

May 23, 1983  
NRC/TMI-83-032

52-320

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  
MAY 15-21, 1983

Note that this is a new format for this report. It is hoped that it better serves the needs of the various readers. Submit any further suggestions to the U.S. Nuclear Regulatory Commission, ATTN: Mr. Lake H. Barrett, P.O. Box 311, Middletown, PA 17057 or call 717-948-1120.

Data from effluent and environmental monitoring systems indicated no plant releases in excess of regulatory limits. Waste shipments and water processing tasks continued on a routine basis. Plant parameters showed no significant changes. General clean-up and preparations for headlift continued. Head lift remains at least several months away. As schedules develop, they will be reported. Major activities this week included refurbishment of "A" spent fuel pool, ongoing decontamination in the auxiliary and fuel handling buildings, five reactor building entries supported miscellaneous tasks and continued efforts to resolve polar crane issues. (For more details, see appropriate paragraphs below.)

Significant items included in this report are:

- Auxiliary and Fuel Handling Activities
- Reactor Building Activities
- Polar Crane Status
- Defueling Preparation Activities
- Waste Management Activities
- Scheduled Activities for the Coming Week
- Public Meetings

Data summary sheets included in this report are:

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

Lake H. Barrett  
Deputy Program Director  
TMI Program Office

Enclosure: As stated

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TMI-2 Project

Section File

OFFICE	TMIPQ	TMIPQ	TMIPQ	TMIPQ	TMIPQ		
NAME	KBarr/Imp	JBell	AFasano	LBarr	LBarr		
DATE	5/23/83	5/ /83	5/23/83	5/23/83	5/23/83		



## ENCLOSURE

### AUXILIARY AND FUEL HANDLING ACTIVITIES:

Decontamination efforts continued during the week of May 16, 1983, and consisted mainly of abrasive removal of small amounts of concrete (approximately 1/2 inch deep) from floor surfaces using heavy duty specialized equipment on the 282' elevation. These treated areas were subsequently surveyed, released as radiologically clean and painted. Cleaning and decontamination of building floor drains were ongoing.

Remote hydrolasing in some of the more highly contaminated cubicles on the 282' elevation was performed using a newly acquired robot. The 400 pound wheeled robot is remotely controlled and uses a single extendible arm to spray 150°F high pressure decontamination water over walls and equipment. The decontamination water was recycled from previous cleanup activities. (See attached photo).

### REACTOR BUILDING ACTIVITIES:

Five reactor building entries were completed during the week of May 16, 1983. The majority of in containment work centered on general housekeeping tasks (trash removal, hose and electrical cable placement) and the continued air cooler internal decontamination via hydrolasing. The second (NI-2) neutron source range detector (see Weekly Status Report of May 16, 1983) verification was completed satisfactorily. Licensee also installed four in-place continuous air samplers, two located on the D-rings, one located near the open stairwell on the 347' elevation and one located on the 305' elevation, but remotely sampling the 282' elevation atmosphere.

### POLAR CRANE STATUS:

Polar crane load testing and operations are still delayed pending resolution of NRC comments on GPU procedures. Resubmittal of these procedures to NRC is expected in early June. The NRC staff has received and is currently reviewing procedures dealing with the use of the 5 ton hoist. Utilization of the 5 ton hoist is being considered on a case-by-case basis.

### DEFUELING PREPARATION ACTIVITIES:

'A' Spent Fuel Pool Refurbishment. Shortly after the March 28, 1979, accident at TMI-2, the licensee, recognizing the need for temporary (contingency) storage of large amounts of accident-generated radioactive water, installed a storage system in the Unit 2 'A' spent fuel pool, located in the fuel handling building. This system was installed in the summer of 1979 and consisted of six stainless steel tanks with a total capacity of 110,000 gallons.

Since that time, all of the accident generated water in the reactor building sump has been processed, eliminating the need for the temporary storage system. In addition, because use of the 'A' spent fuel pool will be required for the eventual removal and temporary storage of fuel and debris from the damaged reactor core, the tanks and associated piping must be removed to allow refurbishment of the pool to its original operational condition.



