

July 30, 1984  
NRC/TMI-84-057

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

FROM: Philip J. Grant, Acting Deputy Program Director  
TMI Program Office

SUBJECT: NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT FOR  
July 22, 1984 - July 28, 1984

The reactor vessel head and service structure were removed on July 24, 1984. The internals indexing fixture (IIF) was placed on the reactor vessel flange and filled with water to about 5 feet on July 26, 1984. The shielded work platform was placed on the IIF on July 26, 1984. Several delays were encountered during the procedure. The TMIPO staff provided round-the-clock technical coverage during the head lift activity and to respond to inquiries from the public. NRC Public Affairs personnel from both Headquarters and Region I were available onsite to respond to inquiries from the public and media. The Program Director and Acting Deputy Program Director met with media representatives on July 25 and 27, 1984.

Data from effluent and environmental monitoring systems indicated no plant release in excess of regulatory limits.

Significant items covered in the enclosure are:

- Reactor Building Activities and Head Lift Activities
- Auxiliary and Fuel Handling Building Activities
- Waste Water Management
- TMI Occupational Dose
- Public Meeting

Data summary sheets included in this report are:

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

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ORIGINAL SIGNED BY:  
Philip J. Grant  
Acting Deputy Program Director  
TMI Program Office

*TMI-5*  
*TMI*

Enclosure: As stated

OFFICE					
SURNAME					
DATE					

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SURNAME ▶	Collins <i>mp</i>	Afasano <i>DC</i>	T.S. Chief <i>DC</i>	Plant <i>DC</i>			
DATE ▶	7/30/84	7/30/84	7/30/84	7/30/84			

## ENCLOSURE

### REACTOR BUILDING ACTIVITIES:

The reactor vessel head was transferred to the head storage stand and the internals indexing fixture (IIF) assembly was installed over the open reactor vessel during a continuous 54 hour work effort inside the TMI-2 reactor building. The head lift commenced at 6:25 PM on Tuesday, July 24, 1984 and the work platform was installed on the IIF at approximately midnight on Thursday, July 26, 1984. The task could have been completed in less than 24 hours, however, a series of technical problems prolonged the operation.

Dose rates during the operation were considerably lower than predicted. The head lift cumulative worker exposure, covering the approximately 3 day period, was 15 man-rem. Following reactor vessel head placement on the storage stand and shielding installation over the open vessel, dose rates in the reactor building were restored to pre-head lift levels. Preliminary dose rate measurements directly over the work platform above the IIF and reactor vessel were 8-12 mR/hr. This appears to be the lowest dose area in the reactor building. Airborne activity inside the building did not increase during the head lift activity, and during one of two malfunctions of the polar crane, electricians climbed onto the polar crane to perform repairs without using respiratory protection.

All the major delays involved problems related to the polar crane camera and hoist controls. The head lift start was delayed nine hours for repairs of the zoom feature on a critical closed circuit television camera on the polar crane. No difficulties were encountered with the physical lift of the head and service structure from the reactor vessel flange. The first major delay occurred at midnight on Tuesday, when the travel limit on the polar crane trolley stopped the trolley with the head just short (approximately 4 inches) of the storage stand alignment guide pins. A manual winch was rigged to exert a lateral force, and at noon Wednesday, the 158 ton head assembly was lowered onto the storage stand.

The polar crane hoist down motion failed while workers were disconnecting the crane from the reactor vessel head. Wednesday evening, two electricians trouble shot electrical circuits on the polar crane for 3 hours. Dose rates on the polar crane were less than 100 mR/hr. The polar crane hoist control pendant switch was repaired by 6:00 AM on Thursday. Operations continued smoothly until the work platform was being lowered onto the water filled IIF. At 5:00 PM on Thursday, with the work platform 1 inch above the IIF, the polar crane hoist failed once again. Workers eventually (midnight, Thursday) lowered the work platform manually by expanding turnbuckles on the hoist rigging. The operability of the polar crane has subsequently been restored, however the licensee is currently evaluating the hoist control difficulties and corrective actions.

The next phase of the cleanup will focus on the detailed inspection and removal of the plenum assembly. Plenum removal is expected to occur in early 1985 and the first phase of defueling is scheduled in July 1985.

### AUXILIARY AND FUEL HANDLING BUILDING ACTIVITIES:

Work continued on installation of the makeup and purification demineralizer elution system. Other activities were largely curtailed because of the head lift activities.

