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September 27, 1982
NRC/TMI-82-059

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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

Enclosed is the status report for the period of September 19 - 25, 1982.
Major items included in this report are:

- Liquid Effluents
- EPA and NRC Environmental Data
- TMI Occupational Exposure
- Radioactive Material and Radwaste Shipments
- Submerged Demineralizer System Status
- EPICOR II
- Reactor Building Entries
- EPICOR II Prefilter Shipment Status
- Public Meetings

-ORIGINAL SIGNED BY-

Lake H. Barrett
Deputy Program Director
TMI Program Office

Enclosure: As stated

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DATE						

Harold R. Denton
Bernard J. Snyder

September 27, 1982

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- NRR A/D's
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SURNAME ▶	LGage/Imp	J. Sebe	MShanbak	Asano	RBellamy	LBarrett	
DATE ▶	9/27/82	9/27/82	9/27/82	9/27/82	9/27/82	9/27/82	

NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

September 19, 1982 - September 25, 1982

Plant Status

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

Available Core Cooling Modes: Mini Decay Heat Removal (MDHR) system.

RCS Pressure Control Mode: RCS is vented to the reactor building.

Major Parameters (as of 0500, September 24, 1982) (approximate values)

Average Incore Thermocouples*: 117°F
Maximum Incore Thermocouple*: 134°F

RCS Loop Temperatures:

	A	B
Hot Leg**	97°F	95°F
Cold Leg (1)	78°F	78°F
(2)	80°F	79°F

Pressure: The reactor coolant system is vented to the reactor building.

Reactor Building: Temperature: 72°F
Pressure: -0.35 psig
Airborne Radionuclide Concentrations:

2.1 E-6 uCi/cc H³
(sample taken 9/10/82)

2.5 E-9 uCi/cc particulates
(sample taken 9/10/82)

Kr⁸⁵ concentrations are below the
lower limit of detection (LLD):
6.2 E-6 uCi/cc

Kr⁸⁵ will not be reported again
unless it exceeds LLD

1. *Effluent and Environmental (Radiological) Information

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

During the period September 17, 1982, through September 23, 1982, the effluents contained no detectable radioactivity at the discharge point although individual effluent sources which originated within Unit 2 contained small amounts of radioactivity. Calculations indicate that less than 0.00002 (two hundred thousandths) of a curie of cesium were discharged.

*Uncertainties exist as to the exact location and accuracy of these readings.
**The primary water level is below the hot leg temperature sensors.

2. Environmental Protection Agency (EPA) Environmental Data

- The EPA Middletown Office has not received the environmental Kr-85 for the samples which were taken subsequent to August 27, 1982, 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 September 15, 1982, through September 23, 1982.

3. 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> <u>(uCi/cc)</u>	<u>Cs-137</u> <u>(uCi/cc)</u>
HP-337	September 15 - 22, 1982	<6.5 E-14	<6.5 E-14

4. TMI Occupational Exposure

Licensee TLD (Thermoluminescent Dosimeter) records indicate the following Unit 2 occupational radiation exposures for 1982:

August 1982	41 man-rem
Total 1982 (January-August)	230 man-rem

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.

5. Licensee Radioactive Material and Radwaste Shipments

- On September 20, 1982, 61 drums of contaminated laundry were shipped to the Interstate Uniform Laundry, New Kensington, Pennsylvania.
- On September 20, 1982, a Unit 1 solidified evaporator bottom and a metallic box containing Unit 1 noncompactable trash were shipped to the Barnwell Waste Management Facility, Barnwell, South Carolina.
- On September 21, 1982, a Unit 1 liquid sample from the "A" decay heat removal system was mailed to the Radiation Management Corporation, Philadelphia, Pennsylvania.

- On September 24, 1982, two Unit 1 solidified evaporator bottoms (Hittman liners) were shipped to U. S. Ecology (Hanford Burial Site), Richland, Washington.
- On September 24, 1982, 71 drums of Unit 1 and Unit 2 contaminated laundry were shipped to the Interstate Uniform Laundry, New Kensington, Pennsylvania.
- On September 24, 1982, one drum containing miscellaneous Unit 2 Reactor Building electrical components was shipped to EG&G Idaho, Inc., Scoville, Idaho.