Engineers assigned to the fuel pool 'A' refurbishment project began establishment of work scope schedules and implementation plans in January of 1983 and implementation is currently underway. The storage tank removal and fuel transporter assembly installation is scheduled to be completed by July 1984.

#### WASTE MANAGEMENT ACTIVITIES:

1. EPICOR II Prefilter (PF) Shipments. One EPICOR II shipment (PF-37) was made on May 17, 1983, from TMI to the Idaho National Engineering Laboratory (Scoville, Idaho). This shipment represents the 39th liner, in a group of 50, that have been sent to INEL over the past year. The DOE and GPU anticipate the remaining 12 prefilters will be shipped to INEL by the end of July 1983. A burial container qualification and licensing program is currently underway at INEL for a specially designed High Integrity Container (HIC) which if accepted for use at a commercial burial facility, could be used in the eventual disposal of the EPICOR II prefilter waste.
2. SDS Liner Shipments. The ninth SDS waste liner (D-10014), in a group of thirteen, was shipped from TMI to the Rockwell Hanford facility (Richland, Washington) on May 17, 1983. This 10-cubic foot stainless steel waste liner, which contained approximately 59,800 curies of radioactivity deposited on a zeolite ion-exchange bed, was shipped in a specially designed type B shipping cask (designed to withstand transportation accidents). As with previous SDS shipments, this waste liner was loaded with catalytic recombiner pellets to maintain non-combustible conditions during the handling and shipment period. Because of scheduled repairs and maintenance on the fuel handling building crane, which is used for SDS cask and liner handling, the next SDS shipment will not occur until late June 1983.
3. Lancaster Sewage Samples. Nine liquid sewage samples and three dried filter cake samples have been delivered to the TMI Program Office by the Lancaster Sewage Treatment Plant for radiochemical analyses. The samples have been taken to the Environmental Protection Agency's Middletown Counting Laboratory for determination of the concentration of gamma emitting radioisotopes and tritium. Preliminary results indicate that the Cesium-137 concentrations were not detectable. Detailed analytical results will be provided in a subsequent weekly status report.

Radioactive cesium (Cs-137) has been present throughout the earth's environment for more than 30 years, ever since the first nuclear weapon tests. Typical background Cs-137 levels in soil in the eastern United States is in the  $1 \text{ E-6 uCi/gm}$  range. Milk in the 1960s had Cs-137 levels in the  $1 \text{ E-7 uCi/ml}$  range with peak actual concentrations much higher depending on local meteorological conditions, e.g. rain and stratospheric air currents during the time immediately following a weapons test. EPA has standards for allowable radioactivity in drinking water. These standards allow up to  $2 \text{ E-7 uCi/ml}$  of Cs-137 and  $2 \text{ E-5 uCi/ml}$  of tritium (H-3).

TMI sewage generated inside the plants protected area is monitored for radioactivity content prior to shipment. On occasion, trace levels of Cs-137 and tritium have been found in a tank load, but these levels are barely detectable being less than the above mentioned EPA approved levels and comparable to background soil samples. Consequently this sewage does not radiologically pose any public health and safety problems.

#### SCHEDULE ACTIVITIES FOR THE COMING WEEK:

- Begin the scheduled maintenance of the fuel handling crane
- Five reactor building entries concentrating mainly on building surface decontamination and general housekeeping

#### PUBLIC MEETINGS:

##### Past Meeting

On May 19, 1983, Lake H. Barrett met with the Concerned Mothers of Middletown to discuss cleanup operations at TMI-2 and NRC security requirements. They expressed their concern that TMI Unit 1 should not be restarted prior to completion of the Unit 2 cleanup.

##### Future Meeting

On June 2, 1983, Lake H. Barrett and William D. Travers will meet with the Concerned Mothers of Middletown to discuss TMI related issues.



## APPENDIX 1

### LIQUID EFFLUENT DATA

#### GPU Nuclear

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

During the period May 13, 1983, through May 19, 1983, 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 five-millionths (0.000005) of a curie of tritium was discharged.

