



PECO NUCLEAR

A Unit of PECO Energy

Robert W. Boyce
Plant Manager
Limerick Generating Station

PECO Energy Company
Limerick Generating Station
PO Box 2300
Sanatoga, PA 19464-0920
610 718 2000

10CFR50.73

August 26, 1996
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 concerns a failure to meet Limerick Generating Station Units 1 and 2 License Conditions 2.C.(3), Fire Protection, due to the lack of specific equipment needed for operator actions required to assure safe shutdown of the plant in the event of a fire.

Reference:	Docket Nos. 50-352 50-353
Report Number:	1-96-015
Revision Number:	00
Event Date:	August 11, 1989
Discovery Date:	July 26, 1996
Report Date:	August 26, 1996
Facility:	Limerick Generating Station P.O. Box 2300, Sanatoga, PA 19464-2300

This LER is being submitted in accordance with License Conditions 2.F and 2.E, for Units 1 and 2 respectively, which require a 30 day follow-up report following the failure to meet a License Condition.

Very truly yours,

Robert W. Boyce
DBN:cah

cc: H. J. Miller, Administrator Region I, USNRC
N. S. Perry, USNRC Senior Resident Inspector, LGS

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LICENSEE EVENT REPORT (LER)

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Limerick Generating Station, Unit 1

DOCKET NUMBER (2)

05000 352

PAGE (3)

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TITLE (4) Failure to Maintain Equipment Needed for Operator Actions to Assure Fire Safe Shutdown Capability

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 NAME	DOCKET NUMBER
08	11	89	96	-- 015 --	0	08	26	96	Limerick, Unit 2	05000 353
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)	
POWER LEVEL (10)	0	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)	X	OTHER	
		20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in	
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		Abstract below	
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		and in Text,	
								NRC Form 366A)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

J. L. Kantner, Manager - Experience Assessment, LGS

TELEPHONE NUMBER (Include Area Code)

(610) 718-3400

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)

YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On July 26, 1996, specific equipment needed to implement operator actions for fire safe shutdown were found to not be available (i.e., an electrical jumper cable, several battery powered lighting units and a radio microphone). This equipment is specified in the Limerick Generating Station (LGS) fire safe shutdown analysis. Failure to maintain this equipment is a violation of the LGS Units 1 and 2 License Conditions 2.C.(3). A common cause was the lack of clear ownership and accountability for fire safe shutdown procedures. Other causes are a procedure inadequacy, an inadequate review of a procedure revision, and an inadequate implementation of a modification. The appropriate equipment has been provided, interim procedure revisions implemented, and operator notification has been completed. The fire safe shutdown procedures have been assigned to the appropriate engineering organization. The consequences of the conditions are minimal since an actual fire did not occur, the Fire Brigade's capabilities were unaffected by these conditions, administrative barriers exist to minimize the potential for a significant fire, and emergency procedures would assist in providing a safe shutdown success path.

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

Plant Conditions Prior To The Event:

Upon discovery of the event, Unit 1 was in Operational Condition (OPCON) 3, Hot Shutdown, and Unit 2 was in OPCON 1, Power Operation, at 100% power. Unit 1 and Unit 2 have operated at various power levels and OPCONs since the times when the below described deficiencies first existed.

Description Of The Event:

On July 26, 1996, an engineer specialized in the Limerick Generating Station (LGS) fire safe shutdown analysis identified several deficiencies during a plant walk down. Below is the description of the deficiencies and the impact on the fire safe shutdown capability.

Section 9A.3.2.2 (Item 33) of the LGS Updated Final Safety Analysis Report (UFSAR) states that all the necessary operator actions and support equipment are proceduralized and pre-staged where needed to assure safe shutdown of the plant in the event of a fire. For a fire in the common Remote Shutdown Panel (RSP) Room, the fire safe shutdown analysis requires the operators to install a 150 foot electrical jumper cable to re-energize the controls for the Automatic Depressurization System (ADS) valves. The ADS valves are needed for depressurization control of the reactor during the shutdown following the fire. Special Event (SE) procedures SE-8-2 and SE-8-4 provide the instructions for safe shutdown methods B and D, and require the use of this electrical jumper. With a design basis fire in the Remote Shutdown Panel Room, both Unit 1 and Unit 2 would be affected and two electrical jumpers would be required. Since the start-up of Unit 2 on August 11, 1989, a second jumper cable was not provided.

On January 9, 1995, a revision to procedure SE-8-2 provided a simpler pathway for the installation of those 150 foot electrical jumpers. A similar revision was made to procedure SE-8-4. However, these new pathways are not illuminated by 8-hour battery powered lighting units. The LGS UFSAR Sections 9A.3.1.2 (Item 108) and 9A.3.2.2 (Item 23) state that self-contained lighting units are provided in areas where operator actions are performed outside of the Main Control Room (MCR) including the walking pathways for those actions.

Fire safe shutdown design calculations which support the operator action timelines state that an Emergency Fire Dispatch Center (EFDC)

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is provided to coordinate operator actions outside of the MCR in the event of a fire. This facility is located just outside of the MCR. Up until March 1995, this facility also served as the Operations Support Center (OSC) in the LGS Emergency Plan. On this date, a modification relocated the OSC and required the EFDC to be maintained in the old OSC location. This modification retained the 72 hour radio communication capability in the EFDC, although the appropriate microphone was missing. Actions necessary to maintain the required equipment for the EFDC were not implemented, procedure revisions necessary to use the EFDC were not performed, and subsequent operator training was not provided.

