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December 6, 1982
NRC/TMI-82-074

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 November 21 through December 4, 1982*. Major items included in this report are:

- Liquid Effluents
- Airborne Effluents
- EPA and NRC Environmental Data
- NRC TLD Results
- TMI Occupational Exposure
- Radioactive Material and Radwaste Shipments
- Submerged Demineralizer System Status
- EPICOR II Status
- Reactor Building Entries
- Fire Hazards Evaluation
- Control Rod Drive Mechanism Status
- SDS Liner Shipment Preparations

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Harold R. Denton
Bernard J. Snyder

December 6, 1982

- EPICOR II Prefilter Shipment
- Groundwater Monitoring
- Public Meetings

*Because of the Thanksgiving holiday, no report was issued on November 29.

Original signed by
Lake H. Barrett

Lake H. Barrett
Deputy Program Director
TMI Program Office

Enclosure: As stated

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

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NAME ▶	LGage:js	<i>John</i>	BONEill <i>for</i>	AFasano	RBellamy	LBarrett
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NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

November 21, 1982 - December 4, 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.

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

Major Parameters (as of 0500, December 3, 1982) (approximate values)

Average Incore Thermocouples*: 111°F

Maximum Incore Thermocouple*: 131°F

RCS Loop Temperatures:

	A	B
Hot Leg**	80°F	80°F
Cold Leg (1)	99°F	71°F
(2)	95°F	78°F

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

Reactor Building: Temperature: 67°F

Pressure: -0.2 psig

Airborne Radionuclide Concentrations:

1.3 E-6 uCi/cc H³
(sample taken 12/2/82)

1.8 E-9 uCi/cc particulates
(sample taken 12/3/82)

1. Effluent and Environmental (Radiological) Information

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

During the period November 21, 1982, through December 2, 1982, the effluents contained no detectable radioactivity at the discharge point although individual effluent sources which originated within Unit 2 contained minute amounts of radioactivity. Calculations indicate that less than one millionth (0.000001) of a curie of cesium was 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. Airborne Effluents

Airborne releases to the environment, as measured by licensee installed monitors at discharge stacks, are listed below. These releases were well within regulatory limits.

October 1982

	<u>Unit II</u>	<u>EPICOR II</u>
Noble Gases (Ci)	3.22×10^1	1.52×10^1
Particulates (Ci)	1.13×10^{-7}	1.22×10^{-7}
Tritium (Ci)	1.17×10^1	1.33×10^{-1}

3. Environmental Protection Agency (EPA) Environmental Data

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

<u>Location</u>	<u>October 26, 1982 - November 12, 1982</u> (pCi/m ³)
Goldsboro	21
Middletown	25
Yorkhaven	25
TMI Observation Center	25

-- The EPA Middletown Office has not received the environmental Kr-85 results for the samples which were taken subsequent to November 12, 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 November 17, 1982 through December 2, 1982.

4. NRC Environmental Data

Results are from NRC monitoring of the environment around the TMI site.

-- 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-345	November 18 - November 24, 1982	$<8.2 \text{ E-14}$	$<8.2 \text{ E-14}$
HP-346	November 24 - December 2, 1982	$<6.5 \text{ E-14}$	$<6.5 \text{ E-14}$

5. NRC TLD Results

The NRC TLD (Thermoluminescent Dosimeter) Environmental Direct Radiation Monitoring Network at TMI consists of 59 offsite locations. Two sets of TLDs are placed at each location. Each set contains two lithium borate and two calcium sulfate phosphors. Both sets are read on a quarterly basis. In January 1982, eight onsite NRC locations were added to the monitoring network. The onsite TLDs are used for comparison with licensee onsite TLD monitoring results.

During January through March 1982, the NRC offsite locations provided readings that indicated gamma radiation was between 0.15 - 0.26 mR/day. These dose rates are consistent with natural background radiation in the TMI area. These results of the NRC Direct Radiation Monitoring Network were reported in NUREG-0837, Volume 2, No. 1.

6. TMI Occupational Exposure

Licensee TLD records indicate the following Unit 2 occupational radiation exposures for 1982:

October 1982	38 man-rem
Total 1982 (January-October)	297 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.

7. Licensee Radioactive Material and Radwaste Shipments

- On November 23, 1982, one box containing two Unit 1 air sample papers was mailed to Radiation Management Corporation, Philadelphia, Pennsylvania.
- On November 24, 1982, 96 drums of contaminated laundry from Units 1 and 2 were shipped to Interstate Uniform Services, New Kensington, Pennsylvania.
- On November 29, 1982, one box containing five Unit 1 liquid samples (250 milliliter samples) was mailed to Nuclear Water and Waste Technology, San Jose, California.
- On November 29, 1982, one Unit 2 EPICOR II prefilter (PF-47) was shipped to the Idaho National Engineering Laboratory, Scoville, Idaho.

- On November 30, 1982, 65 drums of contaminated laundry from Units 1 and 2 were shipped to Interstate Uniform Services, New Kensington, Pennsylvania.
- On December 1, 1982, an EPICOR II prefilter (PF-27) was shipped to the Idaho National Engineering Laboratory, Scoville, Idaho.
- On December 2, 1982, one box containing four Unit 2 makeup filter housing scrape samples was mailed to Science Applications Inc., Rockville, Maryland.
- On December 2, 1982, one drum containing a Unit 2, nine inch leadscrew section was shipped to Babcock and Wilcox, Lynchburg, Virginia.
- On December 2, 1982, one drum containing another Unit 2, nine inch leadscrew section was shipped to Battelle Pacific Northwest Laboratories, Richland, Washington.

