

<b>NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION</b> (6-1998)	<b>APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001</b> Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.
<b>LICENSEE EVENT REPORT (LER)</b>  (See reverse for required number of digits/characters for each block)	

<b>FACILITY NAME (1)</b> Limerick Generating Station, Units 1 and 2	<b>DOCKET NUMBER (2)</b> 05000352/05000353	<b>PAGE (3)</b> 1 OF 3
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**TITLE (4)**  
 Unusual Event declared due to detection of toxic gas within the site area boundary

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
09	23	1999	1999	-- 011	-- 00	10	22	1999	FACILITY NAME	DOCKET NUMBER
										05000
									FACILITY NAME	DOCKET NUMBER
										05000

<b>OPERATING MODE (9)</b>	1	<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)</b>								
		20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)					
<b>POWER LEVEL (10)</b>	100	20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	x	50.73(a)(2)(x)				
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)		73.71				
		20.2203(a)(2)(ii)	20.2203(a)(4)	x	50.73(a)(2)(iv)					
		20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)					
		20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)					
Specify in Abstract below or in NRC Form 366A										

<b>LICENSEE CONTACT FOR THIS LER (12)</b>	
<b>NAME</b> K. P. Bersticker, Manager - Experience Assessment	<b>TELEPHONE NUMBER (Include Area Code)</b> (610) 718-3400

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

<b>SUPPLEMENTAL REPORT EXPECTED (14)</b>				<b>EXPECTED SUBMISSION DATE (15)</b>		
<input type="checkbox"/>	<b>YES</b> (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/>	<b>NO</b>	MONTH	DAY	YEAR

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

On 09/23/99 at 18:45 hours, the oncoming shift of Main Control Room (MCR) operators detected a rotten egg like odor present in the Unit 2 Turbine Enclosure. At 19:22 hours the MCR operators, as a precautionary measure, placed the MCR ventilation system in the Chlorine Isolation mode by manual actuation of the chlorine isolation logic. At 20:00 hours the Shift Manager declared an Unusual Event due to detection of toxic gas within the site area boundary in amounts that could affect normal operation of the plant. At 23:12 hours the Unusual Event was terminated when the odor was no longer detectable. The apparent source of the odor was a sewage disposal truck that arrived on site coincident with detection of the odor.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Limerick Generating Station Units 1 and 2	05000				2 OF
	-352/-353	1999	011	00	3

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

**Unit Conditions Prior to the Event**

LGS Unit 1 was in Operational Condition 1 (Run) at 100% power at the time of this event. Unit 2 was in Operational Condition 1 (Run) at 100% power at the time of this event. There were no other systems, structures, or components inoperable that contributed to the event.

**Description of the Event**

On 09/23/99 at 18:45 hours, the oncoming shift of Main Control Room (MCR) operators detected a rotten egg like odor present in the Unit 2 Turbine Enclosure. Additional reports of a harsh sulfur like smell were received from various plant locations. Portable detection instrumentation (EIS:AI) in the Unit 2 Turbine Enclosure registered readings of 65 ppm hydrogen sulfide (H<sub>2</sub>S) and 115 ppm carbon monoxide (CO).

At 19:22 hours the MCR operators, as a precautionary measure, placed the MCR Heating, Ventilation, and Air Conditioning (HVAC) system in the Chlorine Isolation mode by manual actuation of the chlorine isolation logic, an ESF system.

At 20:00 hours the Shift Manager declared an Unusual Event due to detection of toxic gas within the site area boundary in amounts that could affect normal operation of the plant. At 20:03 hours an evacuation of the Turbine Enclosure was ordered. At 20:15 hours the required one hour ENS notification was completed.

At 21:30 the odor was no longer detectable outside the plant. At 22:30 hours all plant area samples returned normal results. At 22:45 hours access to the plant was restored.

At 23:12 the Unusual Event was terminated. The apparent source of the odor was a sewage disposal truck that arrived on site coincident with the detection of the odor.

MCR toxic gas detection instrumentation (EIS:AI) did not detect any toxic gas concentration during the entire event. This instrumentation is designed to detect and alarm for the following gases; ammonia (23.7 ppm), ethylene oxide (3.5 ppm), formaldehyde (4 ppm) and vinylchlorine (9 ppm). Also phosgene will be detected as ethylene oxide.

The portable analyzer indication of 65 ppm was only present for a few minutes. Levels of H<sub>2</sub>S of 65 ppm would be expected to produce physical effects in personnel exposed. Levels of H<sub>2</sub>S exceeding 100 ppm are classified as immediately dangerous to life and health (IDLH). At 30 ppm eye irritation is expected. No reports of physical effects occurred during the event.

An investigation of potential offsite sources of the odor was conducted. Occidental Chemical, Limerick police, Linfield Fire Company, Limerick Fire Company and the Pennsylvania Department of Environmental Protection were contacted. None of the agencies had received reports of a rotten egg odor during the event. Norfolk Southern confirmed that no rail car shipments of hazardous material or contaminants were shipped on the tracks behind the plant. Norfolk Southern had not received reports of odors along this route.

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**Analysis**

The actual consequences of this event were minimal. There was no release of radioactive material to the environment. The potential consequences of this event were also minimal. MCR HVAC is often placed in the chlorine isolation mode for testing and maintenance activities in accordance with plant operating procedures.

**Cause of the Event**

The event was caused by the MCR operators taking the appropriate conservative actions to ensure MCR habitability was maintained and minimize the impact on plant operations during the investigation of the apparent toxic gas intrusion.

The source of the rotten egg odor and H<sub>2</sub>S indication was the arrival, filling and venting of a sewage disposal truck.

**Corrective Actions**

The following corrective actions have been completed:

- 1) The MCR HVAC was returned to the normal mode.
- 2) Access to the Turbine Enclosures was restored.
- 3) The sewage disposal vendor has been instructed to vent sewage disposal trucks prior to arrival on site.

**Previous Similar Occurrences:**

On 07/28/98, MCR HVAC was manually placed in the Chlorine isolation mode due to a report of a small freon leak on 1A Drywell Chiller. This event was reported in LER 1-98-016.

On 08/20/99, MCR HVAC was manually placed in the Chlorine isolation mode due to a report of faint chlorine odor in the Unit 2 Reactor Enclosure. This event was reported in LER 1-99-010.