

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Limerick Generating Station, Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 5 2 1 OF 0 7										PAGE (3) 1 OF 0 7																	
TITLE (4) Lack of Protected Suppression Pool Level and Temperature Indication in the Event of Fire																																					
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		0 5		8 9		8 9		0 2 3		0 0		0 5		0 5		8 9												0 5 0 0 0									
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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)								20.405(c)								50.73(a)(2)(iv)								73.71(b)									
				20.405(a)(1)(i)								50.36(c)(1)								X 50.73(a)(2)(v)								73.71(c)									
				20.405(a)(1)(iii)								50.36(c)(2)								50.73(a)(2)(vii)								OTHER (Specify in Abstract below and in Text, NRC Form 366A)									
				20.405(a)(1)(iii)								50.73(a)(2)(i)								50.73(a)(2)(viii)(A)																	
				20.405(a)(1)(iv)								50.73(a)(2)(ii)								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 C. R. Endriss, Regulatory Engineer										TELEPHONE NUMBER AREA CODE 2 1 5 3 2 7 - 1 2 0 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)																																					
Abstract: LER 89-23																																					
<p>On April 5, 1989 station personnel determined that in the event of a fire, the lack of protected suppression pool level indication to support shutdown methods A, B, C, D, and R, and the lack of protected suppression pool (SP) temperature indication to support shutdown method R for safe shutdown of Limerick Generating Station Unit 1 could have adversely impacted the operator's ability to properly assess SP conditions. Reportability evaluations should have been initiated and the event reported in May 1988 for SP temperature indication at the Remote Shutdown Panel and in July 1988 for SP level indication. The root cause of these conditions is a lack of detailed procedures used in performing the Safe Shutdown Analysis, and misapplication of the detailed regulatory requirements. Modifications are scheduled to ensure the availability of SP level indication to support all Shutdown Methods and SP temperature indication to support Method R in the event of a fire. The performance of ongoing studies, using the proper applications of regulatory guidance, will result in the verification of compliance with fire protection requirements. This event was not evaluated in a timely manner due to a procedural inadequacy which has been corrected.</p>																																					

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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 368A's) (17)

Unit Conditions Prior to the Event:

Operating Mode: 5 (Refueling)

Reactor Power: 0%

Description of the Event:

On April 5, 1989, at 1100 hours station personnel determined that in the event of a fire, the lack of protected suppression pool (SP) level indication (EIIS:LI) to support shutdown methods A, B, C, D, and R, and the lack of protected suppression pool temperature indication (EIIS:IM) to support shutdown method R for safe shutdown of Limerick Generating Station (LGS) Unit 1, could have adversely impacted the operator's ability to properly assess SP conditions. In the event of a fire, shutdown methods A, B, C, and D provide for safe shutdown of the plant from the Main Control Room (MCR) (EIIS:NA) and shutdown method R provides for safe shutdown of the plant from outside the MCR, at the Remote Shutdown Panel (RSP) (EIIS:PL). The suppression pool is needed to achieve and maintain a cold shutdown condition, and to remove residual heat. This condition was recognized as reportable and a four hour notification was made to the NRC at 1201 hours on April 5, 1989, in accordance with the requirements of 10 CFR 50.72(b)(2)(iii)(A) and (B).

The existing SP level indications in the MCR and RSP are not listed in the FPER, and the associated cabling (EIIS:BL) and instrumentation are not protected from fire damage such that SP level indication may not be available in the event of a fire.

The existing SP temperature indicator TI-51-104A, at the RSP is not listed in the Fire Protection Evaluation Report (FPER) and therefore the associated cabling was not protected from fire damage such that the SP temperature indication may not be available in the event of a fire.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

These deficiencies were identified as a result of the ongoing review of Peach Bottom lessons learned from the review of their safe shutdown (SSD) analysis, the assessment of Limerick's safe shutdown analysis and the review of NRC Information Notice 84-09 and Generic Letter 86-10. It was determined in July 1988, that an error had been made when the previous evaluations concluded that protected SP level instrumentation was not required at the Remote Shutdown Panel or in the Main Control Room. A determination was made in May 1988 for the SP temperature indication could be lost at the RSP.

Sufficient information was available in May 1988 for SP temperature and in July 1988 for SP level that reportability evaluations should have been initiated and the event reported at that time. When a reportability evaluation was finally initiated in January 1989, as a result of the PECO self-assessment of the SSD analysis, these conditions were initially determined not to be reportable because of a misunderstanding of the applicable regulatory guidance. When the misunderstanding was resolved, the evaluation was re-performed and the event determined to be reportable on April 5, 1989.

Consequences of the Event:

Adequate SP level and temperature are required to achieve and maintain the reactor in a cold shutdown condition using any of the methods described in the FPER.

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

The presently installed SP level indication may be lost due to fire damage to its cabling. SP temperature indication may be lost due to either fire damage to its cabling or loss of its power source.

