

50-289

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INCIDENT REPORT

TO:

Mr J. P. O'Reilly

FROM:

Metropolitan Edison Company  
Reading, Pa.  
R. C. Arnold

DATE OF DOCUMENT

3/25/77

DATE RECEIVED

4/1/77

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## DESCRIPTION

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PLANT NAME:

(3-P)

Three Mile Island Unit No. 1

RJL

**ACKNOWLEDGED**

## ENCLOSURE

Licensee Event Report (RO 50-289/77-03/3L) on  
3/9/77 concerning the Reactor Building Spray  
Pump Suction Isolation Valve Motor failing...NOTE: IF PERSONNEL EXPOSURE IS INVOLVED  
SEND DIRECTLY TO KREGER/J. COLLINS

## FOR ACTION/INFORMATION

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METROPOLITAN EDISON COMPANY

SUBSIDIARY OF GENERAL PUBLIC UTILITIES CORPORATION

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**REGULATORY DOCKET FILE COPY**

GQL 0363

March 25, 1977

Mr. J. P. O'Reilly, Director  
Office of Inspections and Enforcement, Region 1  
U. S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Sir:

Docket No. 50-289  
Operating License No. DPR-50

In accordance with the Technical Specifications of our Three Mile Island Nuclear Station Unit 1 (TMI-1), we are reporting the following reportable occurrence:

- (1) Report Number: 77-03/3L
- (2a) Required Report Date: 04/08/77
- (2b) Date of Occurrence: 03/09/77
- (3) Facility: Three Mile Island Nuclear Station - Unit 1
- (4) Identification of Occurrence:

Title: The Reactor Building Spray Pump Suction Isolation Valve  
Motor failed.

Type: A reportable occurrence as defined by Technical Specifications 6.9.2.B.2 in that the Reactor Building Spray Pump Suction Isolation valve failed to operate thus leading to operation in a degraded mode permitted by a limiting condition for operation established in Technical Specification 3.3.1.3.A.

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## (5) Conditions Prior to Occurrence:

Power Core:	2528 MWt
Elec:	844 MWe
RC Pressure:	2155 psig
RC Flow:	$144 \times 10^6$ lbs/hr
RC Temp.	579°F
PRZR Level	220 inches
PRZR Temp	655°F

## (6) Description of Occurrence:

At 0915 hours on March 9, 1977, the Reactor Building Spray Pump Suction Isolation Valve, BSV3B, failed to close while actuating it from the remote control switch. The incident occurred upon completion of SP 1303-4.14. Reactor Building Spray Systems Channels Test while the Control Rooms operator was returning BS-V3B to its normally closed position. When the valve commenced traveling, its breaker tripped. The breaker was reset, but tripped after another attempt at remote activation, and was manually closed. The breaker tripped once again when an attempt was made to open the valve, and was finally placed in the open, engineered safeguards position. The redundant valve was cycled prior to the failure, thus verifying its operability.

## (7) Apparent Cause of Occurrence:

The cause of this event has been determined to be material in that excessive grease in the operators spring pack stopped the normal compression of the spring and prevented the torque switch from sensing the amount of force applied to the valve. The motor shorted out because it was running while the valve was seated.

While the grease in the spring pack was the cause for the failure. A contributing factor was the settings of the overload devices. These settings were intentionally high to assure operation during an ES condition. Therefore, the overload devices do not provide adequate thermal protection for the motors. (Reference September 18, 1973 letter from AEC to Met-Ed).

## (8) Analysis of Occurrence:

It has been determined that this occurrence did not constitute a threat to the health and safety of the public in that:

- A) BS-V3A, the suction isolation valve for the redundant "A" Spray Pump, was operable.
- B) One (1) Reactor Building Spray Pump is sufficient to remove iodine from the Reactor Building atmosphere during a loss of coolant accident.

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March 25, 1977

- C) One (1) Reactor Building Spray Pump and one (1) of the three (3) Reactor Building Emergency Cooling units are sufficient to cool the Reactor Building atmosphere during a loss of coolant accident.

(9) Corrective Action:

In addition to the immediate corrective action described above, ES-V3B's motor was replaced and the excess grease removed from the spring pack. The cartridge bearing holder and bearing were replaced although it did not contribute to the failure.

The Plant Operations Review Committee and Unit Superintendent have reviewed and approved the above corrective action and have taken steps to assure its completion.

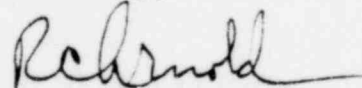
(10) Failure Date:

Valve operator	Manufacturer:	Limitorque
	Type/Size	: SMB-00
Motor:	Manufacturer:	Reliance Electric Co.
	I.D. No.	: 447014-FW
	Start	: 25 ft/lb
	Run	: 5 ft/lb
	Type	: P
	Frame	: P56
	Phase	: 3
	RPM	: 1700
	Frequency	: 80 Hz
	Volts	: 230/460
	Amps	: 8.0/4.0
	Rise at Run Torque:	15 min 75°C

Similar Occurrences:

75-24, NR-VIA failed due to valve binding

Sincerely,



R. C. Arnold  
Vice President

RCA:DGM:rk  
Attachment

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