

September 12, 1983
HRC/TMI-83-058

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 FOR
September 3 - September 10, 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". Preparations for head lift (early 1984) continued. Core topography data is being analyzed. The first, of six, core debris sample was taken on September 9, 1983.

The major activity this week was the sampling of the core. Other 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 included in the enclosure are:

- Reactor Building Activities
- Polar Crane Status
- Spent Fuel Pool "A" Refurbishment
- Auxiliary and Fuel Handling Building Activities
- Waste Management Activities
- Respirator Decontamination Facility Construction
- Purification Demineralizer Sampling
- 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

original signed by Anthony N. Fasano
//XXXXXXXXXX for//

Lake H. Barrett
Deputy Program Director
TMI Program Office

TDR-5
TMI

OFFICE	Enclosure: As stated					
SURNAME						
DP	8310060181 830912					
R	PDR ADDCK 05000320					
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OFFICE	TMIPD	TMIPD	TMIPD	TMIPD	TMIPD		
SURNAME	KBarr/Imp	JBell	APasaro	EB...	LBarrett		
DATE	9/17/83	9/ /83	9/17/83	9/17/83	9/17/83		

See Comment

ENCLOSURE

REACTOR BUILDING ACTIVITIES:

Four reactor building entries were completed during the week of September 4, 1983. Underhead data gathering to support reactor vessel head removal is proceeding on schedule. Preliminary results are available from the underhead radiation measurements and from the topographical mapping of the core damage. Preliminary analysis of the available data has supported existing plans to remove the reactor vessel head without flooding the refueling canal (dry lift). The present concept for head removal is based on a remote transfer of the head from the reactor vessel to the head storage stand on the refueling floor (347 foot elevation). Assuming a dry lift, head removal is scheduled for late February, 1984.

Radiation measurements were made at discrete elevations above the upper plenum while the reactor coolant system (RCS) water was lowered one foot below the top surface of the plenum. Gamma fields in the 300-700 R/hr range were measured in the space formed by the underside of the reactor vessel head and the top of the plenum. Measurements were also taken down through the upper plenum and down to 6 inches above the rubble bed. Calculations are being performed using the underhead radiation measurements to determine the exposure to operators during the head transfer and during the subsequent shielding of the exposed plenum surface.

Preliminary analysis of the sonar mapping data indicates that the 5 foot deep void, which was found in the center of the core during the closed circuit television inspection in 1982, extends across the entire cross section of the core. The sonar data indicates that there are few, if any, of the original 177 fuel assemblies that remained intact during the accident. The data points plotted from the sonar returns will be used to produce a three dimensional map of the core void.

On September 9, 1983, a core debris sample was taken from the surface of the rubble bed in the center of the core (H-8). Next week five additional debris samples are scheduled to be taken from various depths in the core debris pile.

The last scheduled evolution of the underhead characterization is scheduled to be performed on September 15-16, 1983. Five control rod drive leadscrews will be raised from the fully inserted position inside the reactor vessel to the parked position in the service structure. Area radiation measurements following the leadscrew repositioning will provide data to predict the increase in area dose rates after the remaining 61 leadscrews are parked. The leadscrews are required to be in the parked position as a prerequisite to head lift.

Work will proceed in the reactor building to prepare for the scheduled head lift as underhead characterization data are analyzed. The major prerequisite activities in containment include: reactor vessel head stud detensioning and stud removal, missile shield removal, polar crane load test, refueling canal sealing (to enable contingency flooding), and modification of the internals indexing fixture.

Five reactor building entries are scheduled during the week of September 11, 1983.

POLAR CRANE STATUS:

The TMIPO staff is continuing the review of all licensee documents related to the reactor building polar crane. On September 6, 1983 the Office of Investigation forwarded to the Commission an interim report on the TMI-2 polar crane allegations as discussed in previous Weekly Status Reports. It is expected that this report will be made public in the near future. Items of safety significance on the polar crane that are discussed in this report will be incorporated in the TMIPO staff's docketed safety evaluation on the load test.

PURIFICATION DEMINERALIZERS SAMPLING:

The two 90 ft³ makeup and purification demineralizers were part of the system which is normally used to maintain RCS water quality and chemical limits. These demineralizers became highly contaminated at the time of the March 28, 1979 accident. Preparations are currently underway for the repeat sampling of the "A" demineralizer solid content (see Weekly Status Report April 8, 1983). In April 1983 visual inspections of the "A" and "B" vessels were performed using a fiberoptic scope and a sample of the demineralizer solids was obtained from the "B" vessel. Since the "A" demineralizer was discovered to be dry during the initial inspection and sampling attempt, a new technique was developed. This sampling technique will include filling the vessel with water and sparge with nitrogen to facilitate the sampling procedure. Currently there is a delay in resin sampling of the "A" vessel while a gas phase leak which was discovered during the previous gas sampling, is repaired. Resampling of the "A" vessel is scheduled for late September or early October.

SPENT FUEL POOL "A" REFURBISHMENT:

The removal of concrete shield blocks from the side of the tank farm progressed as planned this week. The charcoal filters and driers used to treat the off-gas from the tank farm vent connections are being packaged in sealed containers in preparation for removal. One filter and two driers have been relocated to allow repair of the lifting lugs on the northernmost shield slabs presently covering the fuel pool tank farm. The filters are scheduled for removal in late September. The lugs are scheduled to be repaired during October. The TMIPO staff has approved the safety evaluation which allows the removal of the 20-ton shield slabs, further tank farm decontamination and tank removal.

