

February 27, 1984  
NRC/TMI-84-015

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  
February 18, 1984 - February 25, 1984

Data from effluent and environmental monitoring systems indicated no plant releases in excess of regulatory limits. Waste processing continued on a routine basis. Plant parameters showed no significant changes. The reactor coolant system is depressurized and RCS level remains at 321'6".

Site activities this period included: installation of a readout terminal for the EPA's "Sentry" monitoring system, movement of the reactor building missile shields in preparation for polar crane load testing, other activities to prepare for head lift in late summer, and auxiliary and fuel handling building decontamination. One reactor building entry was made this week in support of technical specifications and polar crane refurbishment tasks. GPUN has scheduled the 210-ton polar crane qualification load test for February 29. (For more details see appropriate paragraphs below.)

Significant items covered in the enclosure are:

- Reactor Building Activities
- Auxiliary and Fuel Handling Building Activities
- Makeup and Purification Demineralizer Disposal Status
- EPA Sentry System (New)
- Waste Management Activities
- 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
- EPA Sentry System Data

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ORIGINAL SIGNED BY:

OFFICE ▶		Lake H. Barrett	
URNAME ▶		Deputy Program Director	
DATE ▶	Enclosure; As stated	TMI Program Office	

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## ENCLOSURE

### REACTOR BUILDING ACTIVITIES:

One reactor building entry was conducted during the week of February 19, 1984. The major work effort during the week involved preparations for the polar crane qualification load test. The majority of the load test preparations were performed outside the reactor building and involved the assembly of rigging, the load cell, and other components. The hardware for the load test will be staged for the load test in the reactor building on Monday, February 27, 1984. The load test is scheduled to be performed on Wednesday, February 29, 1984. A third entry is scheduled for Friday, March 2, 1984 to disassemble the load test rig.

### AUXILIARY AND FUEL HANDLING BUILDING ACTIVITIES:

Decontamination of areas necessary to provide access for surveillance of safety related equipment continued during the week. Decontamination of the miscellaneous waste holdup tank, pump and valve rooms, and the neutralizer tank room should make these areas accessible for equipment surveillance by next week. Scabbling and painting of floors continued.

### WASTE MANAGEMENT ACTIVITIES:

The Submerged Demineralizer System processed wastewater Batch 74. EPICOR II processed Batches 209 and 210. (See Appendix 4)

### MAKEUP AND PURIFICATION DEMINERALIZER DISPOSAL STATUS:

Preparations continued for the removal of the radioactive resins from the makeup and purification demineralizers in late 1984. On February 25, a sample of the contents of the 'A' demineralizer vessel was obtained. A sampling tool was inserted through the resin fill line, forced through the surface crust on the resin bed, and used to successfully withdraw a 60 milliliter sample. About one third of the sample appeared to be resin beads and the remainder was liquid. The sample was similar in appearance to the samples previously obtained from the 'B' demineralizer. The unshielded sample bottle had a contact radiation level of 6 R/hr. When shielded, the highest contact dose rate was 250 mrem/hr, which was reduced to 16 mrem/hr at a distance of one foot. The shielded sample will be shipped on February 28 to Oak Ridge National Laboratory for testing to determine its sluicability and the effectiveness of the proposed process for cesium elution.

### EPA "SENTRI" TELEMETRIC RADIATION DETECTION SYSTEM:

A teletype remote readout terminal for the Environment Protection Agency's (EPA) Reuter-Stokes RA 1011 "Sentri" system of pressurized ion chamber radiation detection telemetry units has been installed at the TMI Program Office on site. The 13 detector units are located at radial distances ranging from 0.5 to 3.5 miles from TMI. The central processor is located at the EPA Field Station in Middletown.

The system printout (Appendix 6) indicates the time of the detector chamber reading, unit location data, an integrated dose in millirem per hour for each detector, the integration time, alarm level and alarm condition. At present,

the EPA printing interval is hourly, and date of the year, as well as the hour, minute and second of the print time. System status checks (last line of Appendix 6) are manually run.

Each sample station also includes a continuous charcoal and particulate air sampler and thermoluminescent dosimeter (TLD). The air sampling cartridges are changed at least weekly and analyzed by gamma spectroscopy at the Middletown Field Station. TLDs are changed quarterly and read at EPA's Office of Radiation Protection Facility in Las Vegas, Nevada.

There are 14 remote spaces available for the EPA Senti system. At present the only two locations in use are at the EPA Field Office and the TMI Program Office on site.

#### PUBLIC MEETINGS:

##### Past Meeting

On February 21, 1984, Lake Barrett met with members of Three Mile Island Alert to discuss the PEIS draft Supplement, the TMI-2 cleanup progress, PEIS Supplement alternatives, e.g. reactor building entombment, and occupational radiation exposure controls utilized in foreign countries.

##### Future Meetings

1. On February 29, 1984 Lake Barrett will speak to the Baltimore-Washington chapter of the Health Physics Society concerning TMI-2 cleanup issues.
2. On March 8, 1984 the Advisory Panel for the Decontamination of Three Mile Island, Unit 2 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 the PEIS Supplement. Persons that have questions pertaining to the TMI-2 cleanup that would like to have them considered or addressed by the Advisory Panel and persons 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

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

During the period February 17, 1984 through February 24, 1984 the effluents contained no detectable radioactivity at the discharge point. Individual effluent sources originating within Unit 2 contained minute amounts of radioactivity. Calculations indicate that less than  $7.7 \text{ E-6}$  (0.0000077) of a curie of tritium was discharged.

