



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

May 28, 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 reports manual operation of the Control Room Emergency Fresh Air Supply system, an Engineered Safety Feature actuation, resulting from initiation of the Toxic Chemical Detection System. The cause of this event was insufficient guidance in the planning process for exterior plant cleaning/sealing activities.

Reference: Docket Nos. 50-352
50-353
Report Number: 1-96-011
Revision Number: 00
Event Date: April 25, 1996
Report Date: May 28, 1996
Facility: Limerick Generating Station
P.O. Box 2300, Sanatoga, PA 19464-2300

This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv).

Very truly yours,

DMS

cc: T. T. Martin, Administrator Region I, USNRC
N. S. Perry, USNRC Senior Resident Inspector, LGS

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PDR ADOCK 05000352
S PDR

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NRC FORM 366 (5-92)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95																																												
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NAME J. L. Kantner - Manager, Experience Assessment		TELEPHONE NUMBER (Include Area Code) (610) 718-3400																																												
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<p>At 1243 on 04/25/96, a high toxic chemical concentration alarm annunciated in the Main Control Room (MCR). MCR personnel entered procedure SE-2 and manually placed the Control Room Emergency Fresh Air System (CREFAS) in service, an Engineered Safety Feature actuation. Self contained breathing apparatus (SCBA) were donned in accordance with procedure SE-2. The 'C' toxic chemical analyzer channel indicated the presence of ammonia, and the 'B' channel indicated the presence of ammonia, and formaldehyde. Chemistry grab samples showed no detectable levels of toxic gasses. At 1320 hours Shift Supervision allowed MCR personnel to remove their SCBAs. The CREFAS remained in the chlorine isolation mode. The Shift Manager reviewed the available data and declared an Unusual Event (UE) at 1345 hours on 04/25/96, per procedure ERP-101. Following confirmation that all MCR and ventilation sample results were negative, the UE was terminated at 1400 hours. An investigation revealed that sealant being used to seal the Control Enclosure exterior walls contained isopropyl alcohol (which has similar infrared spectra as ammonia and formaldehyde) entered the air supply intake plenum thereby initiating the event. Guidance for assessing exterior plant activities for the potential on plant ventilation systems will be developed.</p>																																														

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)		PAGE (3)
Limerick Generating Station, Unit 1	05000 352	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Unit Conditions Prior to the Event

On April 25, 1996, Unit 1 and Unit 2 were in Operational Conditions 1 (Power Operation) at 100% power levels. Prior to this event, contract personnel were pressure cleaning and sealing (i.e., Klere Seal 940-S) the Control Enclosure exterior walls.

Description of the Event

At 1243 on April 25, 1996, a high toxic chemical concentration alarm annunciated in the Main Control Room (MCR). MCR Operations personnel entered Special Event (SE) procedure SE-2, "Toxic Gas/Chlorine." Operators manually placed the Control Room Emergency Fresh Air System (CREFAS) in service in the chlorine isolation mode, an Engineered Safety Feature (ESF) actuation, and donned self contained breathing apparatus (SCBA) in accordance with procedure SE-2. MCR Operations personnel sensed an unusual odor immediately prior to donning their SCBAs. The 'C' toxic chemical analyzer channel (EIIS:VI) indicated the presence of ammonia, and the 'B' channel indicated the presence of ammonia, and formaldehyde.

Operations personnel contacted Chemistry to obtain grab samples of the MCR air. All grab samples showed no detectable levels of toxic gasses and the unusual odor was no longer present. At 1320 hours, following review of these sample results, Shift Supervision allowed MCR Operations personnel to remove their SCBAs. The CREFAS remained in the chlorine isolation mode.

The Shift Manager (Emergency Director) reviewed the available data and declared an Unusual Event (UE) at 1345 hours on April 25, 1996, per the Emergency Response Procedure ERP-101, "Classification of Emergencies due to a Potential Hazard to Station Operations (nearby or onsite release of potentially harmful quantities of toxic, flammable gas, or chlorine)." Following confirmation that all MCR and ventilation sample results were negative, the Emergency Director terminated the UE at 1400 hours. The NRC was then notified of the de-escalation of the UE.

A preliminary investigation determined that the toxic gas analyzers responded to fumes released by the sealant being used on the exterior walls of the Control Enclosure. The fumes entered the Control Enclosure air supply intake plenum. All exterior cleaning and sealing activities were suspended pending additional evaluation.

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A four hour notification was made per 10CFR50.72(b)(2)(ii) for the manual ESF actuation, and a prompt notification was made per 10CFR50.72(a)(1)(i) for declaration of the UE. Both notifications were made at 1345 hours on April 25, 1996. This report is submitted in accordance with the requirements of 10CFR50.73(a)(2)(iv).

Analysis of the Event

The actual consequences of this event were minimal and there was no release of radioactive material to the environment as a result of this event. A chemical intrusion did occur requiring the CREFAS to be manually operated, however, the concentration of the chemical was well below the levels that could impact operators' ability to operate the plant. Additionally, the actual chemical that entered into the MCR ventilation was isopropyl alcohol (IPA), not the toxic chemicals indicated by the toxic chemical analyzers. The MCR isolation and CREFAS initiation occurred per design. Immediate and follow-up actions to this event were expeditiously implemented per procedure SE-2. All MCR personnel donned SCBA within two minutes which provided additional protection against the possible inhalation of any toxic chemicals. Chemistry grab samples showed no detectable levels of toxic gasses within the MCR ventilation system.

Cause of the Event

The cause of this event was insufficient guidance in the planning process for the exterior plant cleaning/sealing activities. When these activities were planned and the potential impact of plant operations was assessed, the potential for the cleaning/sealant fumes to be detected by the MCR personnel or the toxic chemical analyzers was not considered due to the insufficient guidance.

An analysis of the Klere Seal 940-S waterproofing agent was completed. This analysis identified that the sealant contains IPA. The toxic chemical analyzers use infrared absorption to measure the concentration of the four (4) toxic chemicals (i.e., ammonia, formaldehyde, vinyl ethylene oxide, and vinyl chloride). There is an overlap in the infrared spectra of IPA with ammonia and formaldehyde. The analyzers mistakenly indicated the presence of ammonia and formaldehyde when the sealant fumes entered the MCR ventilation system. Therefore, the operators actuated the MCR isolation and CREFAS initiation. However,

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based on followup investigation, there was no actual presence of any toxic chemical in the MCR ventilation system.

Corrective Actions

Guidance for assessing exterior plant activities for the potential on plant ventilation systems will be implemented by July 31, 1996. In the interim, the station ventilation system managers will review work packages involving exterior plant cleaning/sealing activities having the potential to affect plant ventilation systems.

Previous Similar Occurrences

None