Major Activities

1. Submerged Demineralizer System (SDS). Staging of 30,500 gallons of reactor building sump water in the SDS tank farm began on September 24, and was completed on September 27, 1982. Processing of this water (Batch No. 36) is scheduled to begin on September 27, and to be completed on October 2, 1982.
2. EPICOR II. The EPICOR II system, presently shutdown because no water is ready for processing, is scheduled to be reactivated on September 29, 1982 and to begin processing SDS effluent (Batch No. 36).
3. Reactor Building Entries. Reactor building entries were conducted on Monday, Wednesday, and Friday, September 20, 22, and 24, 1982. Decontamination of the reactor building dome continued during the entries this week. The dome decontamination is the first phase of an ongoing decontamination effort to reduce loose surface contamination on exposed reactor building surfaces. High pressure, hot water spray will be used as the basic decontamination technique in the reactor building during subsequent phases of the decontamination. One to two hundred thousand gallons of previously processed water will be used. The water will collect in the reactor building sump for reprocessing through the Submerged Demineralizer System. Following the water spray, selected surfaces will be covered with a strippable coating to control contamination and to reduce airborne activity.

The decontamination will be performed over a period of several months. It is anticipated that three entries per week will be conducted during this period. It is anticipated that the reactor building purge will be operated almost continuously during this period to maintain building temperatures at about 60°F to minimize heat stress on personnel working inside. Continuous operation of the purge is not expected to significantly increase offsite releases. Radioactive particulate material in the purge air flow are effectively removed by passing through three sequential sets of filters. The first filter, called a roughing filter, is similar to a home furnace filter: it keeps the two downstream filters physically clean. The second and third filters are called HEPA (high efficiency particulate air) filters: they remove essentially all of the remaining particulate material in the air flow. (Two HEPA filters are used to provide system redundancy.) To date, there has been no indication of increased particulate releases during reactor building entry purges.

Krypton 85 has been reduced to below detectable limits inside the reactor building; its environmental impact resulting from a continuous purge is insignificant.

Tritium releases are expected to increase as relatively dry ambient air is cycled through the reactor building at approximately 25,000 cubic feet per minute by the purge system. The moisture content of the air will be increased by evaporation of the sump and the high pressure spray water (in which the tritium content will be approximately one microcurie per milliliter). The tritiated vapor will be released to the environment with the purge discharge. It is estimated that approximately 10 curies of tritium will be released each month. The conservatively calculated maximum offsite dose resulting from the tritium released will be minimal: approximately 0.005 mrem/yr. (This incremental dose is equivalent to spending one day in a stone building instead of a wooden building.)

The polar crane refurbishment and other recovery activities will be conducted in parallel with the reactor building decontamination during the entries.

4. EPICOR II Prefilter Shipment Status

Preparations are continuing for the shipment of several EPICOR II prefilter liners during the month of October 1982. Currently, PF-2 and PF-6 have been sampled, inerted with nitrogen gas and stored onsite at the solid waste storage facility (SWSF) awaiting shipment to Idaho National Engineering Laboratory (INEL). The PF-6 liner gas analysis indicated 99% nitrogen, 0.4% oxygen and non-detectable (<0.1%) hydrogen at approximately 3.5 psi negative pressure. The slight negative pressure reading was apparently due to the radiolytic oxygen depletion mechanism in the EPICOR II prefilters. The HN-200 type B shipping cask is scheduled to arrive at the TMI site on October 1 and liner PF-2 is scheduled for shipment to INEL on October 5, 1982.

The PF-6 liner, which contains approximately 170 curies of fission products, will be placed in the existing SN-1 type B shipping cask (designed to withstand transportation accidents) to determine if this relatively low curie liner can meet the DOT/NRC dose rate requirements. This demonstration is expected to be completed by October 1, 1982.

Future Meetings

1. On Wednesday, September 29, 1982, Lake Barrett will meet with the Concerned Mothers of Middletown to discuss the cleanup efforts for TMI Unit 2 and the restart of Unit 1.
2. On Tuesday, September 28, 1982, Lake Barrett will participate in a public meeting sponsored by the Hershey League of Women Voters to discuss TMI Unit 2 cleanup issues.