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PECO ENERGY

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10CFR 50.73

January 25, 1996

Docket No. 50-352
License No. NPF-39

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Licensee Event Report
Limerick Generating Station - Unit 1

This LER reports a Unit 1 Primary Containment and Reactor Vessel Isolation Control System isolation signal, an Engineered Safety Feature, initiated by the Steam Leak Detection System, resulting in a Reactor Water Cleanup (RWCU) system isolation. The RWCU system isolation was caused by an unexpected acute failure of the 'B' RWCU pump seal.

Reference:	Docket No. 50-352
Report Number:	1-95-011
Revision Number:	00
Event Date:	December 27, 1995
Report Date:	January 25, 1996
Facility:	Limerick Generating Station P.O. Box 2300, Sanatoga, PA 19464-2300

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Very truly yours,

Robert W Boyce

DMS:cah

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

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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 1	05000352	1 OF 3

TITLE (4) Engineered Safety Feature Actuation resulting from a Reactor Water Cleanup (RWCU) System Isoaltion, caused by High 'B' RWCU Pump Room Temperature after a Pump Seal Failed.

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
12	27	95	95	-- 011 --	0	1	25	96		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)	x	50.73(a)(2)(iv)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)
	20.405(a)(1)(iii)		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)

	73.71(b)
	73.71(c)
	OTHER (Specify in Abstract below and in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
J. L. Kantner, 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
AH	044	PUMP	UNION	YES						

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 12/27/95 at 1850 hours, a Group III Primary Containment and Reactor Vessel Isolation Control System (PCRVICS) isolation signal occurred, an Engineered Safety Feature, initiating a Reactor Water Cleanup (RWCU) system isolation. The PCRVICS isolation signal was initiated when the Steam Leak Detection System (Divisions I & IV) detected high room temperatures in the 'B' RWCU pump room above the 135 degrees F trip setpoint. The 'B' RWCU pump was isolated and RWCU system restoration commenced. By 0200 hours on 12/28/95, the 'A' and 'C' RWCU pumps were returned to service. There were no adverse consequences and no radioactive material was released to the environment as a result of this event. An investigation revealed that an unexpected acute failure of the 'B' RWCU pump Durametallic HPTOCODE seal occurred resulting in the release of steam into the 'B' RWCU pump room, thereby initiating the high temperature isolation signal. The 'B' RWCU pump is currently out of service with the 'A' and 'C' RWCU pumps in operation. An overhaul of the 'B' RWCU pump is scheduled for 03/11/96, which includes replacement of the pump seal with an Atomic Energy of Canada CAN 6 seal. The RWCU system is the only high temperature, high pressure application at Limerick which uses the Durametallic or CAN 6 seals.

Unit Conditions Prior to the Event:

Unit 1 was in Operational Condition 1 (Power Operation) at 100% power level in end of cycle coastdown.

There were no structures, systems, or components out of service that contributed to this event. The 'A','B', and 'C' Reactor Water Cleanup (RWCU, EIIS:CE) pumps were in operation.

Description of the Event:

On December 27, 1995, at 1850 hours, a Group III Primary Containment and Reactor Vessel Isolation Control System (PCRVICS, EIIS:JM) isolation signal occurred, an Engineered Safety Feature (ESF), initiating a RWCU system isolation. The RWCU system inboard and outboard primary containment isolation valves (HV-44-1F001 & 1F004) closed as designed upon receipt of the isolation signal. The PCRVICS isolation signal was initiated when the Steam Leak Detection System (Divisions I & IV) detected high room temperatures in the 'B' RWCU pump room above the 135 degrees F trip setpoint. Operations personnel executed Trip (T) procedure T-103, "Secondary Containment Control," without incident.

An investigation revealed that an unexpected acute failure of the 'B' RWCU pump seal (EIIS:SEAL) occurred resulting in steam leakage and the subsequent PCRVICS isolation signal. The 'B' RWCU pump was manually isolated and RWCU system restoration commenced. Operations personnel reset the PCRVICS isolation signal in accordance with the General Plant (GP) procedure GP-8, "Primary and Secondary Containment Isolation Verification and Reset," and by 0200 hours on December 28, 1995, the 'A' and 'C' RWCU pumps were returned to operation.

At 1948 hours on December 27, 1995, a 4-hour notification was made to the NRC pursuant to the requirements of 10CFR50.72 (b)(2)(ii), since this event resulted in an automatic ESF actuation. This report is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(iv).

Analysis:

The consequences of this event were minimal. There was no release of radioactive material to the environment as a result of this event. The RWCU system isolated in response to the high 'B' RWCU system pump

room temperature as sensed by the Steam Leak Detection System. The RWCU system was out of service for approximately 7 hours and 10 minutes. During this time period, conductivity (an indicator of reactor water purity) increased only slightly. The reactor water purity remained well within the limits specified by Technical Specifications during this event.

Cause of the Event:

The cause of the RWCU system isolation was an unexpected acute failure of the 'B' RWCU pump seal resulting in the release of steam into the 'B' RWCU pump room initiating the high temperature PCRVICS isolation signal.

The failed seal is a Durametallic HPTOCODE seal and had been in service for approximately 2 years and 10 months, with no indications of leakage prior to this event. Previous RWCU pump seal failures have occurred at LGS; however, the steam leakage from these failures was of lesser magnitude and did not result in automatic isolations of the RWCU system.

Corrective Actions:

The 'B' RWCU pump is currently out of service with the 'A' and 'C' RWCU pumps in operation. An overhaul of the 'B' RWCU pump is scheduled for March 11, 1996, at which time the failed seal will be inspected. The pump seal will be replaced with an Atomic Energy of Canada CAN 6 seal. The CAN 6 seal is a cartridge type which is easier to install and has an improved internal design to prevent premature failure. Presently, 3 of the 6 total Unit 1 and Unit 2 RWCU pumps have the CAN 6 seal installed. Schedules are being developed for replacement of the remaining 2 RWCU pump seals. No other Durametallic seals or CAN 6 seals are known to be leaking at this time. The RWCU system is the only high temperature, high pressure application at Limerick Generating Station (LGS) which uses the Durametallic or CAN 6 seals.

Previous Similar Occurrences:

None