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October 8, 1982  
NRC/TMI-82-062

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 October 3 - October 8, 1982.  
Major items included in this report are:

- Liquid Effluents
- EPA and NRC Environmental Data
- Radioactive Material and Radwaste Shipments
- Submerged Demineralizer System Status
- EPICOR II
- Reactor Building Entries
- EPICOR II Prefilter Shipment Status
- Groundwater Monitoring Program
- TMI Aerial Radiological Survey
- Public Meetings

Original signed by  
Lake H. Barrett

Lake H. Barrett  
Deputy Program Director  
TMI Program Office

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Enclosure: As stated

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SURNAME						
DATE						

Harold R. Denton  
Bernard J. Snyder

-2-

October 8, 1982

cc w/encl:

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DATE	10/8/82	10/8/82	10/ /82	10/8/82	10/8/82	10/8/82	

# NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

October 3, 1982 - October 8, 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, October 8, 1982) (approximate values)

Average Incore Thermocouples\*: 113°F

Maximum Incore Thermocouple\*: 130°F

### RCS Loop Temperatures:

	A	B
Hot Leg**	94°F	93°F
Cold Leg (1)	77°F	76°F
(2)	78°F	78°F

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

Reactor Building: Temperature: 75°F

Pressure: -0.20 psig

Airborne Radionuclide Concentrations:

1.8 E-6 uCi/cc H<sup>3</sup>  
(sample taken 10/4/82)

3.4 E-10 uCi/cc particulates  
(sample taken 10/1/82)

Kr<sup>85</sup> concentrations are below the  
lower limit of detection (LLD):  
6.2 E-6 uCi/cc

## 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 October 1, 1982, through October 7, 1982, the effluents contained no detectable radioactivity at the discharge point and individual effluent sources, which originated within Unit 2, contained no detectable radioactivity.

\*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 September 10, 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 October 1, 1982 through October 7, 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 (uCi/cc)</u>	<u>Cs-137 (uCi/cc)</u>
HP-339	September 27 - October 6, 1982	<6.6 E-14	<6.6 E-14

## 4. Licensee Radioactive Material and Radwaste Shipments

- On October 4, 1982, two Unit 1 solidified evaporator bottoms were shipped to U.S. Ecology (Hanford Burial Site), Richland, Washington.
- On October 5, 1982, two Unit 1 liquid samples were mailed to Radiation Management Corporation, Philadelphia, Pennsylvania.
- On October 6, 1982, two Unit 1 solidified evaporator bottoms were shipped to U.S. Ecology, Richland, Washington.
- On October 6, 1982, five Unit 1 spent fuel pool samples (filter paper swipes) were shipped to Babcock and Wilcox, Lynchburg Research Center, Lynchburg, Virginia.
- On October 7, 1982, one Unit 2 EPICOR 11 prefilter (PF-2) was shipped to EG&G Incorporated, Idaho Falls, Idaho.
- On October 7, 1982, two Unit 1 solidified evaporator bottoms were shipped to U.S. Ecology, Richland, Washington.

## Major Activities

1. Submerged Demineralizer System (SDS). SDS completed processing Batch No. 36 on October 3, 1982 and began processing Batch 37 (approximately 5,000 gallons of miscellaneous letdown water). Parameters for Batch 36 are shown in Attachment 1.