#### Environmental Protection Agency

Lancaster Water Samples:	11 samples
Period Covered:	February 1 - February 11, 1984
Results:	Gamma Scan Negative
TMI Water Samples:	6 samples
Period Covered:	February 4 - February 10, 1984
Results:	Gamma Scan Negative

## APPENDIX 2

### ENVIRONMENTAL DATA

#### EPA Environmental Data

- The EPA Middletown Office has not received the environmental Kr-85 analytical results for the samples which were taken subsequent to February 3, 1984 from the EPA's Counting Laboratory at Las Vegas, Nevada. These results will be included in a subsequent report.
- 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 February 14, 1984 through February 21, 1984.


#### 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> <u>(uCi/cc)</u>	<u>Cs-137</u> <u>(uCi/cc)</u>
HP-407	February 16, 1984 - February 23, 1984	<9.3 E-14	<9.3 E-14

APPENDIX 3

RADIOACTIVE MATERIALS/RADWASTE SHIPMENT DATA

- February 21, 1984, 84 drums of contaminated clothing from TMI-2 were shipped to Interstate Uniform Service, New Kensington, Pennsylvania.
  - February 23, 1984, nine samples from the 'A' decay heat removal system (250 ml each), one sample from the borated water storage tank (250 ml) and one sample from the spent fuel pool (250 ml), all from TMI-1, were shipped to NWT Corporation, San Jose, California.
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APPENDIX 4

WATER PROCESSING DATA

Submerged Demineralizer System (SDS)

SDS processed Batch 74 (14,986 gallons) from the miscellaneous waste holdup tank during the period February 11 through February 17, 1984. The performance parameters for this batch are as follows:

SDS Performance Parameters  
February 11, 1984 to February 17, 1984

<u>Radionuclide</u>	<u>Average Influent</u> (uc/ml)	<u>Average Effluent</u> (uc/ml)	<u>Percent Removed</u> (%)
Cesium 137	1.5 E-1	2.4 E-4	99.9
Strontium 90	6.8 E-1	2.2 E-3	99.7

EPICOR II

EPICOR processed Batch 209 (10,627 gallons) and Batch 210 (4,467 gallons) during the period February 17 through February 18, 1984. Batch 209 was from the 'A' monitor tank and Batch 210 was from the 'B' monitor tank. The performance parameters below are an average of the two batches.

EPICOR Performance Parameters  
February 17, 1984 to February 18, 1984

<u>Radionuclide</u>	<u>Average Influent</u> (uc/ml)	<u>Average Effluent</u> (uc/ml)	<u>Percent Removed</u> (%)
Cesium 137	2.6 E-4	1.6 E-7	99.94
Strontium 90	2.9 E-3	2.6 E-5	99.10
Antimony 125	5.1 E-4	3.0 E-7	99.94



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, February 24, 1984 (approximate values):

Average Incore Thermocouples\*: 85°F

Maximum Incore Thermocouple\*: 144°F

RCS Loop Temperatures:

	A	B
Hot Leg**	60°F	66°F
Cold Leg (1)	71°F	64°F
(2)	71°F	64°F

Reactor Core Decay Heat: 18.5 Kilowatts

RCS Pressure: 0 psig

Reactor Building: Temperature: 62°F

Pressure: -0.3 psig

Airborne Radionuclide Concentrations:

1.5 E-7 uCi/cc H<sup>3</sup> (Tritium)  
(sample taken 2/21/84)

8.4 E-9 uCi/cc particulates  
(predominately Cs-137)  
(sample taken 2/21/84)

\*Uncertainties exist as to the exact location and accuracy of these readings.  
Maximum incore thermocouple reading taken February 22.

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

APPENDIX 6

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SENSOR NUM.	NAME	SECTOR	LAST SAMPLE	INTEG. DOSE	INTEG. TIME	AVERAGE	ALARM LEVEL	ALAR COND
2	LOND TWP BLD	3	.0070	.93	134.7	.0069	.02	
3	BROOKS' FARM	2	.0090	1.19	134.9	.0088	.02	
4	HERSHER RES	4	.0090	1.21	134.9	.0090	.02	
5	BROOKS' RES	7	.0099	1.37	141.0	.0097	.02	
6	LIBHART RES	8	.0068	.95	141.0	.0067	.02	
7	DROVERS BANK	9	.0075	1.00	141.0	.0071	.02	
8	KEESER RES	7	.0063	.87	139.7	.0062	.02	
9	GOLDSBORO FD	13	.0103	1.40	139.9	.0100	.02	
10	JACOB'S FARM	12	.0075	1.23	141.0	.0087	.02	
11	POLITES' RES	15	.0063	.43	69.4	.0062	.02	
12	NEWHERRY TOWN	13	.0079	.53	69.7	.0076	.02	
13	THE FIELD ST	1	.0069	.91	140.6	.0064	.02	

SENSOR NUMBER	TRANSMISSION	A/D	CPU	AC POWER	BIAS BATTERY	BATTERY VOLTAGE	HIGH LEVEL CHAMBER	ALARM LEVEL
1	OK	OK	OK	ON	0268	13.70	.00	.000