10 CFR 50.73

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION
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J. DOERING, JR.
PLANT MANAGER
LIMERICK GENERATING STATION

July 9, 1991
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 operation in a condition prohibited by Technical Specifications (TS) in that TS Surveillance Requirements were not performed for certain fire rated assemblies thereby rendering the affected assemblies inoperable and the TS ACTIONs were not taken within the required time. The cause of this event was personnel error resulting in procedural deficiencies.

Reference:	Docket Nos. 50-352 50-353
Report Number:	1-91-014
Revision Number:	01
Event Date:	October 26, 1984
Discovery Date:	May 30, 1991
Report Date:	July 9, 1991
Facility:	Limerick Generating Station P.O. Box A, Sanatoga, PA 19464

This revised LER is being submitted to delete a page of text which was inadvertently included twice in the original submittal due to an administrative error. We regret any inconvenience this error may have caused. The original LER was submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B).

Very truly yours,

J Doering

DCS:rgs

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

IE22 1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Limerick Generating Station, Unit 1	0 5 0 0 0 3 5 2	1 OF 0 5

TITLE (4) Failure to perform Technical Specifications Surveillance Requirements as a result of procedural deficiencies caused by 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)
0 5	3 0	9 1	9 1	- 0 1 4	- 0 1	0 7	0 9	9 1	LSG Unit 2	0 5 0 0 0 3 5 3
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10)	1 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)		50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)		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)	X	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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
G. J. Madsen, Regulatory Engineer, Limerick Generating Station	AREA CODE 2 1 5 3 2 7 - 1 2 1 0

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
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On May 30, 1991, following review of Unit 1 and Unit 2 Fire Rated Assembly Surveillance Test (ST) procedures, we determined that Technical Specifications (TS) Surveillance Requirements (SRs) for both Units 1 and 2 had not been satisfied for TS Section 3.7.7, "Fire Rated Assemblies," thereby rendering the affected assemblies inoperable and the associated TS ACTIONs were not taken in the specified time period. These conditions have existed since issuance of the fuel loading licenses for each unit. Upon discovery of the conditions, fire protection personnel verified operability of fire detection equipment, and posted the appropriate firewatches. Upon visual inspection of the involved accessible fire rated assemblies, we determined that no degradation of the assemblies existed and therefore, they were capable of performing their intended function. Firewatches have been established appropriately to satisfy TS ACTIONs for the inaccessible assemblies. The procedure writer was not thorough in identifying all TS fire rated assemblies in the original revision of the ST procedure. The cause of this event was personnel error resulting in procedural deficiencies. The ST procedures will be revised prior to their next performance to ensure completion of all TS SRs. To address generic concerns, review of fire damper and penetration seal ST procedures was conducted, which revealed one deficiency which will be corrected by revision of the ST procedure.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Limerick Generating Station, Unit 1	0 5 0 0 0 3 5 2	9 1	— 0 1 4	— 0 1	0 2 OF 0 5

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

Unit Conditions Prior to the Event:

At the time of discovery of this event, Unit 1 was in Operational Condition 1 (Power Operation) at 100% power and Unit 2 was in Operational Condition 4 (Cold Shutdown) at 0% power, nearing completion of its first refueling outage. Both units have operated in various Operational Conditions and at various power levels since the issuance of the facility operating licenses for each unit.

There were no systems, equipment or components out of service which contributed to this event.

Description of the Event:

On May 30, 1991, following a review of Surveillance Test (ST) procedures ST-7-022-920-1(2), "Unit 1(2) Refuel Fire Rated Assembly Inspection," for Units 1 and 2, we determined that Technical Specification (TS) Surveillance Requirements (SRs) for both units had not been satisfied for Action 3.7.7, "Fire Rated Assemblies," and the associated TS ACTIONs were not taken in the specified time period. These conditions have existed since issuance of the facility operating licenses for each unit which occurred on October 26, 1984 for Unit 1 and June 22, 1989 for Unit 2. The review of the ST procedures for both units was prompted by a previously identified deficiency described in Limerick Generating Station (LGS) Unit 1 LER 1-91-007. That LER reported a deficiency in the previous performance of ST procedure ST-7-022-920-1 in that an approved Temporary Procedure Change inappropriately removed the TS SR for an inaccessible fire rated assembly. LGS Units 1 and 2 TS SR 4.7.7, requires 18-month periodic visual inspections of exposed surfaces of fire rated assemblies to verify them OPERABLE. The associated TS ACTIONs for inoperable fire rated assemblies requires that "... within 1 hour establish a continuous fire watch on at least one side of the affected assembly(s) and/or sealing device(s) or verify the operability of fire detectors on at least one side of the inoperable assembly(s) and sealing device(s) and establish an hourly fire watch patrol." Review of the ST procedures for both units in response to the condition identified in LER 1-91-007 revealed that the ST procedures failed to identify all the fire rated assemblies which required surveillance in order to satisfy the TS SRs, therefore, 52 various fire rated assemblies including walls, ceiling and floors were not properly inspected.

Upon identification of this condition on May 30, 1991, the affected fire rated assemblies were declared inoperable. Fire protection and operations personnel complied with the TS ACTIONs by verifying operability of the automatic fire detection and suppression equipment, and posting the appropriate firewatches. Fire protection personnel satisfactorily completed the missed TS SRs by June 28, 1991, for all 48 accessible fire rated assemblies, and the fire rated assemblies were then declared operable. The remaining 4 inaccessible (due to personnel dose consideration) fire rated assemblies are being firewatched in accordance with the TS ACTIONs and will be inspected during the next unit outage of sufficient duration.