The rerouting of piping from the SDS off-gas separator tank bottom to the RCS manifold was completed this week (see Weekly Status Reports August 14, 1983 and August 20, 1983).

AUXILIARY AND FUEL HANDLING BUILDING ACTIVITIES:

Decontamination activities in the auxiliary and fuel handling buildings continued at a reduced pace due to funding limitations.

Construction work on the 328 foot elevation Decontamination Facility Addition (presently approximately 90% complete) resumed. 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.

An Electric Power Research Institute (EPRI) funded project to test and develop a chemical foam decontamination agent is presently underway. The foam system uses a 3000 cfm foamer which produces an expansion factor of 400-500:1. The foam (a mixture of detergent and sulfamic or phosphoric acid) decontamination system may be used as a coating layer or to completely fill a cubicle. Treated areas are then sprayed with a defoaming rinse. Following operational parameter tests a decontamination effectiveness test will be performed using one of the makeup pump cubicles (282 foot elevation). This will be an ongoing project throughout the fall.

WASTE MANAGEMENT ACTIVITIES:

1. SDS Liner Shipments. The last of thirteen high curie loaded submerged demineralizer system (SDS) liner, used to process the accident generated water, was shipped from TMI last week (see Weekly Status Report September 2, 1983). SDS is now being used to process RCS and recycled decontamination water. Liners resulting from the new SDS operations will also be shipped for burial as they changed out the process train. The next SDS liner shipment is expected to occur in October.

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-37 was shipped from TMI to Hanford, Washington on September 7, 1983. Demineralizers F-29, F-42, and F-47 have been dewatered and are being prepared for shipment.

RESPIRATOR DECONTAMINATION/LAUNDRY STAGING FACILITY CONSTRUCTION:

GPUN is presently in the process of constructing a 5,000 square foot respirator decontamination facility. It is located south of the TMI-2 cooling towers by the old interim waste storage modules. The new facility will allow GPUN to assume the respirator decontamination function which is presently performed by a contractor.

The 5000 square feet facility will accommodate areas for respirator inspection, test and maintenance areas as well as respirator cleaning and decontamination equipment. Space is also allotted for offices, storage, files and a large laundry staging area.

Equipment installation is scheduled for October. Testing and final preparations are scheduled to achieve operation near the end of the year.

PUBLIC MEETINGS:

Past Meeting:

The TMI-2 Director, Dr. B. Snyder, provided a briefing to the Maryland Energy Administration in Annapolis, Maryland, on September 6, 1983. Topics covered were the current status of the TMI-2 cleanup, upcoming

technical considerations, the licensee's funding situation, and the licensee's cleanup schedule. The status of the NRC's water studies and the State of Maryland funded Chesapeake Bay study was also discussed.

Future Meetings:

1. On September 13, 1983, Lake H. Barrett will meet with the Concerned Mothers of Middletown to discuss TMI related issues (rescheduled from September 7).
2. On September 16, 1983, the Three Mile Island Unit 2 Advisory Panel will meet with the NRC Commissioners in the Washington office, 1717 H Street, Washington, DC 20555. The public is invited to observe this meeting.
3. 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 2, 1983, through September 8, 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 2.0 E-6 (0.000002) of a curie of Cs-137 was discharged.

Environmental Protection Agency

Lancaster Water Samples:	7 samples
Period Covered:	August 14 - August 20, 1983
Results:	Gamma Scan Negative
TMI Water Samples:	6 samples
Period Covered:	August 20 - August 27, 1983
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 August 19, 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 August 30, 1983 through September 9, 1983.
- Evaluation of the slightly increased level of Kr-85 observed in Middletown and reported in last week's Weekly Status Report is still underway.

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 (uCi/cc)</u>	<u>Cs-137 (uCi/cc)</u>
HP-383	August 31, 1983 - September 9, 1983	<5.8 E-14	<5.8 E-14

APPENDIX 3

RADIOACTIVE MATERIALS/RADWASTE SHIPMENT DATA

- On September 2, 1983, 21 drums of LSA compacted trash from TMI-1 were shipped to Hanford burial site, Richland, Washington.
- On September 7, 1983, one box containing three Sr-90 calibration sources from TMI-1 was mailed to Battelle Laboratories, Columbus, Ohio.
- On September 7, 1983, a NUPAC 14-190m type A cask containing EPICOR II liner F-37 was shipped to U.S. Ecology, Hanford Burial Site, Richland, Washington.
- On September 8, 1983, 17 drums of LSA trash from TMI-1 and TMI-2 were shipped to Hanford burial site, Richland, Washington.
- On September 8, 1983, 58 drums of contaminated laundry from TMI-1 and TMI-2 were shipped to Interstate Uniform Service, New Kensington, Pennsylvania.
- On September 9, 1983, two boxes of LSA noncompactable trash and two liners containing TMI-1 solidified evaporator bottoms were shipped to Hanford burial site, Richland, Washington.

APPENDIX 4

WATER PROCESSING DATA

Submerged Demineralizer System (SDS)

SDS was shutdown during the week for maintenance.

EPICOR II

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 9, 1983) (approximate values)

Average Incore Thermocouples*: 108°F

Maximum Incore Thermocouple*: 134°F

RCS Loop Temperatures:

	A	B
Hot Leg	**	**
Cold Leg (1)	82°F	79°F
(2)	82°F	79°F

RCS Pressure: 0 psig

Reactor Building: Temperature: 81°F

Pressure: -0.3 psig

Airborne Radionuclide Concentrations:

4.7 E-7 uCi/cc H³ (Tritium)
(sample taken 9/7/83)

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

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

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