



MCA  
9/1/83

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Writer's Direct Dial Number:

August 16, 1983  
4410-83-L-0177

0000853E12

Office of Inspection and Enforcement  
Attn: Mr. Thomas E. Murley  
Regional Administrator  
Region I  
US Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

JEL  
WJ

<b>LER</b>	
LER #	<u>320-83035</u>
EVENT DATE	<u>830720</u>
INPO RCVD DATE	<u>830831</u> <i>KEW</i>
NSAC RCVD DATE	_____

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)  
Operating License No. DPR-73  
Docket No. 50-320  
Licensee Event Report 83-035/99X-0

Attached please find Licensee Event Report 83-035/99X-0 concerning the failure of MSA Ultra Filters on July 20, 1983.

Please note, under the applicable Technical Specifications at the time of the failure, this is not a reportable event since no specifications were violated. However, given the circumstances of the event, we are reporting this event as a special event.

Sincerely,

/s/ J. J. Barton for

B. K. Kanga  
Director, TMI-2

BKK/RDW/df

Attachments

CC: Mr. L. H. Barrett, Deputy Program Director - TMI Program Office  
Dr. B. J. Snyder, Program Director - TMI Program Office

LICENSEE EVENT REPORT

Attachment 1  
4410-83-L-0177

CONTROL BLOCK: \_\_\_\_\_ (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | P | A | T | M | T | I | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | 5

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

LICENSEE CODE 14 16 LICENSE NUMBER 26 28 LICENSE TYPE 30 32 CAT 34 36

0 1 | L | 6 | 0 | 5 | 0 | 0 | 0 | 3 | 2 | 0 | 7 | 0 | 7 | 2 | 0 | 8 | 3 | 8 | 0 | 8 | 1 | 6 | 8 | 3 | 9

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

REPORT SOURCE 34 36 DOCKET NUMBER 38 40 EVENT DATE 42 44 REPORT DATE 46 48

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | On July 20, 1983, 36 Mine Safety Appliances (MSA) Ultra Filters were discovered to

0 3 | have penetration levels in excess of the allowable 0.03% based on results from the

0 4 | Air Techniques Q-127 respirator filter testing device at TMI. The filters were sent

0 5 | to MSA for further testing. 50 additional MSA filters were tested during the week of

0 6 | July 25, 1983. Three (3) failures were found; these were sent to Air Techniques.

0 7 | Test results from MSA and Air Techniques confirmed TMI's readings. This event is

0 8 | not reportable pursuant to TMI's Technical Specifications.

0 9 | Z | Z | 11 | E | 12 | X | 13 | X | X | X | X | X | X | 14 | Z | 15 | 7 | 16

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

SYSTEM CODE 8 10 CAUSE CODE 11 CAUSE SUBCODE 12 COMPONENT CODE 13 14 15 16 17 18 COMP. SUBCODE 19 VALVE SUBCODE 20

17 | LER:RO | EVENT YEAR | SHUTDOWN | OCCURRENCE | REPORT | REVISION

NUMBER | 8 | 3 | METHOD | CODE | TYPE | NO.

21 22 23 24 25 26 27 28 29 30 31 32

ACTION TAKEN 18 X 19 X EFFECT ON PLANT 20 Z SHUTDOWN METHOD 21 Z HOURS 22 0 0 0 0 0 ATTACHMENT SUBMITTED 23 Y NPRD-4 FORM SUB. 24 N PRIME COMP. SUPPLIER 25 Z COMPONENT MANUFACTURER 26 M 3 3 5

33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | Based on a discussion with the filter manufacturer, the cause of the event appears to

1 1 | be due to an adhesive separation between the filter media and the filter base. Only

1 2 | MSA ultra filters which have been tested and found acceptable will be issued for field

1 3 | use. This LER will be updated upon receipt of formal documentation from the

1 4 | manufacturer, if necessary.

1 5 | X | 28 | 0 | 0 | 0 | 0 | 29 | Recovery Mode | B | 31 | Initial Testing | 32

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

FACILITY STATUS 8 10 % POWER 11 OTHER STATUS 12 13 METHOD OF DISCOVERY 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

1 6 | Z | 33 | Z | 34 | N/A | 35 | N/A | 36

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

ACTIVITY RELEASED 8 10 CONTENT OF RELEASE 11 AMOUNT OF ACTIVITY 12 13 LOCATION OF RELEASE 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

1 7 | 0 | 0 | 0 | 37 | Z | 38 | N/A | 39

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

PERSONNEL EXPOSURES 8 10 NUMBER 11 TYPE 12 DESCRIPTION 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

1 8 | 0 | 0 | 0 | 40 | N/A | 41

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

PERSONNEL INJURIES 8 10 NUMBER 11 DESCRIPTION 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

1 9 | Z | 42 | N/A | 43

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

LOSS OF OR DAMAGE TO FACILITY 8 10 TYPE 11 DESCRIPTION 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

2 0 | N | 44 | N/A | 45

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

PUBLICITY ISSUED 8 10 DESCRIPTION 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

NAME OF PREPARER Russ Wells

PHONE: (717) 948-8461

LER 83-035/99X-0  
EVENT DATE - July 20, 1983

I. EXPLANATION OF THE OCCURRENCE

The following event is not reportable pursuant to TMI-2's Interim Recovery Technical Specifications; however, given the nature of the event, GPUNC is reporting this event as a special report.

