

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1): Shoreham Nuclear Power Station Unit #1	DOCKET NUMBER (2): 0500032285	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
			051	00	02	OF	03

TEXT (If more space is required, use additional NRC Form 286A's (17))

On November 4, 1985, while performing maintenance on the HPCI Turbine Exhaust line, two check valves in the line were found to be inoperable due to the separation of the disc from their valve bonnets. The plant was in Operational Condition 5 at the time, with the mode switch in Shutdown.

On October 30, 1985, prior to finding the two check valves inoperable, maintenance personnel were working on gate valve E41*MOV-044, to reduce valve leakage when unidentified components were found in the valve. Upon further investigation, it was determined that the unidentified components were the disc, swing arm and bolt from the check valve immediately upstream, E41*18V-022, HPCI Turbine Exhaust Downstream Check Valve. The disc was wedged at the inlet of the gate valve.

On November 2, 1985, maintenance was initiated to repair E41*18V-022, in order to restore the valve to operational status. Maintenance personnel disassembled Check Valve E41*18V-022 and discovered the disc and swing arm from a second check valve further upstream in the line, E41*18V-021, HPCI Turbine Exhaust Upstream Check Valve, wedged in the inlet of E41*18V-022. On November 4, inspection and repair of E41*18V-021 began in order to restore the valve to operational status. Check Valve E41*18V-021 was disassembled and absence of the disc and mechanism was confirmed. Plant Management was immediately notified of the situation at 1330 and at this time it was determined that it was reportable per 10CFR 50.73(a)(2)(v)(d). The NRC was notified at 1507.

HPCI was last run on September 25, 1985 without incident. E41*MOV-044 was last stroked satisfactorily on July 30, 1985 per Technical Specification requirements. A LLRT was last performed satisfactorily on June 14, 1984 for penetration X-13, which is composed of E41*MOV-044, E41*18V-022 and E41*18V-021.

Further investigation of the malfunctions indicate that, in both cases, the hinge support piece separated from the bonnet, allowing the disc of each Check Valve to move downstream and become wedged in the inlet of the downstream valve. A major factor in the malfunction could have been the use of auxiliary steam in the system, causing the disc to oscillate frequently, thus loosening the disc and hinge support piece. The use of nuclear steam in the system should reduce this occurrence.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104
EXPIRES 8/31/85

FACILITY NAME (1): Shoreham Nuclear Power Station Unit #1	DOCKET NUMBER (2): 0 5 0 0 0 3 2 2	LER NUMBER (8):			PAGE (3):		
		YEAR 8 5	SEQUENTIAL NUMBER 0 5 1	REVISION NUMBER 0 0			
					0 3	OF	0 3

TEXT IF MORE SPACE IS REQUIRED (i.e., additional NRC Form 204A's (17))

The manufacturer of these Check Valves is Anchor Darling. The actual cause of the valve malfunction is currently under investigation. Both valves are the swing check variety and use capscrews to attach the hinge support piece to the bonnet. Valve malfunction can be attributed to separation of the hinge support piece from the bonnet and was apparently caused by either:

- 1) Capscrews loosened and subsequently backed out, allowing the hinge support piece, swing arm and disc to come free from the bonnet.
- 2) Capscrew Material Failure, having the same impact as above

To date, only one capscrew has been recovered. Efforts are continuing to locate the other screws.

Prior to this incident, and based on Vendor recommendations, precautions were taken in the location, design and operation of the HPCI Turbine to eliminate operating conditions which could potentially cause Check Valve damage.

There was minimal safety significance to this event. Although the isolation valve, E41*MOV-044, may not have completely closed if required, any leakage through the containment would have been contained by a safety system (HPCI).

Efforts to resolve the problem and prevent recurrence are being implemented. Two approaches are being used in parallel. The first approach involves repairing the damaged valve internals, securing the hinge support piece to the bonnet and returning the existing Check Valves to operational status. The parts have been returned to the vendor for repair. The second approach involves replacing the existing Check Valves with new Check Valves. This approach requires stress analysis and pipe support analysis, since the new Check Valves are approximately double the weight of the existing ones. Engineering has initiated these analyses.

It is expected that repairing the existing Check Valves will be a suitable means of resolving the situation and preventing recurrence. Replacement of the existing Check Valves will occur if needed. An effort to examine other Anchor Darling Check Valves in the plant was initiated. MWRs were written to inspect the valves for generic deficiencies. A supplemental report will be forthcoming, upon completion of the investigation of valve failures and inspections.



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION • P.O. BOX 628 • WADING RIVER, NEW YORK 11792

TEL. (516) 929-8300

November 26, 1985

PM-85-273

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

In accordance with 10CFR50.73, enclosed is a copy of Shoreham Nuclear Power Station Unit #1's Licensee Event Report 85-051.

Sincerely yours,

William E. Steiger, Jr.
Plant Manager

WES/gr

Enclosure

cc: Dr. Thomas E. Murley, Regional Administrator
John Berry, Senior Resident Inspector
Institute of Nuclear Power Operations, Records Center
American Nuclear Insurers

SR.A21.0200