#### Environmental Protection Agency

Lancaster Water Samples:	(7 samples)
Covering period:	April 17 - April 23, 1983
Results:	Gamma scan negative
 TMI Water Samples:	 (6 samples)
Covering period:	April 23 - April 30, 1983
Results:	Gamma scan negative

## APPENDIX 2

### ENVIRONMENTAL DATA

#### EPA Environmental Data

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

<u>Location</u>	<u>April 15, 1983 - April 29, 1983</u> (pCi/m <sup>3</sup> )
Goldsboro	25
Middletown	27
Yorkhaven	Equipment Malfunction
TMI Observation Center	24

- 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 May 11, 1983, through May 19, 1983.

#### NRC Environmental Data

Results from NRC monitoring of the environment around the TMI site were as follows:

- The following are the NRC air sample analytical results for the onsite continuous air sampler:

<u>Sample</u>	<u>Period</u>	<u>I-131</u> (uCi/cc)	<u>Cs-137</u> (uCi/cc)
HP-370	May 12, 1983 - May 19, 1983	<7.4 E-14	<7.4 E-14

### APPENDIX 3

#### SHIPMENTS: RADIOACTIVE MATERIALS/RADIOACTIVE WASTE

- On May 16, 1983, 102 drums containing contaminated laundry from Units 1 and 2 were shipped to Interstate Uniform, New Kensington, Pennsylvania.
- On May 17, 1983, one CNSI 1-13C-II (Type B) shipping cask containing Unit 2 SDS liner No. D10014 was shipped to Rockwell Hanford Operations, Richland, Washington.
- On May 17, 1983, one CNSI 8-120-3 shipping cask containing Unit 2 EPICOR prefilter No. PF-37 was shipped to EG&G Idaho, Inc., Scoville, Idaho.
- On May 18, 1983, 132 drums containing LSA compacted trash from Units 1 and 2 were shipped to U.S. Ecology, Hanford burial site, Richland, Washington.
- On May 20, 1983, 78 drums containing contaminated laundry from Units 1 and 2 were shipped to Interstate Uniform, New Kensington, Pennsylvania.



## APPENDIX 4

### WATER PROCESSING DATA

#### Submerged Demineralizer System (SDS)

SDS processed approximately 12,350 gallons of tank farm flush water during the week. This water had been processed in a previous batch and was used to flush the tank farm in an attempt to reduce dose levels in the "A" spent fuel pool, where the tank farm is located, to facilitate work in the pool. (See "A" Spent Fuel Pool Refurbishment.)

#### SDS Performance Parameters May 16, 1983 to May 18, 1983

<u>Radionuclide</u>	<u>Average Influent (uc/ml)</u>	<u>Average Effluent (uc/ml)</u>	<u>Percent Removed</u>
Cesium 137	$2.8 \times 10^{-1}$	$2.0 \times 10^{-5}$	99.99
Strontium 90	$2.0 \times 10^{-1}$	$2.0 \times 10^{-4}$	99.90

#### EPICOR II

EPICOR II is currently in a shutdown mode.

## APPENDIX 5

### PLANT PARAMETERS

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: Standby Pressure Control System.

Major Parameters (as of 4:00 AM, May 20, 1983) (approximate values)

Average Incore Thermocouples\*: 91°F

Maximum Incore Thermocouple\*: 136°F

RCS Loop Temperatures:

