

There were no radioactive releases as a result of this event. The consequences of the event were minimal in that the SGTS was not required to operate during this time period. If the Secondary Containment isolated with the SGTS fan handswitches in "AUTO" and the SGTS filter handswitches in "AUTO", the SGTS fans would start but without a flowpath. The failure of the SGTS to operate would cause a loss of the negative secondary containment pressure creating the possibility of an unfiltered radioactive release to the environment. This failure would be readily identifiable to Main Control Room operators, through System Operating Procedure S76.9.A, "Verification of Reactor Enclosure or Refueling Floor Secondary Containment Isolation," which is entered upon receipt of a Secondary Containment isolation signal. There is also a Main Control Room alarm for low secondary containment negative pressure. The operators would then properly align the filter train isolation valves and restart a SGTS fan, re-establishing SGTS flow and negative Secondary Containment pressure.

Cause of the Event:

The cause of this event is personnel error on the part of the licensed operator determining the position of the filter isolation valve handswitches for the return to normal operation following the Unit 1 Drywell de-inerting. During drywell de-inerting operations, one filter train of SGTS is in normal alignment (handswitch in "OPEN") and the other bypassed (handswitch in "CLOSE"). The operator determined that both handswitches should be placed in the "AUTO" position, rather than both in the "OPEN" position, during the restoration. He failed to use the System Operating Procedure S76.1.C, "SGTS and RERS Setup for Automatic Operation," for placing the SGTS into normal alignment. There were several recent manipulations of the SGTS, leading the operator to rely on his own system knowledge rather than the procedure.

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

System Operating Procedure S57.5.A, "De-inerting and Purging Primary Containment," was in use during this operation, but did not address the filter isolation valve handswitches in the "Return SGTS to Standby" section.

Corrective Actions:

On June 7, 1990, during daily handswitch position verification by Main Control Room Operators, the handswitches were discovered to be mispositioned and were immediately placed in the correct position, restoring the SGTS to an operable condition. The system was inoperable for approximately 14 hours.

Actions Taken to Prevent Recurrence:

Per Administrative Procedure A-7, "Shift Operations," plant operations are conducted in accordance with approved operating procedures. Routine procedural actions that are frequently performed may not necessitate the use of a procedure. If there is any doubt as to the procedural action by the individual performing the job, the procedure must be present. Counseling of the operator in this event was performed to emphasize the need to use procedures because reliance on memory cannot be trusted for tasks that are infrequently performed.

Emergency Core Cooling System (ECCS) handswitches on the Main Control Room panels had been marked with appropriately colored dots to indicate the normal operating position. This program has been extended to the SGTS filter isolation valve and fan handswitches. Other Main Control Room TS equipment handswitches with specific normal operating positions were reviewed and are adequately controlled. They are marked with their normal positions, annunciate when in the wrong position, or are keylock switches, with two exceptions. The exceptions are the Reactor Enclosure Recirculation System and the Control Room Emergency Fresh Air System (EIAS:VI). These systems have one train in "AUTO" and the other in "STANDBY." Mispositioning of these handswitches in "AUTO" or "STANDBY" would not prevent operation of these systems. Any handswitch in "OFF" would be annunciated in the Main Control Room.

System Operating Procedure S57.5.A was revised to include a step in the "Return SGTS to Standby" section which places both filter isolation valve handswitches in the "OPEN" position.

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

Previous Similar Occurrences:

LERs 1-89-008, 1-89-046, and 1-89-060 reported conditions that affected operability of both trains of the SGTS. However, these events were caused by physical conditions, such as electrical separation, rather than system misalignment, and therefore, the corrective actions would not have prevented the event described in this LER.

LERs 1-86-002, 1-87-011, and 1-87-60 reported actuations of the SGTS due to valve or handswitch mispositioning; however, these LERs involved handswitches outside the Main Control Room or combined mispositioning with atypical alignment, and therefore, the corrective actions would not have prevented the event described in this LER.

LERs 1-87-031, 2-89-007, and 2-90-001 reported events involving other systems caused by operators who failed to follow procedures; however, the corrective actions for these events involved system specific actions and therefore would not have prevented the event described in this LER.

Tracking Codes: A2 - failure to follow implementing procedure

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TEXT (If more space is required, use additional NRC Form 256A's) (17)

FIGURE 1

SIMPLIFIED STANDBY GAS TREATMENT SYSTEM DIAGRAM