Major Activities

1. Submerged Demineralizer System (SDS). The SDS is presently in a shutdown condition. The next batch of water to be processed will be reactor coolant system (RCS) water. The RCS feed and bleed process of staging the water began December 1, 1982 and is scheduled to continue for 10 days after which its processing will begin. This batch, of 40,000 gallons, will be the sixth batch of RCS water to be processed; it is SDS Batch No. 39.
2. EPICOR II. The EPICOR II system is presently in a shutdown condition.
3. Reactor Building Entries. Four reactor building entries were conducted in the week following the Thanksgiving holiday. In the polar crane refurbishment program, the four slow speed bridge drive motors were mechanically uncoupled from the load and electrically activated. The motors operated normally and appeared to be satisfactory for driving the polar crane bridge.

The reactor building decontamination program is continuing in parallel with polar crane refurbishment. To date, the decontamination program has not significantly decreased area gamma radiation levels. The effectiveness of the decontamination effort in reducing airborne contamination and loose surface contamination will be determined after all surfaces are flushed. Following a directional radiation survey and analysis of radiation sources inside the reactor building, the licensee outlined a long-term dose reduction program which includes decontamination, source removal, and shielding. The efforts to be carried out during the week of December 5, 1982 will include continued decontamination and polar crane refurbishment.

4. Fire Hazards Evaluation. As part of the NRC evaluation of the plant fire hazards and fire protection a reactor building entry, which included an NRC employee and a contractor, was made on December 2, 1982. The entry team traversed all levels of the building except the highly contaminated basement, observing the condition of fire hoses and fire extinguishers and looking for possible fire hazards created by material and equipment that had been brought into the building. No significant hazards or fire protection equipment deficiencies were identified. The inspection will be documented in a subsequent Unit 2 routine safety inspection report.
5. Control Rod Drive Mechanism (CRDM) Status. The two nine-inch segments of leadscrew "8H" were shipped offsite for analysis on December 2, 1982. One segment was shipped to Babcock and Wilcox in Lynchburg, Virginia and the other to Battelle Northwest, Richland, Washington.
6. SDS Liner Shipment Preparations. The licensee began the recombiner demonstration test on a spent SDS liner. This test, which was described in the November 22 Weekly Status Report, is part of the pre-shipment requirement to demonstrate that sufficient catalyst will exist to recombine the hydrogen and oxygen gas produced by the radiolysis of residual water remaining in the liner. The 10 cubic foot spent SDS liner, which contains over 112,000 curies (predominantly Cs-137, Sr-90, and their daughter products) will be monitored and sampled for approximately 14 days (twice the expected shipment period) to ensure that vacuum conditions are maintained and combustible gas mixtures are not generated. Assuming the demonstration test meets all acceptance criteria, the first recombiner-loaded SDS liner will be shipped to Richland, Washington during the week of December 20, 1982.
7. EPICOR II Prefilter Shipment. EPICOR II prefilter liners PF-47 and PF-27 were shipped from TMI to the Idaho National Engineering Laboratory (INEL) on November 29 and December 1, 1982, respectively. These nitrogen inerted liners were the tenth and eleventh in a group of 49 EPICOR II prefilters to be shipped to INEL. The licensee is making preparations for sampling and inerting PF-49. One EPICOR shipment is scheduled for next week.
8. Groundwater Monitoring. The TMI groundwater monitoring program was instituted to detect possible radioactive liquid leakage from TMI into the ground. Since the monitoring program commenced in January 1980, tritium has been the only radioisotope detected consistently in the groundwater. It was detected adjacent to the TMI reactor facility (within approximately 100 feet). Tritium concentrations in the groundwater have ranged from background (approximately 300 pCi/l) to 1.1×10^6 pCi/l. In all cases the tritium concentrations have been below the maximum permissible concentrations for restricted areas. Periodically, trace concentrations of radioactive cesium and strontium have been detected in some of the monitoring locations. When detected, the cesium and strontium concentrations were very close to the laboratory lower limit of detection and typically, the radioactivity was not seen when the sample was re-analyzed or when the monitoring location was resampled. The most recent samples taken from the groundwater monitoring locations indicate that tritium concentrations in the groundwater have remained in the same range as reported in previous weekly status reports.

Past Meeting

1. On November 22, 1982, Lake H. Barrett met with the Concerned Mothers of Middletown to discuss TMI related issues. They expressed their concern that TMI Unit 1 should not be restarted prior to completion of the Unit 2 cleanup.
2. On December 1, 1982, Lake H. Barrett spoke to the New England Chapter of Health Physics Society on TMI related issues.
3. On December 3, 1982, Lake H. Barrett met with Friends and Family of TMI to discuss various TMI related issues.

Future Meetings

1. On January 17, 1982, Lake H. Barrett will meet with Friends and Family of TMI to discuss various TMI issues.
2. During the ASME Week activities January 17-20, 1982, in Sarasota, Florida, Ronald R. Bellamy will speak on TMI related issues.