2. EPICOR II. The EPICOR II system continued to process SDS effluent during the past week. Latest parameters for the system are shown in Attachment 1.
3. Reactor Building Entries. Reactor building entries were conducted on Monday, Wednesday, and Friday, October 4, 6, and 8, 1982. Polar crane decontamination, including manual scrubbing with a mild detergent, was the predominant activity inside the reactor building. A brief inspection of components and wall surfaces below the 305 ft. elevation was conducted using a closed circuit television camera. A "dirt ring," showing the basement high-water level, was visible on the D-ring wall. The three-entry-per-week schedule is expected to continue during the reactor building decontamination effort.
4. EPICOR II Prefilter Shipment Status. On October 7, 1982, the third in a group of 49 EPICOR II prefilters (PF-2) was shipped from TMI to the Idaho National Engineering Laboratory (INEL) in Scoville, Idaho. The PF-2 liner and shipping cask (CNS-120-3) were inerted with nitrogen as an added safety precaution to ensure that no combustible gases will exist during shipment. The hydrogen-oxygen composition in the liner will be maintained at <2.5% hydrogen and <0.5% oxygen. Two EPICOR II prefilters (PF-6 and PF-7) have been prepared for shipment and are awaiting the availability of a type B shipping cask. (Because of a drain plug removal problem, the HN-200 cask will not be available until the week of October 11, 1982.) Currently, GPU is preparing prefilter PF-8 for sampling and inerting.
5. Groundwater Monitoring Program. Periodic sampling of TMI groundwater began in January 1980 in an effort to detect any potential leakage from the contaminated water in the basement of the reactor building. When the submerged demineralizer system began processing reactor building water, the basement contained approximately 600,000 gallons of highly radioactive water (>150 uCi/ml). There was a concern, if the reactor building leaked, that the leakage could contaminate Three Mile Island groundwater. However, the monitoring program has accumulated data to indicate that there was no leakage from the reactor building. The program did identify some groundwater contamination which resulted from leakage from the borated water storage tank (BWST).

The possibility of groundwater contamination from the potential sources of leakage has been reduced. Except for a periodic addition of water from on-going reactor building decontamination, the water in the reactor building has been removed. A leakage collection trough and more sensitive level indicating equipment have been added to the BWST. The effectiveness of these measures will continue to be evaluated by the groundwater monitoring program.

Attachment II includes a sketch of the groundwater sampling locations. The most recently recorded tritium concentration and the highest recorded tritium concentration are noted at each location. Pre-TMI monitoring data indicate that surface water, drinking water and precipitation in the

TMI area will contain an average of 300 pCi/L of tritium with values as high as 600 pCi/L within the expected range. The highest TMI groundwater contamination was recorded in test boring 17 on March 23, 1982 ( $1.1 \times 10^6$  pCi/L). Test boring 17 is in an area considered as restricted and the maximum permissible concentration (MPC) for tritium in restricted areas is 0.1 uCi/ml ( $1 \times 10^8$  pCi/L).

Tritium was the predominant radioisotope detected in the groundwater. However, sporadic trace levels of radioactive cesium have been detected in test boring 2. On June 1, 1982, 11 pCi/L of antimony-125 was detected in test boring 17. (This antimony concentration was just above the lower limit of detection.) Subsequent samples from test boring 17 did not contain any detectable antimony.

6. TMI Aerial Radiological Survey. An aerial radiological survey of the Three Mile Island area has been tentatively scheduled to begin Thursday, October 21, 1982. The survey will be performed by EG&G under contract to the Department of Energy and is expected to require four to five days of low level helicopter overflight (~250 ft. altitude) of a five square mile area. This survey is a follow-up to the EG&G aerial radiological survey of TMI conducted during August 1976.

Future Meeting

1. On October 12, 1982, Lake H. Barrett will meet with the Concerned Mothers of Middletown to discuss TMI-related issues.
2. On November 9, 1982, the NRC commissioners will hold a public meeting to discuss the potential restart of TMI Unit No. 1. The format for the meeting is discussed in the attached press release and order (Attachment III). Further details regarding location and local contact for public statements will be included in press releases when they become available.

ATTACHMENT I

SDS PERFORMANCE FOR BATCH NUMBER 36

<u>Radionuclide</u>	<u>Average Influent (uc/ml)</u>	<u>Average Effluent (uc/ml)</u>	<u>Average DF</u>
Cesium 137	$2.5 \times 10^1$	$1.0 \times 10^{-4}$	$2.5 \times 10^5$
Strontium 90	5.8	$7.9 \times 10^{-4}$	$7.4 \times 10^3$

EPICOR II PERFORMANCE  
Batch 143

<u>Radionuclide</u>	<u>Average Influent (uc/ml)</u>	<u>Average Effluent (uc/ml)</u>	<u>Average DF</u>
Cesium 137	$7.4 \times 10^{-5}$	$3.75 \times 10^{-7}$	$1.97 \times 10^2$
Strontium 90	$1.2 \times 10^{-4}$	$9.3 \times 10^{-6}$	$1.29 \times 10^1$

# TEST BORING H<sup>3</sup> CONCENTRATIONS