During the week of July 18, 1983, an Air Techniques Q-127 respirator filter testing device was placed into operation at TMI. Initial filter testing revealed satisfactory test results for all makes/types of filters utilized with the exception of the Mine Safety Appliances (MSA) ultra filter. A sample of 144 MSA ultra filters, manufactured during the period of May - July, 1981, were tested on July 20, 1983. Of the 144 filters tested, 36 (25 percent) exhibited penetration levels in excess of the allowable 0.03 percent. The 0.03 percent corresponds to a 99.97 percent removal efficiency of thermally generated 0.3 um dioctyl phthalate (DOP). The 36 filters of concern were sent to the MSA factory for testing and evaluation on July 22, 1983. Subsequently, test results from TMI were confirmed by MSA on August 9, 1983.

During the week of July 25, 1983, 50 additional MSA ultra filters, manufactured during the May - July, 1981, timeframe, were tested with only 3 failures observed. Of these 50 filters, 20 (including the 3 failures) were sent to the respirator filter testing machine manufacturer, Air Techniques Inc., on August 3, 1983, in order to verify the accuracy of the recently installed filter testing device. At this time, test results from MSA had not yet been received. The leakage readings observed at Air Techniques confirmed TMI's leakage readings (i.e., the average difference of TMI's readings minus the average difference of Air Techniques' readings was less than 0.001 percent). Ten of the 20 filters tested at Unit 2 and Air Techniques (including the 3 failures) were delivered to the NRC on August 4, 1983, for additional testing at Los Alamos Scientific Laboratory (LASL). Test results from LASL were consistent with those of TMI and Air Techniques.

Leakage rates for the 39 defective filters ranged between 0.03 percent to 1.148 percent with the majority in the range of 0.03 percent and 0.06 percent.

Additionally, an unopened case of 36 MSA ultra filters manufactured during the May - July, 1981, timeframe were delivered to the NRC on July 29, 1983, for testing at LASL. Test results received from LASL indicated no failures in this group.

TMI-1 was advised of this event due to the fact that MSA ultra filters are used by Unit 1 and Unit 2 personnel.

## II. CAUSE OF THE OCCURRENCE

Based on a discussion with the filter manufacturer, the cause of the failures is believed to be due to an adhesive separation between the filter media and the filter base, thereby resulting in bypassing of the filter media.

## III. CIRCUMSTANCES SURROUNDING THE OCCURRENCE

Prior to the installation of the respirator filter testing device at TMI, manufacturer tested filters were issued to personnel and then discarded after use. The function of the filter testing device is to test each filter after use and reissue those which do not exceed the allowable penetration criteria, thus reducing the amount of filter replacements.

## IV. CORRECTIVE ACTIONS TAKEN OR TO BE TAKEN

### Immediate

Only MSA ultra filters which have been tested and found acceptable will be issued for field use in either Unit 1 or Unit 2.

### Long-Term

This report will be updated, if necessary, upon receipt of formal documentation from the filter manufacturer concerning this event.

## V. COMPONENT FAILURE DATA

Ultra filter - Mine Safety Applicances  
(Part No. 464807)

TMI-2 bcc list  
(external distribution)

Mr. E. L. Blake, Jr.  
Shaw, Pittman, Potts & Trowbridge  
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Washington, DC 20036

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Lynchburg, VA 24505

US Nuclear Regulatory Commission  
c/o Document Management Branch  
Washington, DC 20555

Mr. Willis Bixby  
Department of Energy (DOE)  
Building 400 - TMI

Mr. Harold Burton  
EG&G  
Building 400 - TMI

Dr. Steven Long, Director  
Power Plant Siting Program  
Department of Natural Resources  
Tawes State Office, Building B-3  
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Annapolis, MD 21401

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Bureau of Radiation Protection  
PA Department of Environmental  
Resources  
Fulton National Bank Building  
Harrisburg, PA 17120

American Nuclear Insurers  
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KAN  
12/30/83



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7-7 944-7621  
TELEX 84-2386  
Writer's Direct Dial Number:

November 30, 1983  
4410-83-L-0280

Office of Inspection and Enforcement  
Attn: Dr. T. E. Murley  
Regional Administrator  
US Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

JEL  
WDV

00000978 C08
LER # 320-83035-1
EVENT DATE 831110
IND ROVD DATE 831209 fec
USAC ROVD DATE

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)  
Operating License No. DPR-73  
Docket No. 50-320  
Licensee Event Report 82-035/01L-1

Attached please find revised Licensee Event Report 82-035/01L-1 concerning the inoperable Reactor Building Sump Level Indicator on November 10, 1982.