The SP temperature indication TI-51-105A is located in the 1A Residual Heat Removal pump (EIIS:BO) suction about 10 feet outside primary containment. It is powered by a non-class 1E power source. This would be lost in the assumed loss of AC power during the fire. Loss of AC power to the RHR pump due to fire conditions makes the SP indication non-representative. Additionally, spurious operation of Emergency Service Water valves may trip the Emergency Diesel Generator (EDG) supplying onsite emergency AC. At that point there would be no flow through the RHR piping and therefore a non-representative indication of SP temperature. However, restoration of the emergency AC is procedurally controlled and would only take a short period of time.

If suppression pool level or temperature indication is not available in the event of a fire, the capability exists to obtain temporary level or temperature readings using portable test equipment. However, using this method to obtain suppression pool level indication was not controlled by an approved plant procedure until April 27, 1989. This method of obtaining suppression pool temperature indication has been controlled by an approved plant procedure since September, 1987.

It is to be noted that if the SP inventory is sufficient at the beginning of the event there is a high degree of assurance that this volume will remain available since systems that take suction on the SP return either directly to the SP or indirectly via the reactor vessel (EIIS:RPV).

Further, normal procedural and administrative controls have existed to minimize fire hazards and appropriate detection and suppression equipment is in place to detect and contain any fire that would occur in an affected fire area since initial fuel load.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

Cause of the Event:

A PECO self-assessment of the LGS SSD analysis has been performed to determine the root cause of similar occurrences concerning deficiencies in SSD capabilities as committed to in the FPER. The results of the assessment indicated two root causes; lack of detailed procedures for use in performing the SSD analysis, and misunderstanding and misapplication of the regulatory requirements. The root cause of the conditions described in this LER come under these same causes.

Exclusion of SP level from the various SSD methods arose from continued reliance on an earlier evaluation indicating that SP level was not required because of minimal level changes during a fire event, even though regulatory guidance indicated that it was required.

Exclusion of SP temperature from Method R arose from a design error causing the omission of the instrumentation in the FPER. Therefore, it received no analysis for assured power supply and protection from fire damage.

The cause of the untimely initiation of an evaluation for reportability for these deficiencies was a procedural inadequacy. Prior to December 1988 there was a lack of clear guidance as to responsibility and interfaces for reportability review initiations and resolution and a lack of sensitivity with regards to the timeliness of identifying reportable conditions.

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

Corrective Actions:

No immediate corrective actions were implemented since this condition was determined to be reportable while the plant was shutdown for refueling.

Permanent modifications will be performed to provide suppression pool level indication to support all safe shutdown methods and to add safety-related suppression pool temperature instrumentation at the RSP to support shutdown method R. These modifications will be completed during the third Refueling Outage on Unit 1, currently scheduled to begin in October, 1990. As interim compensatory measures, suppression pool level and temperature readings will be taken by the operators in the event of a fire and failure of the installed instrumentation using the appropriate portable instrumentation which has been provided and is administratively controlled. Special Event procedures used in the event of a fire have been revised to address the use of this temporary level and temperature instrumentation.

Actions Taken to Prevent Recurrence:

The corrective actions to prevent recurrence were determined based on the root cause findings of the self-assessment of the LGS SSD analysis. These actions, as described in LER 88-031, Rev. 2, dated April 5, 1985, entail the performance of ongoing studies and the development of detailed SSD analysis criteria. The performance of these ongoing studies, using the proper application of regulatory requirements and guidance, will result in the verification of compliance with fire protection requirements. This action, in conjunction with the development of detailed SSD analysis criteria, addresses the root cause and will therefore, help to ensure that regulatory compliance is maintained.

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

An enhanced reportability process has been developed to address the issue of timely identification and reporting of deviations. The implementation of this reportability process is intended to produce a heightened sensitivity and provide specific direction to Nuclear Group personnel with regard to recognizing and processing potentially reportable events or conditions. The enhanced reportability process also provides for escalating potentially reportable deviations to higher levels of management if a final reportability determination is not made within a specific period of time.

The reportability process is controlled at the station by an Administrative procedure and corporately by an interim Nuclear Group Administrative Procedure.

Previous Similar Occurrences:

LGS LERs 85-057, 85-087, 86-055, 87-055, 88-031, 88-039, 88-040, 89-002, and 89-012 reported fire protection concerns.

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

P. O. BOX A

SANATOGA, PENNSYLVANIA 19464

May 05, 1989

Docket No. 50-352

License No. NPF-39

U.S. Nuclear Regulatory Commission
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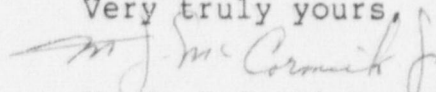
SUBJECT: Licensee Event Report
 Limerick Generating Station - Unit 1

This LER concerns lack of protected suppression pool temperature and level monitoring in the Fire Protection Evaluation Report which could adversely affect the ability to safely shutdown the plant in the event of a fire.

Reference:	Docket No. 50-352
Report Number:	89-023
Revision Number:	00
Event Date:	April 5, 1989
Report Date:	May 5, 1989
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)(A) and (B).

Very truly yours,



M. J. McCormick, Jr.

GHS/VAW:lc

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

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