WASTE MANAGEMENT ACTIVITIES:

The submerged demineralizer system (SDS) has been shut down since the completion of batch 98 on July 16, 1984.

EPICOR 11 began processing batch 220 from the "B" reactor coolant bleed tank (RCET) on July 26, 1984.

TMI OCCUPATIONAL DOSE:

Licensee TLD (Thermoluminescent Dosimeter) records indicate the following station occupational radiation doses for the period June 1 - 30, 1984.

Unit 1 and Unit 2 Combined Dose Ranges

<u>Category in Rem</u>	<u>Number of Station Personnel</u>
No Measurable Dose	1255
Dose Less Than 0.1	260
0.1 to 0.25	104
0.25 to 0.5	52
0.5 to 0.75	12
0.75 to 1	9
1 to 2	2
2 to 3	0
Above 3	0
<u>Total Doses</u>	<u>Man-Rem</u>
Unit 2 (June)	54.3
Unit 2 (Year-to-Date)	220.9
Units 1 & 2 TLD (June)	61.202
Units 1 & 2 TLD (Year-to-Date)	262.841

PUBLIC MEETING:

On August 9, 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 topics for discussion will be TMI-2 head lift, occupational exposures, and the Panel will comment on EPA's changes to area monitoring. The meeting will be open to the public. Persons that have questions pertaining to the TMI-2 cleanup that would like to have them considered or addressed by the Advisory Panel are asked to contact, in writing, Mayor Arthur Morris, 120 Duke Street, Lancaster, PA 17602. Persons desiring the opportunity to speak before the panel are asked to contact Mr. Thomas Smithgall at 2122 Marietta Avenue, Lancaster, PA 17603 (telephone 717-291-1041).

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 July 20 through July 26, 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  $5.8 \text{ E-}7$  (0.00000058) of a curie of Cs-137 and  $1.3 \text{ E-}6$  (0.0000013) of a curie of gross beta radioactivity were discharged.

Environmental Protection Agency

Lancaster Water Samples:	7 samples
Period Covered:	July 7 - 14, 1984
Results:	Gamma Scan Negative
TMI Water Samples:	7 samples
Period Covered:	July 7 - 14, 1984
Results:	Gamma Scan Negative

APPENDIX 2

ENVIRONMENTAL DATA

NRC Environmental Data

The NRC operated continuous outdoor air sampler at the TMI site did not detect any reactor related radioactivity. The air sampler analysis results are listed below and include that time in which the reactor vessel head lift occurred.

<u>Sample</u>	<u>Period</u>	<u>Volume</u>	<u>I-131&amp;Cs-137</u> <u>(uCi/cc)</u>
HP-429	July 18 - July 27, 1984	327.8 m <sup>3</sup>	<1.1 E-13

APPENDIX 3

RADIOACTIVE MATERIALS/RADWASTE SHIPMENT DATA

- On July 24, 1984, a combined Unit 1 and 2 shipment of radioactively contaminated laundry was sent to Interstate Nuclear Service, Royersford, Pennsylvania.
- On July 26, 1984, a Unit 1 dewatered resin liner was sent to Chem-Nuclear Systems at Barnwell, South Carolina.

APPENDIX 4

PLANT STATUS

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

Available Core Cooling/Makeup Sources:

Standby pressure control (SPC) system  
Reactor coolant bleed tank (RCBT) water transfer system  
Mini decay heat removal (MDHR) system

Major Parameters as of 5:00 AM, July 27, 1984 (approximate values):

Reactor Coolant System:

Loop Temperatures:

	A	B
Hot Leg**	73°F	80°F
Cold Leg (1)	81°F	88°F
(2)	80°F	88°F

Pressure: Open to reactor building atmosphere

Reactor Core:

Average Incore Thermocouples\*\*\*: 98°F  
Maximum Incore Thermocouple\*\*\*: 140°F  
Decay Heat: 16.5 kilowatts

Reactor Building: Temperature: 72°F  
Pressure: -0.10 psig

Airborne Radionuclide Concentrations:

Tritium: 1.6 E-7 uCi/cc H<sup>3</sup> (sample 7/23/84)  
Particulates: 3.1 E-9 uCi/cc (sample 7/25/84)  
predominately Cs-137

\*The reactor vessel head was removed on July 24, 1984 and the internals indexing fixture was placed on the vessel flange on July 26, 1984.

\*\*Since the RCS is drained down below these temperature detectors, they no longer are indicative of RCS temperatures.

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