Since the affected fire rated assemblies were inoperable and the ACTIONs for the inoperable assemblies were not satisfied within the time specified by TS, this incident resulted in a condition prohibited by TS. This report is being submitted in accordance with the requirements of 10CFR 50.73 (a)(2)(i)(B).

Analysis of the Event:

Upon visual inspection of the involved accessible fire rated assemblies we determined that no degradation of the assemblies existed and therefore, we have concluded that the assemblies were capable of performing their design function since issuance of the facility operating licenses.

There are five general categories of fire rated assemblies to consider when evaluating the actual and potential consequences of this event. They are described below in order of decreasing impact on plant safety.

- Assembly found degraded or not yet inspected, the degradation of which could result in a loss of all safe shutdown capability. No assemblies were identified in this category.

- Assembly satisfactorily inspected since identification as a concern, the degradation of which could have resulted in loss of all safe shutdown capability if a fire had occurred on one side. There were 9 assemblies in this category. All have fire detection equipment on both sides; 1 has automatic suppression equipment on both sides; 5 have automatic suppression equipment on one side; and 3 have no automatic suppression equipment on either side.

- Assembly not yet inspected due to personnel dose consideration, the degradation of which would not have resulted in loss of safe shutdown capability (i.e., at least one method would be available should both sides become involved in a fire). There are 3 assemblies in this category and all are currently being firewatched.

- Assembly satisfactorily inspected since being identified as a concern, the degradation of which would not have resulted in a loss of safe shutdown capability (i.e., at least one method available should both sides become involved in a fire). There are 14 assemblies in this category.

- Assembly does not separate safe shutdown fire areas. There are 26 assemblies in this category and all except 1 has been satisfactorily inspected. The affected fire areas is currently being firewatched.

In the event of a postulated fire in the areas not inspected, combined with an undetected deficiency/failure of the uninspected fire rated assembly, there would have been a potential for migration of the fire from one side of the barrier to the other. However, installed fire detection and automatic suppression systems, limited combustible loading, and response of the trained fire brigade would have mitigated the event. For the remaining uninspected

assemblies degradation will not result in loss of safe shutdown in that at least one safe shutdown method will be available should both sides of the assembly become involved in a fire. Additionally, fire detection is available on at least one side of these remaining assemblies. This leads us to conclude that the potential consequences of this event were minimal.

Cause of the Event:

The cause of this event was personnel error resulting in procedural deficiencies. These deficiencies have existed since the original development of the ST procedure. The contractor employed procedure writers attempted to describe each of the fire rated assemblies in a fire area (i.e., sections of walls, floors or ceilings). This level of detail resulted in some assemblies being missed. The procedure writer was not thorough in identifying all TS fire rated assemblies in the original revision of the ST procedures. These deficiencies were not identified in the review and approval process of the original or in subsequent revisions of the ST procedure. An additional causal factor for these deficiencies is that a comprehensive list of fire rated assemblies is not given in the TS or Updated Final Safety Analysis Report (UFSAR). The criteria is given as an assembly which separates safe shutdown fire areas from each other or redundant systems within a safe shutdown fire area.

Corrective Actions:

ST procedures ST-7-022-920-1(2) will be revised prior to their next performance to correct the identified deficiencies. The revisions will include appropriate descriptions and/or reference drawings to ensure that all TS SRs are satisfied. These revisions are the result of the through review of the ST procedures by Site Engineering and Fire Protection personnel. This review compared the plant TS, UFSAR, and Fire Protection Evaluation Report with the ST procedures.

Fire damper ST procedures (ST-7-022-921-0(1)(2)) and penetration seal ST procedures (ST-7-022-922-1(2)) have been reviewed for completeness and accuracy to address the generic concerns of this issue, because these components are also not specifically listed in TS or the UFSAR. One deficiency was identified in the fire damper ST procedure. The missed TS SR did not result in operation in a condition prohibited by TS in that the damper is part of the Main Control Room (MCR) complex which is constantly occupied thereby satisfying the TS ACTIONs. This damper has been satisfactorily inspected and will be included in the ST procedure prior to its next performance. All other fire protection ST procedures deal with components described in finite lists (e.g., detection equipment, hose stations, suppression equipment, etc.). Therefore, this type of procedural deficiency (resulting from interpretation) could not exist in those ST procedures.

Previous Similar Occurrences:

LGS Unit 1 LER 91-004 reported a missed TS SR due to an incomplete ST procedure as a result of a personnel error. The cause was related to misinterpretation of the requirements of TS. LGS Unit 1 LER 89-054 described a failure to perform daily TS SR channel checks for the 'D' channel reactor high level trip, caused by a procedural deficiency in the Daily Surveillance Log procedure. LGS Unit 1 LER 84-001 also described a failure to perform two required instrument system channel checks due to an incomplete Daily Surveillance Log procedure ST-6-107-591-1, used during operational conditions 4 (Cold Shutdown) and 5 (Refueling). The procedural deficiency was discovered and corrected prior to initial criticality for Unit 1. These events were caused by procedure deficiencies that resulted from errors in the development of the original procedures. The corrective actions for these events would not have prevented or detected this event because the development methodology of these ST procedures was not the same as that used for the development of the fire rated assembly ST procedures.

Tracking Codes: A6 - Failure to properly identify equipment