NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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 (MNBB 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.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Limerick Generating Station, Unit 2	05000 353	1 OF 4

TITLE (4) Unit 2 HPCI System Inoperable Due to Clogged Turbine Exhaust Drain Line.

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
06	23	97	97	-- 007 --	0	07	23	97		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	100

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)
	20.405(a)(1)(i)		50.36(c)(1)	X	50.73(a)(2)(v)		73.71(c)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER
	20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)
	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 (Include Area Code)
T. A. Moore, Manager - Experience Assessment, LGS	(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
	BJ	OR								

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 15 single-spaced typewritten lines) (16)

On June 23, 1997, during the performance of RT-6-055-380-2, "HPCI Drain Pot Flow Orifice Test," flow from the turbine exhaust drain pot could not be confirmed. Given this situation, an undetermined amount of condensed water was present in the High Pressure Coolant Injection (HPCI) turbine. The HPCI System was declared inoperable, because the water in the turbine may impair the ability of the system to fulfill its design safety function. A four-hour notification was made to the NRC in accordance with 10CFR50.72(b)(2)(iii)(D). Corrective maintenance on the HPCI turbine exhaust drain pot drain line identified the cause as foreign material in the drain line flow orifice. A similar event to this occurred in 1989, which in part, led to the creation of the routine test (RT) that identified this 1997 problem. Additional planned corrective actions include: evaluation of turbine maintenance activities to ensure appropriate foreign material exclusion (FME) practices are specified, evaluation of the HPCI System for increased monitoring in accordance with Limerick's Maintenance Rule Program, communication of this event to appropriate personnel, and a review of FME Program enhancements in progress to ensure that this situation is addressed by planned actions. This report is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v).

Unit Conditions Prior to the Event:

Unit 2 Reactor was in Operational Condition (OPCON) 1 (Power Operation) operating at 100% power level. There were no structures, systems or components out of service that contributed to this event.

Description of the Event:

On June 23, 1997, during the performance of RT-6-055-380-2, "HPCI Drain Pot Flow Orifice Test," flow from the High Pressure Coolant Injection (HPCI) turbine exhaust drain pot could not be confirmed. Given this situation, an undetermined amount of condensed water was present in the HPCI turbine. The HPCI System was declared inoperable, because the water in the turbine may impair the ability of the system to fulfill its design safety function. A four-hour notification was made to the NRC in accordance with 10CFR50.72(b)(2)(iii)(D).

Corrective maintenance on the HPCI turbine exhaust drain pot drain line was performed on June 25, 1997. At that time, a piece of cloth was found in the drain line flow orifice. Maintenance was completed and the HPCI System returned to service and declared operable on June 26, 1997.

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

Analysis:

There were no adverse consequences from this event. No radioactive material was released. During the time the HPCI System was inoperable, all other Unit 2 Emergency Core Cooling Systems, the Automatic Depressurization System, and the Reactor Core Isolation Cooling System were operable.

Condensation in the HPCI turbine could result in two adverse impacts. With sufficient accumulation, on an automatic HPCI System start, a slug of water would be propelled down the turbine exhaust line, thus causing the exhaust line pressure instruments to sense high pressure and trip the turbine. The other possible impact would be for the exhaust line pressure pulse, caused by the slug of water, to actuate the exhaust line rupture discs. The System would then automatically isolate. Limerick, therefore, has taken the position that the

presence of large amounts of condensation in the HPCI turbine renders the System inoperable, because continued operation cannot be assured following an automatic start.

For this event, no adverse impacts of running the HPCI System were observed. The last maintenance performed on the Unit 2 HPCI System that could have introduced the foreign material found in the exhaust line drain pot drain orifice was in February 1997. Three (3) satisfactory HPCI System performance tests were completed following completion of the maintenance in February 1997. Given this information, the point of discovery for the operability determination is June 23, 1997 (when RT-6-055-380-2 was performed) and the HPCI System was determined to be available in the as-found condition.

Cause of the Event:

The cause of this event was personnel error, related to less than adequate implementation of PECO Nuclear's Foreign Material Exclusion (FME) program during recent maintenance. A small piece of cloth (circular, approximately 1" in diameter) was found in the HPCI turbine exhaust drain pot drain line orifice. The exact origin of this piece of cloth was not determined. The piece of cloth was most likely introduced during the System work performed during the 2R04 refueling outage in February 1997.

Corrective Actions:

The immediate corrective action was the disassembly and cleaning of Unit 2 HPCI turbine exhaust drain pot drain line.

Planned corrective actions include: evaluation of Nuclear Maintenance Division tasks (including turbine maintenance activities) to ensure appropriate foreign material exclusion (FME) practices are specified, evaluation of the HPCI System for increased monitoring in accordance with Limerick's Maintenance Rule Program, communication of this event to appropriate personnel, and a review of FME Program enhancements in progress to ensure that the circumstances of this event are addressed by planned actions. The scope of the planned corrective actions includes consideration of a self-identified trend of lesser significant plant issues involving foreign material.

Previous Similar Occurrences:

One previous similar event occurred at Limerick, also Unit 2, in October 1989 and was reported in LER 2-89-010. This event was caused by construction debris introduced into the HPCI turbine exhaust line when the suppression pool was inadvertently filled above the height of the HPCI turbine exhaust penetration. Corrective actions for the 1989 event were to flush the Unit 2 HPCI turbine exhaust line and the creation of routine tests to verify flow through the drain pot orifices of both units' HPCI Systems. This 1997 condition was identified by the routine test that was initiated in 1989.