

September 19, 1983  
NRC/TMI-83-059

MEMORANDUM FOR: Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
Bernard J. Snyder, Program Director  
TMI Program Office

FROM: Lake H. Barrett, Deputy Program Director  
TMI Program Office

SUBJECT: NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT FOR  
September 11 - September 17, 1983

Data from effluent and environmental monitoring systems indicated no plant releases in excess of regulatory limits. Waste shipments continued on a routine basis. Plant parameters showed no significant changes. The reactor coolant system is depressurized and RCS level remains at 321'6". Core sampling and preparations for head lift (early 1984) continued.

The major event this week was release of the two NRC investigative reports dealing with allegations made by licensee engineers in March 1983. Site activities included: underhead characterization operations, "A" spent fuel pool refurbishment and procedure review. Four reactor building entries were made in support of miscellaneous tasks. (For more details see appropriate paragraphs below.)

Significant items covered in the enclosure are:

- Reactor Building Activities
- Polar Crane Status
- Spent Fuel Pool "A" Refurbishment
- Auxiliary and Fuel Handling Building Activities
- Waste Management Activities
- TMI Occupational Exposure
- Public Meetings

Data summary sheets included in this report are:

- Liquid Effluent Data
- Environmental Data
- Radioactive Material/Radwaste Shipment Data
- Water Processing Data
- Plant Status Data
- Airborne Effluent Data

*LDK-5  
TMI*

8310060164 830919  
PDR ADOCK 05000320  
R PDR

//signed//  
Lake H. Barrett  
Deputy Program Director  
TMI Program Office

OFFICE	Enclosure:	As stated					
SURNAME							
DATE							

INTERNAL DISTRIBUTION

EDO  
OGC  
Office Directors  
Commissioner's Technical Assistants  
NRR Division Directors  
NRR A/D's  
Regional Administrators  
IE Division Directors  
TAS  
EIS  
THI Program Office Staff (15)  
PHS  
EPA  
DOE  
RI Division Directors  
Public Affairs, RI  
State Liaison, RI  
THIPO HQ r/f  
THI SITE r/f  
CENTRAL FILE  
NRC PDR  
LOCAL PDR  
THI-2 Project  
Section File

OFFICE ▶	THIPO	THIPO	THIPO	THIPO	THIPO		
SURNAME ▶	KBarr/Imp	Joe	Arasano	PGant	LBarrett		
DATE ▶	9/11/83	9/19/83	9/19/83	9/19/83	9/ /83		



## ENCLOSURE

### REACTOR BUILDING ACTIVITIES:

Four reactor building entries were completed during the week of September 11, 1983, the major activity continued to be core sampling. Three of the six scheduled core debris samples were taken from the reactor vessel before difficulties put sampling operations on temporary hold. The final task of the characterization program, trial parking of five control rod drive lead screws for determination of radiation field changes, was not performed.

The difficulties encountered centered around two events which occurred on September 12, 1983. First, chemistry technicians accidentally dropped 35 feet of tygon tubing into the reactor vessel. The tubing was part of equipment used to draw the weekly reactor coolant system water sample. The tygon tubing slipped and fell through a CRDM opening onto the core debris bed in the area designated for taking the next three core samples. The core sampling procedure was postponed while an evaluation was made to determine the disposition of the tygon tubing.

Also, on September 12, 1983, a 400 pound, 8 foot long "I" beam was dropped onto the service structure handrail while installing a monorail hoist on the underside of the missile shields in preparation for lifting the five control rod drive lead screws. The "I" beam did not injure anyone nor cause any damage other than a bent handrail, however, the trial parking of the five lead screws will be delayed while the incident is investigated.

Three debris samples were taken at various depths in the center of the core (H-8). The radiation field at one foot from the sampler (one cubic inch capacity) was approximately 3 R/hr. One of the three samples was obtained from an area 25 inches below the surface of the debris bed. The sampling device operators noted some resistance after inserting the sampler 14 inches into the debris but rotated and pushed the sampler until they reached 25 inches into the debris. The operators noted that the final four inches of travel were relatively resistance free. Debris samples will be sent to several offsite laboratories for analysis.

A new reactor building entry schedule, for continuation of preparations for head removal, is being developed based on evaluations of the September 12, 1983, incidents.

### POLAR CRANE STATUS:

Two investigation reports were released last week. A report from the Office of Inspector and Auditor concluded that allegations regarding improper NRC staff conduct were not substantiated. A report from the Office of Investigations concluded that allegations regarding Bechtel personnel following procedures that were not consistent with GPU administrative procedures were substantiated. The Commission has the reports under review and Chairman Palladino has asked the staff to report to the Commission in early October. The TMIPO staff is continuing the review of all licensee documents related to the reactor building polar crane.

### AUXILIARY AND FUEL HANDLING BUILDING ACTIVITIES:

Construction work on the 328 foot elevation Decontamination Facility Addition continued this week. Completion of the physical construction and installation of the specialized decontamination equipment should occur within the next several weeks. Supporting procedures governing the operation of the facility and its equipment are in final review. Operation of the facility is scheduled to begin in October.

