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August 9, 1982
NRC/TMI-82-049

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 August 1 - 7, 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
- Core Inspection
- Groundwater Monitoring
- EPICOR II Prefilter Shipment
- Purification Demineralizer Inspection
- Public Meetings

Original signed by
Lake H. Barrett

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Lake H. Barrett
Deputy Program Director
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Enclosure: As stated

OFFICE							
SURNAME							
DATE							

Harold R. Denton
Bernard J. Snyder

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August 9, 1982

cc w/encl:

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DATE	8/9/82	8/9/82	8/9/82	8/9/82	8/9/82	8/9/82

NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

August 1, 1982 - August 7, 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 0550, August 6, 1982) (approximate values)

Average Incore Thermocouples: 122°F

Maximum Incore Thermocouple: 140°F

RCS Loop Temperatures:

	A	B
Hot Leg	104°F	103°F
Cold Leg (1)	86°F	84°F
(2)	88°F	85°F

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

Reactor Building: Temperature: 87°F
Pressure: -0.17 psig
Airborne Radionuclide Concentrations:

5.3 E-7 uCi/cc H³
(sample taken 8/3/82)

5.2 E-6 uCi/cc Kr⁸⁵
(sample taken 7/26/82)

4.5 E-9 uCi/cc particulates
(sample taken 7/28/82)

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 dated February 27, 1980.

During the period July 30, 1982, through August 5, 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 one hundred-thousandths (0.00001) of a curie of tritium were discharged.

2. Environmental Protection Agency (EPA) Environmental Data

- The EPA Middletown Office has not received the environmental Kr-85 analytical results for the samples which were taken July 9, 1982, through July 23, 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 July 28, 1982, through August 5, 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-330	July 28, 1982 - August 4, 1982	<6.4 E-14	<6.4 E-14

4. Licensee Radioactive Material and Radwaste Shipments

- On August 2, 1982, and on August 5, 1982, 75 drums and 71 drums of contaminated laundry were shipped to Interstate Laundry, New Kensington, Pennsylvania.
- On Friday, August 6, 1982, one Unit 2 reactor building sludge sample and four Unit 2 SDS (Submerged Demineralizer System) samples were shipped to Oak Ridge National Laboratory, Oak Ridge, Tennessee.
- On Friday, August 6, 1982, one Unit 2 reactor building sludge sample was shipped to Westinghouse Hanford Co., Richland, Washington.

Major Activities

1. Submerged Demineralizer System (SDS). The SDS remains shutdown due to a faulty feed pump. The projected completion date for replacement of the pump has been changed to Monday, August 12, 1982. When the SDS becomes operational, approximately 40,000 gallons of reactor building sump water will be processed.
2. EPICOR II. The EPICOR II system is currently shutdown on a standby status.

3. Core Inspection. One leadscrew on the core periphery and one leadscrew midway from the periphery and the core center were removed from the TMI-2 reactor. Initial attempts to remove a peripheral leadscrew (8P) were unsuccessful. The leadscrew could not be uncoupled from the control rod spider assembly. An alternate peripheral leadscrew (8B) on the opposite side of the core was eventually removed. Radiation levels in the proximity of both leadscrews were in excess of 50 R/hr. The maximum detected beta dose was 2000 Rad/hr. The radiation levels in proximity of the center most leadscrew which was removed on July 21, 1982, were less than 10 R/hr. Wet black crud was observed falling off the 8B leadscrew as the leadscrew was being removed.

The closed circuit television inspection of the core periphery was limited to two spider assemblies (top of control rod end pieces). The camera could not be maneuvered under the spider assemblies and the condition of the fuel assemblies in that region of the core could not be ascertained.

The inspection of the core between the periphery and the center (control rod 9E) revealed a rubble bed approximately five feet below the top of the core region. This was the approximate depth of the rubble bed in the center of the core. Intact fuel pellets and pellet retaining springs were visible on top of the rubble. Individual intact non-fuel bearing rods were seen protruding from the rubble bed toward the top of the core. Some fuel assembly upper end fittings appeared attached to the underside of the plenum assembly. One end fitting was damaged. Fuel rod stubs protruded downward from some of the upper end fittings. There appeared to be some melting of structural materials in the area of the upper end fittings.

The procedure to probe the bottom of the rubble bed with a metal rod was deferred after the initial part of the inspection required more time than anticipated. The licensee is evaluating the inspection findings before deciding on the next course of action. The primary system remains depressurized and vented to the reactor building.

4. Groundwater Monitoring. Tritium activity in the Three Mile Island groundwater detected as part of the groundwater monitoring program is listed in Attachment 1. The recorded activity is based on the latest available analysis results of samples taken in June and July 1982. Samples in the vicinity of the borated water storage tank (BWST) still show the increased tritium activity that apparently resulted from a BWST pipe leak which occurred during the winter when an instrument line froze and cracked. The maximum detected groundwater tritium concentration following the pipe leak was approximately one million picocuries per liter.

Water samples from test boring 2 in June and July 1982, contained trace amounts of cesium 137. The maximum cesium concentration detected during this period was 10 picocuries per liter. Small concentrations of cesium have been detected periodically in test boring 2.

5. EPICOR II Prefilter Shipment. The first of 49 EPICOR II prefilters (PF-3) is scheduled for shipment to the Battelle Columbus Laboratory (BCL) on August 11, 1982. The licensee is currently measuring hydrogen gas generation rates to demonstrate that nonflammable conditions will exist during all periods of PF-3 handling and transport. Gas measurements indicate that hydrogen will not exceed 3.5% and oxygen will be less than 1.0% during shipment. The licensee plans to inert both the PF liner and shipping cask with nitrogen gas as an added safety precaution. A type B shipping cask (designed to withstand transport accidents) will be provided by the Department of Energy for PF-3 transport to BCL. The licensee will demonstrate compliance with all applicable DOT and NRC transport requirements prior to shipment from the TMI site.

6. Purification Demineralizer Inspection. On August 3 and 6, 1982, the remotely operated System In-Service Inspection (SISI) robot entered the auxiliary building purification demineralizer cubicles ("A" and "B") to visually monitor conditions and retrieve information on dose fields, loose surface contamination, temperatures on vessel walls, etc. The dose fields ranged from a general area of 2-5 R/hr at the doorway entering the cubicle to 1,125 R/hr at approximately one foot from the bottom of the vessel. The cubicles were generally clean of debris and low levels of loose surface contamination were identified. Boric acid residue was noted in the cubicles near the floor drains. The temperatures on the external walls of the demineralizers were at ambient conditions (~84°F).

The licensee is continuing preparations for measuring conditions within the purification demineralizer vessels. These 100 ft³ stainless steel vessels contain up to 50,000 curies of mixed fission products deposited on organic ion-exchange resins. Measurement of the internal vessel pressure is scheduled the week of August 9, 1982. Plans for gas and liquid sampling of the inlet and outlet lines is scheduled to begin in September. The condition of the ion-exchange media (viz., slucibility vs. non-fluid characteristics) within the vessels will dictate the methodology used in the disposition of this highly radioactive waste.

Past Meetings

During the week of August 2 - 6, 1982, Ronald R. Bellamy presented a paper entitled "HEPA Filter Experience During TMI-2 Reactor Building Purges" at the 17th DOE Nuclear Air Cleaning Conference, Denver, Colorado.

TEST BORING H³ CONCENTRATIONS