	A	B
Hot Leg	87°F	85°F
Cold Leg (1)	73°F	74°F
(2)	74°F	74°F

RCS Pressure: 64 psig

Reactor Building: Temperature: 68°F

Pressure: -0.2 psig

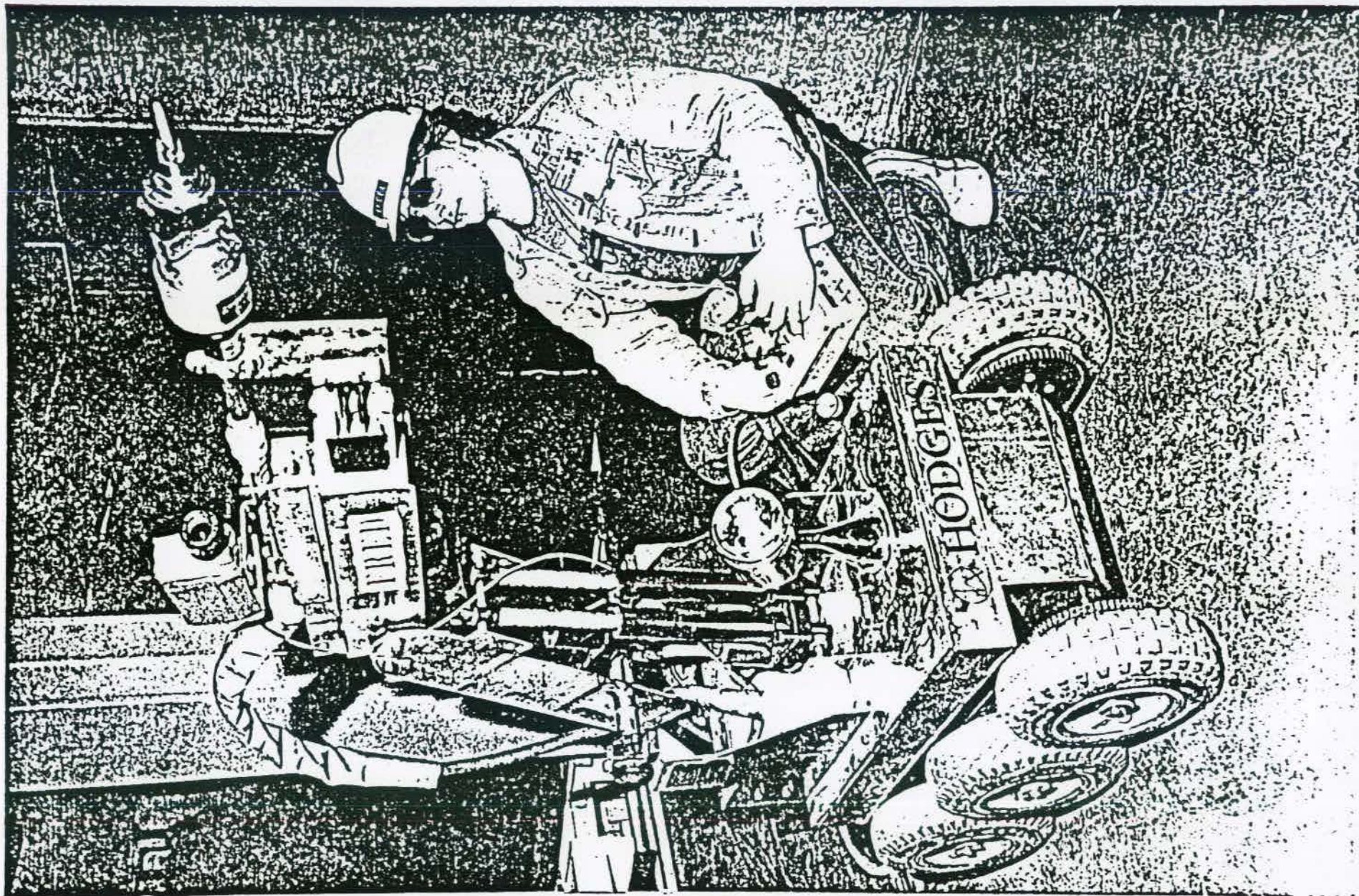
Airborne Radionuclide Concentrations:

2.7 E-7 uCi/cc H<sup>3</sup> (Tritium)  
(sample taken 5/17/83)

1.0 E-9 uCi/cc particulates  
(predominately Cs-137)  
(sample taken 5/17/83)

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





Tom Bengel, a technician at Three Mile Island Unit 2, operates "Fred", a remote-control device being used in decontaminating the TMI-2 auxiliary building.