

April 25, 1983
NRC/TMI-83-026

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: HRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Enclosed is the status report for the period of April 17, 1983, through April 23, 1983. Major items included in this report are:

- Liquid Effluents
- EPA and NRC Environmental Data
- Radioactive Material and Radwaste Shipments
- TMI Occupational Exposure
- Submerged Demineralizer System Status
- EPICOR II Status
- Reactor Building Entries/Polar Crane
- ALARA Meeting Summary
- SDS Liner Shipments
- EPICOR II Prefilter Shipment
- Purification Demineralizer Disposal Status
- Public Meetings

/signed Philip J. Grant for/
Lake H. Barrett
Deputy Program Director
TMI Program Office

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Enclosure: As stated

OFFICE						
URNAME						
DATE						

Harold R. Denton
Bernard J. Snyder

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cc w/encl:
EDO
OGC
Office Directors
Commissioner's Technical Assistants
NRR Division Directors
NRR A/D's
Regional Administrators
IE Division Directors
TAS
EIS
TMI Program Office Staff (15)
PHS
EPA
DOE
RI Division Directors
Public Affairs, RI
State Liaison, RI

OFFICE	TMIPO <i>Jutz</i>	TMIPO	TMIPO	TMIPO	TMIPO		
IRNAME	LGage/lmp	BO'Neill <i>BO</i>	AF Asano <i>Asano</i>	PER <i>PER</i>	LBarrett <i>Barrett</i>		
DATE	4/26/83	4/25/83	4/25/83	4/15/83	4/25/83		

NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

April 17, 1983 - April 23, 1983

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: Standby Pressure Control System.

Major Parameters (as of 6:15 AM, April 22, 1983) (approximate values)

Average Incore Thermocouples*: 91°F

Maximum Incore Thermocouple*: 134°F

RCS Loop Temperatures:

	A	B
Hot Leg	88°F	86°F
Cold Leg (1)	75°F	77°F
(2)	75°F	76°F

RCS Pressure: 66 psig

Reactor Building: Temperature: 70°F

Pressure: -0.1 psig

Airborne Radionuclide Concentrations:

3.0 E-7 uCi/cc H³
(sample taken 4/21/83)

2.3 E-9 uCi/cc particulates
(sample taken 4/21/83)

1. Effluent and Environmental (Radiological) Information

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

During the period April 15, 1983, through April 21, 1983, the effluents contained no detectable radioactivity at the discharge point and individual effluent sources, which originated within Unit 2, contained minute amounts of radioactivity. Calculations indicate that less than one ten-millionth (0.0000001) of a curie of cesium was discharged.

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

2. Environmental Protection Agency (EPA) Environmental Data

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

<u>Location</u>	<u>March 18, 1983 - March 31, 1983</u> (pCi/m ³)
Goldsboro	Insufficient for Analysis
Middletown	21
Yorkhaven	25
TMI Observation Center	31

- The EPA Middletown Office has not received the environmental Kr-85 analytical results for the samples which were taken subsequent to March 31, 1983, 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 April 13, 1983, through April 21, 1983.

3. NRC Environmental Data

- 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-366	April 14 - 20, 1983	<8.5 E-14	<8.5 E-14

4. Licensee Radioactive Material and Radwaste Shipments

- On April 18, 1983, 75 drums of Unit 1 and Unit 2 contaminated laundry were shipped to Interstate Uniform Service, New Kensington, Pennsylvania.
- On April 19, 1983, four containers of equipment used during the Unit 1 Once Through Steam Generator (OTSG) repairs were returned to Westinghouse Electric Corporation (Waltz Mill Site), Madison, Pennsylvania.
- On April 22, 1983, 109 drums containing contaminated clothing from Unit 1 and Unit 2 were shipped to Interstate Uniform Service, New Kensington, Pennsylvania.
- On April 22, 1983, one drum containing Unit 1 OTSG samples (four wool plugs) was shipped to Battelle Memorial Institute, Columbus, Ohio.

5. TMI Occupational Exposure

During the period February 1 - February 28, 1983, licensee TLD (Thermoluminescent Dosimeter) records indicated the following personnel occupational radiation exposure ranges:

Station Exposure Range

<u>Category in Rem</u>	<u>Number of Station Personnel</u>
No Measurable Exposure	1,178
Exposure Less Than 0.1	312
0.1 to 0.25	113
0.25 to 0.5	67
0.5 to 0.75	30
0.75 to 1	18
1 to 2	46
2 to 3	18

Total Plant Exposure (February 1983) - 199.648 Man-Rem*

Total Unit 2 Exposure (February 1983) - 40 Man-Rem*

Unit 2 Reactor Building Entries (TLD Data) During February 1983

Number of Personnel:	239
Highest Whole Body TLD Reading (Rem):	0.364
Total Man-Rem	36.102

*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 0.001 rem (1 millirem), or if two people were to receive a dose of 0.5 rem (500 millirem) each, the total man-rem dose in each case would be one man-rem.

Major Activities

1. Submerged Demineralizer System (SDS). Testing of an SDS tank farm bypass flow path was satisfactorily completed on April 18, 1983. This test involved the routing of approximately 30,400 gallons of reactor building sump water directly from the sump through the SDS process filters without passing through, or staging to, the tank farm. Performance parameters are included in Attachment 1.
2. EPICOR II. EPICOR II processed approximately 29,200 gallons of SDS effluent, and approximately 1,500 gallons of water from the "A" contaminated drain tank during the past week. Performance parameters are included in Attachment 1.