### WASTE MANAGEMENT ACTIVITIES:

1. SDS Liner Shipments. Plans are being made for the eventual shipment and disposal of the pre and final SDS particulate filters (sand and "Cuno" filters) used in the early SDS processing tasks.
2. EPICOR Demineralizer Shipments. EPICOR demineralizer F-29, F-22, and F-30 were shipped from TMI to Hanford, Washington on September 12, 1983. Demineralizers F-42 and F-47 have been dewatered and are being prepared for shipment.

### SPENT FUEL POOL "A" REFURBISHMENT:

The removal of concrete shield blocks from the side of the tank farm progressed as planned this week.

The four driers and one of the two charcoal filters have been moved from the north end of the pool allowing repair of shield slab lifting lugs and conditioning of the slab surfaces. The inlet and outlet pipes on the filters and driers are being sealed in preparation for their removal from the fuel handling building at the end of this month.

Modifications to the submerged demineralizer system (SDS) performed as part of "A" pool refurbishment are scheduled to be completed next week. SDS operation will resume at that time. After treatment of RCS water presently staged in the "C" reactor coolant bleed holdup tank (RCBT), the SDS will then be ready to process water which has been stored in the upper four tanks of the tank farm for shielding purposes.

Decontamination of the upper tanks is scheduled to begin in October. The NRC is reviewing the SDS Technical Evaluation Report (TER), which addresses the safety impact of the SDS in its modified state (tank farm bypassed), and also future use of the SDS in processing RCS water from the internal indexing fixture (IFF) which will occur after reactor vessel head lift.

### TMI OCCUPATIONAL EXPOSURE:

During the period July 1 - July 31, 1983, licensee TLD (Thermoluminescent Dosimeter) records indicated the following station occupational radiation exposure ranges:



Unit 1 and Unit 2 Exposure Ranges

<u>Category in Rem</u>	<u>Number of Station Personnel</u>
No Measurable Exposure	1,306
Exposure Less Than 0.1	338
0.1 to 0.25	79
0.25 to 0.5	31
0.5 to 0.75	10
0.75 to 1	1
1 to 2	0
2 to 3	0

Total Cumulative Plant (TMI-1 and TMI-2) Exposure (July 1983)  
- 41.5 man-rem

Unit 2 Occupational Radiation Exposures

July 1983	34.7 man-rem
Total 1983 (January - July 1983)	255.3 man-rem

Man-rem is an expression for the summation of whole body doses to individuals in a group. Thus, if each member of a population group of 1,000 people were to receive a dose of 0.5 rem (500 millirem) each, the total man-rem dose in each case would be 1 man-rem.

PUBLIC MEETINGS:Past Meetings:

1. On September 13, 1983, Lake H. Barrett met with the Concerned Mothers of Middletown to discuss TMI related issues. They expressed their concern that TMI Unit 1 should not be restarted prior to completion of the TMI Unit 2 cleanup.
2. On September 16, 1983, the Three Mile Island Unit 2 Advisory Panel met with the NRC Commissioners in the Washington office, 1717 H Street, Washington, DC 20555. The Advisory Panel requested that the Commission provide funding for technical consultants to assist the Panel; the Commission is considering this request. It was agreed that:
  - a. Funding the cleanup is the most important issue and that efforts by all should be continued to resolve this difficult problem.
  - b. The Panel could break into subcommittees but that subcommittees would be subject to the Sunshine Act, e.g. publicly notified and open meetings.
  - c. The Hartman investigation should be completed as soon as possible.
  - d. Clarification was needed to determine the safety significance of the Office of Investigation report on the Parks/Gishel allegations.

**Future Meeting:**

On September 28, 1983, the Three Mile Island Unit 2 Advisory Panel will meet from 7:00 PM to 10:00 PM in the Holiday Inn, 23 South Second Street, Harrisburg, Pennsylvania. The meeting will be open to the public. The major topic for the meeting will be polar crane issues. Persons or groups that have questions pertaining to the TMI-2 cleanup that would like to have them considered or addressed by the Advisory Panel can send these questions to Mr. John Minnich, Chairman, Dauphin County Courthouse, P.O. Box 1295, Harrisburg, PA 17108. Persons or groups desiring the opportunity to speak before the Advisory Panel on TMI-2 cleanup related items are asked to contact in writing, Mr. Joel Roth, 4705 Carlisle Pike, Mechanicsburg, PA 17055.

APPENDIX 1

LIQUID EFFLUENT DATA

GPU Nuclear

Liquid effluents from the TMI site released to the Susquehanna River after sampling and monitoring, were determined to be within regulatory limits and in accordance with NRC requirements and the City of Lancaster Agreement.

During the period September 9, 1983, through September 15, 1983, no liquid effluent releases were made from individual sources originating within Unit 2.