On July 26, 1996, at 1800 hours, an evaluation concluded that these conditions constituted a failure to maintain the provisions of the fire protection program as described in the UFSAR. This is a violation of the Facility Operating License (FOL) Condition 2.C.3 for Unit 1 and Unit 2. FOL Conditions 2.F and 2.E, for Unit 1 and 2 respectively, require a 24 hour notification and a 30 day written follow-up report in the event of a violation of a License Condition. On July 26, 1996, at 1943 hours, a 24 hour notification to the NRC was made. This report is being submitted to satisfy the written reporting requirements.

On July 26, 1996, the following immediate corrective actions were implemented. An engineering review of the fire safe shutdown analysis was performed to determine the equipment and procedures required to be available in the EFDC. A second 150 foot electrical jumper cable was fabricated and located with the first cable. Procedures SE-8, SE-8-2, and SE-8-4 were revised to clearly indicate the use of two (2) jumper cables, and to direct use of the EFDC. The radio microphone was replaced and copies of the necessary SE procedures were securely installed in the EFDC. Signage was posted on and in the EFDC. It was verified that the operators carry hand held radios and have access to high intensity portable lights. Operations personnel were informed of the actions via a Shift Night Order (SNO) entry. The SNO entry was read at the shift turnover meetings.

Consequences Of The Event:

There were no adverse consequences and no radioactive material released to the environment as a result of this event. There was no fire in the plant requiring the shutdown of the plant. These

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conditions would have had no impact on the response of the Fire Brigade's ability to control a fire in the plant. Administrative controls and existing procedures ensure that potential fire hazards are kept to a minimum. Access to the RSP Room is restricted to operations personnel. This room contains a very low combustible loading and is protected by an automatic fire suppression system. It is unlikely that a fire would spread rapidly throughout a fire area and cause significant fire damage requiring the use of the jumper cable or the use of the EFDC.

In the unlikely event that significant fire damage had occurred, the operators were already carrying hand held radios and high intensity portable lights were available in the Fire Brigade Lockers. Since the SE procedures are common to both units, the operators would have recognized the need for a second jumper cable. The jumper cable could have been used on either unit as deemed necessary by the operators while the second jumper was being fabricated. The materials to fabricate a jumper cable were available on site.

The emergency response capability, including the use of the Emergency Operating procedures and the Emergency Plan procedures, would have provided the operators a success path to safely shutdown the plant in the event a fire had occurred.

Cause Of The Event:

A common cause of the described conditions was a lack of clear ownership and accountability for the contents and technical accuracy of the fire safe shutdown procedures. Personnel knowledgeable in the details of the fire safe shutdown analysis were not sufficiently involved in the changes that resulted in the deficiencies. Causes for the specific conditions are described below.

The cause of the missing second cable was an inadequate procedure. Procedures SE-8-2 and SE-8-4 lacked clear direction that two (2) cables may be necessary. Prior to the start-up of Unit 2, an engineering review of the operator actions needed for safe shutdown was performed and procedure revisions were implemented. However, due to the lack of clarity in SE-8-2 and SE-8-4, station personnel did not recognize the need for the second cable.

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The cause of the lack of specific battery powered lighting units for the revised pathway was personnel error. There was an inadequate review of the proposed revision to the SE procedures. The reviewers did not take into account the lighting requirements when establishing the revised jumper cable pathway.

The cause for the failure to proceduralize the operation and maintenance of the EFDC during relocation of the OSC was personnel error. The members of the modification team responsible for the OSC relocation recognized the need to establish the EFDC and requirements were included in modification documents. However, the actions to proceduralize the implementation of the EFDC were not assigned for action and not pursued.

Corrective Actions:

The immediate corrective actions described above re-established the minimum operator capability and knowledge necessary to correct the noted deficiencies.

The Performance and Reliability Branch within Site Engineering has been assigned the overall responsibility for managing the content and technical accuracy of all of the SE procedures including the fire safe shutdown procedures. An individual knowledgeable in the details of the LGS fire safe shutdown analysis will be involved in reviewing proposed changes when appropriate.

A non-conformance report (NCR) was generated to determine the permanent corrective actions for providing battery powered lights for the jumper cable pathway and for recommending if additional permanent equipment for the EFDC is required.

Reviews are being performed to ensure the following:

1. All equipment is identified and provided that is needed to implement the operator actions to assure safe shutdown of the plant. The potential for a dual unit shutdown will be included in the review.
2. Battery powered lighting units are provided in all areas where operator actions are required to be performed outside of the MCR in the event of a fire.

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3. All the equipment needed to implement the other SE procedures is appropriately pre-staged.

A periodic inventory verification of the equipment needed for the operator actions in all of the SE procedures, including the fire safe shutdown operator actions, will be performed to verify the equipment is maintained available.

The appropriate operators will be informed of the changes implemented as a result of the above corrective actions.

Extensive changes in the modification process have been implemented since the development of the OSC relocation modification. These changes are considered sufficient to address the modification process aspects of the deficient modification.

The individuals on the OSC relocation modification team have been informed of the inadequacy of their modification.

Previous Similar Occurrences:

LER 1-96-012 discussed a deficient modification where the engineering organization knowledgeable in the details of the LGS fire safe shutdown analysis was not involved. Since the OSC modification and the changes to the SE-3 procedures occurred prior to the discovery of the issued reported in LER 1-96-012, corrective actions from LER 1-96-012 are not expected to have prevented the conditions discussed in the current LER.

LER 1-95-007 discussed a deficient modification design. Significant changes have been implemented to the modification process following the modification. Since these process changes were implemented after the OSC relocation modification, the corrective actions in LER 1-95-007 are not expected to have prevented the conditions discussed in the current LER.