This event concerns Section 3.3.3.6 and is considered reportable under Section 6.9.1.8(b) of the Interim Recovery Technical Specifications.

Sincerely,

/s/ B. K. Kanga

B. K. Kanga  
Director, TMI-2

BKK/RDW/jep

Attachment

CC: Mr. L. H. Barrett, Deputy Program Director - TMI Program Office  
Dr. B. J. Snyder, Program Director - TMI Program Office





LER 82-035/01L-1  
EVENT DATE - November 10, 1982

I. EXPLANATION OF THE OCCURRENCE

At 1120 hours on November 10, 1982, the Reactor Building (RB) Sump Level Indicator was observed to be reading high at an indicated twenty-four (24) inches H<sub>2</sub>O on RBS-LTI-6000. (At the time, it was expected that there should have only been three to five inches of water.) An investigation was initiated to determine the cause of the high reading and correct the situation.

Due to this anomaly, the RB Sump Level Indicator was declared inoperable. This condition placed the unit in the Action Statement of Technical Specification 3.3.3.6. At 1920 hours on November 10, 1982, the eight hour timeclock of the Tech Spec Action Statement was exceeded, thus warranting a prompt report pursuant to Section 6.9.1.8(b) of the Recovery Technical Specifications.

The RB Sump Level Indication was returned to service at 1900 hours on November 12, 1982.

II. CAUSE OF THE OCCURRENCE

The cause of this event has been attributed to a buildup of sludge in the end of the RB Sump level's tygon tubing. The level instrument is of the bubbler type with its sensing line (tygon tubing) located on the RB basement floor. The buildup of sludge in the tube is attributed to the recently performed RB decon spraying evolutions in the vicinity of the level indicator's tygon tubing.

III. CIRCUMSTANCES SURROUNDING THE OCCURRENCE

At the time of the occurrence, the Unit 2 facility was in a long term cold shutdown state. The reactor decay heat was being removed via loss to ambient. Throughout the event there was no effect on the Reactor Coolant System or the core.

IV. CORRECTIVE ACTIONS TAKEN OR TO BE TAKEN

Immediate - On November 10, 1982, the cause was believed to be a plugged line and confirmatory actions were initiated. These actions included:

- The bubbler pressure was raised to 10 lbs. in an attempt to blow the tubing clear. However, no change in indication was observed (November 10, 1982).



- ° The bubbler instrumentation was checked by setting up a test rig which duplicated the bubbler tube arrangement in a controlled, known set of conditions (November 10, 1982).
- ° Another attempt to blow the line free was made with 20 lbs. of pressure. This time the level indication reduced from approximately 7 inches to .5 inches H<sub>2</sub>O (November 10, 1982).
- ° On November 12, 1982, the level instrument was returned to service after a preliminary water balance calculation, a visual inspection during an RB entry, and careful tracking of the inleakage and outleakage for the RB verified the level indication was appropriate and operable. The preliminary water balance calculation was verified by a more detailed calculation performed on November 13, 1982.

In addition, samples were taken from the groundwater monitoring stations on November 13, 1982, to determine if any significant changes had occurred which would indicate a Reactor Building leak. These samples and samples taken subsequent to November 13, 1982, have shown no abnormal changes in groundwater tritium activity.

Long-Term - GPUNC has monitored the RB Sump Level bubbler system for approximately one year. The results of this monitoring have demonstrated that the present installation is providing reliable RB Sump water level indication. GPUNC has, therefore, determined that the present system is satisfactory.

In order to alleviate occurrences of this reportable event, the bubbler line will be blown down once a month in order to prevent clogging of the RB Sump level's tygon tubing.

#### V. COMPONENT FAILURE DATA

N/A

TMI-2 bcc list  
(external distribution)

Shaw, Pittman, Potts & Trowbridge  
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US Nuclear Regulatory Commission  
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Washington, DC 20555

Department of Energy (DOE)  
Attn: Mr. Willis Sixby  
Building 400 - TMI

EG&G  
Attn: Mr. Harold Burton  
Building 400 - TMI

Department of Natural Resources  
Power Plant Siting Program  
Attn: Dr. Steven Long, Director  
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Bureau of Radiation Protection  
PA Department of Environmental  
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