3. Reactor Building Entries/Polar Crane. Only one reactor building entry was completed during the week of April 17, 1983. The licensee has delayed many of the recovery activities in the reactor building, employing his engineering manpower to reevaluate the work procedures for potential safety hazards. The NRC TMI Program Office is continuing to review safety-significant work procedures, including all crane-related operations. A new date for the polar crane load test has not been selected. The delay in the recovery operations in the reactor building has impacted on the start of the next phase of reactor vessel data acquisitions; it is now not expected to start before July 1983.

Two new evaluations for limited use of the polar crane have been completed and approved by the NRC TMI Program Office. They involve the installation of radiation shields around the reactor vessel head structures. The installation has been scheduled for next week. These tasks involve the use of the polar crane as a lifting platform to transfer material from the 305 ft. elevation to the refueling pool. A portable 5-ton hoist, attached to the main hook of the polar crane, will be used to make the actual vertical lifts, while the polar crane bridge and trolley will be used for lateral movements of the load.

Four reactor building entries have been scheduled for the week of April 24, 1983.

4. ALARA Meeting Summary. A meeting was held on April 18, 1983, between the NRC staff, Office of Nuclear Reactor Regulation, and GPU Nuclear. The purpose of the meeting was to allow the management of GPUN to present their program to maintain TMI-2 cleanup occupational radiation exposures as low as reasonably achievable (ALARA).

GPUN provided a description of their management structure and their radiological control organization, which is independent from operations organizations. They also discussed their radiation protection plan and their program to maintain exposures ALARA. Key elements of the ALARA program were discussed, including ALARA work and design reviews by the radiation protection organization, exposure management programs, and a dose reduction program.

The collective occupational exposures to result from the TMI-2 cleanup operations will be influenced by major program decisions. The licensee's programmatic decision-making process and ALARA considerations in that process were discussed. Examples of these decisions were presented, e.g., wet vs. dry head lift, early vs. late head lift, decontamination vs. other dose reduction methods, and source removal vs. shielding. Results of the ongoing three-phase reactor building dose rate reduction program were discussed. Phase I objectives of this program have been met. A data management and analysis organization has been formed to collect, reduce and analyze radiological data and recommend resolutions for management decisions to keep doses ALARA. Periodically, the licensee is to report to the NRC the progress and planned actions on dose reduction and ALARA program issues.

5. SDS Liner Shipments. The licensee is making preparations for shipment of the eighth SDS liner (D20027). This zeolite waste liner, which contains approximately 30,000 curies, is currently being vacuum dried to remove excess water. As with previous shipments, the liner will be loaded with a catalytic recombiner and monitored to demonstrate non-combustible gas conditions. Shipment is tentatively scheduled for April 28, 1983.
6. EPICOR II Prefilter (PF) Shipment. The scheduled shipment of EPICOR II prefilter PF-34, on April 22, 1983, was stopped by the NRC staff because of concerns with the trailer's brake system. On a follow-up inspection by a Pennsylvania certified mechanic, the six brake linings, four roller pins, and one wheel bearing were replaced before the trailer rig was established road-worthy. Notification of this problem was made with the licensee, the designated shipper (DOE), the contracted hauler, the Department of Transportation, and the Commonwealth of Pennsylvania.
7. Purification Demineralizer Disposal Status. The resin sampling of the "A" and "B" purification demineralizer vessels was completed on April 22 and 23, 1983, with the use of a new guide sleeve and mechanical sampling device. Approximately 10 grams of dry resin were collected from the "A" vessel, and approximately 100 cubic centimeters of resin and liquid were collected from the "B" vessel. No liquid was apparent in the "A" vessel, while approximately one foot of liquid was measured above the "B" vessel's resin bed. (Both vessels contain approximately 30 cubic feet of resin material.) The licensee is making preparation for shipment of these samples to Oak Ridge National Laboratory next week.

Future Meeting

On May 2, 1983, Lake H. Barrett will meet with the Concerned Mothers of Middletown to discuss TMI related issues.

ATTACHMENT 1

SDS PERFORMANCE PARAMETERS

<u>Radionuclide</u>	<u>Average Influent</u> (uc/ml)	<u>Average Effluent</u> (uc/ml)	<u>Average DF</u>
Cesium 137	3.7	2.6×10^{-5}	1.4×10^5
Strontium 90	2.4	1.3×10^{-2}	1.8×10^2

EPICOR II PERFORMANCE PARAMETERS

APRIL 14, 1983 to APRIL 21, 1983

<u>Radionuclide</u>	<u>Average Influent</u> (uc/ml)	<u>Average Effluent</u> (uc/ml)	<u>Average DF</u>
Cesium 137	3.9×10^{-5}	$<1.2 \times 10^{-7}$	$>3.2 \times 10^2$
Strontium 90	6.1×10^{-3}	$<8.9 \times 10^{-6}$	$>6.8 \times 10^2$
Antimony 125	1.7×10^{-3}	$<3.5 \times 10^{-7}$	$>4.8 \times 10^3$