Environmental Protection Agency

Lancaster Water Samples:	7 samples
Period Covered:	August 21 - August 27, 1983
Results:	Gamma Scan Negative
TMI Water Samples:	6 samples
Period Covered:	August 27 - September 3, 1983
Results:	Gamma Scan Negative



## APPENDIX 2

### ENVIRONMENTAL DATA

#### EPA Environmental Data

The EPA measures K-85 concentrations at several environmental monitoring stations and reported the following results:

<u>Location</u>	<u>August 19 - September 2, 1983</u> (pCi/m <sup>3</sup> )
Goldsboro	27
Middletown	29
Yorkhaven	23
TMI Observation Center	29

- No radiation above normally occurring background levels was detected in any of the samples collected from the EPA's air and gamma rate networks during the period from September 6, 1983 through September 13, 1983.

#### NRC Environmental Data

Results from the NRC continuous air sampler monitoring of the TMI site environment are as follows:

<u>Sample</u>	<u>Period</u>	<u>I-131</u> (uCi/cc)	<u>Cs-137</u> (uCi/cc)
HP-384	September 8, 1983 - September 14, 1983	<7.8 E-14	<7.8 E-14



### APPENDIX 3

#### RADIOACTIVE MATERIALS/RADWASTE SHIPMENT DATA

- On September 12, 1983, a liquid scintillation spectrometer with a 20 microcuries radium 226 source was shipped from TMI-1 to Packard Instrument Company, Natick, Massachusetts.
- On September 13, 1983, a drum containing two polar crane relays from TMI-2 was shipped to EG&G, Scoville, Idaho.
- On September 13, 1983, a HN-100 type A cask containing EPICOR II liner F-22 was shipped to U.S. Ecology, Hanford burial site, Richland, Washington.
- On September 13, 1983, a SN-1 type B cask containing EPICOR II liner F-29 was shipped to U.S. Ecology, Hanford burial site, Richland, Washington.
- On September 15, 1983, 75 drums of contaminated laundry from TMI-1 and TMI-2 were shipped to Interstate Uniform Service, New Kensington, Pennsylvania.

## APPENDIX 4

### WATER PROCESSING DATA

#### Submerged Demineralizer System (SDS)

SDS maintenance and modifications have been completed. A hydro test is presently in progress to test the system prior to startup, which is tentatively scheduled for September 20, 1983. Water in the "C" reactor coolant bleed tank resulting from the recent "drain down of the RCS" will be the next water to be processed.

The major modification centered on the RCS manifold. This manifold will now be used to reroute reactor building sump water to bypass the tank farm and stage it directly to SDS. It also now has the capability of rerouting the off-gas separator pump discharge to the reactor coolant bleed tank or miscellaneous waste holdup tank. This used to go to the upper tank farm standpipe/monitor tank recycle line. Also, a temporary modification to the SDS removed the steam eductor from the lower tank farm and replaced it with an electrical submersible pump.

#### EPICOR H

EPICOR II was shutdown during the week.



## APPENDIX 5

### PLANT STATUS

Core Cooling Mode: Heat transfer from the reactor coolant system (RCS) to Reactor Building ambient.

Available Core Cooling Mode: Mini Decay Heat Removal (MDHR) system.

RCS Pressure Control Mode: N/A

Major Parameters (as of 5:00 AM, September 16, 1983) (approximate values)

Average Incore Thermocouples\*: 107.5°F

Maximum Incore Thermocouple\*: 153°F

RCS Loop Temperatures:

	A	B
Hot Leg	**	**
Cold Leg (1)	80°F	79°F
(2)	81°F	79°F

RCS Pressure: 0 psig

Reactor Building: Temperature: 75°F

Pressure: -0.15 psig

Airborne Radionuclide Concentrations:

5.7 E-7 uCi/cc H<sup>3</sup> (Tritium)  
(sample taken 9/14/83)

1.3 E-9 uCi/cc particulates  
(predominately Cs-137)  
(sample taken 9/14/83)

\*Uncertainties exist as to the exact location and accuracy of these readings.

\*\*Since the RCS draindown, hot leg temperature detectors are above water level.

## APPENDIX 6

### AIRBORNE EFFLUENT DATA

Airborne releases to the environment as measured by licensee installed monitors at discharge stacks are listed below. These releases were well within regulatory limits.

#### June 1983

	<u>Unit 2</u>	<u>EPICOR II</u>
Noble gases (Ci)	1.33 E1	2.63 E0
Particulates (Ci)	4.59 E-6	5.92 E-8
Tritium (Ci)	5.13 E0	4.82 E-3

#### July 1983

	<u>Unit 2</u>	<u>EPICOR II</u>
Noble gases (Ci)	1.476 E1	2.95 E0
Particulates (Ci)	1.47 E-6	1.19 E-7
Tritium (Ci)	2.13 E0	3.56 E-3

#### August 1983

	<u>Unit 2</u>	<u>EPICOR II</u>
Noble gases (Ci)	2.00 E1*	3.34 E0
Particulates (Ci)	1.63 E-6	9.70 E-8
Tritium (Ci)	3.15 E0	1.04 E-2

\*Includes 1.64 Ci from Unit 1.