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October 5, 1981
NRC/TMI-81-056



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 27 - October 3, 1981. Major items included in this report are:

1. Liquid Effluent Releases
2. NRC and EPA Environmental Data
3. Radioactive Material and Radwaste Shipments
4. Submerged Demineralizer System Status
5. EPICOR II Status
6. Increase in Incore Thermocouple Temperatures

ORIGINAL SIGNED BY:

Lake H. Barrett
Deputy Program Director
TMI Program Office

Enclosure: As stated

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Harold R. Denton
Bernard J. Snyder

-2-

October 5, 1981

cc w/encl:
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TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Week of September 27 - October 3, 1981

Plant Status

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

Available Core Cooling Modes: Decay heat removal systems. Long term cooling "B" (once through steam generator-B).

RCS Pressure Control Mode: Standby pressure control (SPC) system.

Backup Pressure Control Modes: Mini decay heat removal (MDHR) system.
Decay heat removal (DHR) system.

Major Parameters (as of 0500, October 2, 1981) (approximate values)

Average Incore Thermocouples: 116°F

Maximum Incore Thermocouple: 147°F

RCS Loop Temperatures:

	A	B
Hot Leg	112°F	114°F
Cold Leg (1)	71°F	72°F
(2)	72°F	72°F

RCS Pressure: 99 psig

Reactor Building: Temperature: 69°F
Water level: Elevation 290.2 ft. (7.7 ft. from floor)
via penetration 401 manometer
Pressure: -0.35 psig
Concentration: 6.8×10^{-6} $\mu\text{Ci/cc}$ Kr-85
(Sample taken 9/24/81)

Effluent and Environmental (Radiological) Information

1. 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 September 25, 1981 through October 1, 1981, the effluents contained no detectable radioactivity at the discharge point and individual effluent sources which originated within Unit 2 contained no detectable radioactivity.

2. Environmental Protection Agency (EPA) Environmental Data: The EPA announced on July 6, 1981 that, due to a new shipping procedure for Kr-85 samples to the laboratory, the results for the Kr-85 environmental monitoring stations around TMI will not always be available on a weekly basis. The NRC will report these results as they become available.

-- 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 23, 1981, through October 1, 1981.

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-287	September 24, 1981-September 30, 1981	<9.2 E-14	<9.2 E-14

Environmental TLD measurements for the period June 3, 1981 - July 1, 1981 around TMI indicated gamma radiation to be at the natural background levels. Fifty-seven TLD's registered doses ranging from 0.1 mR/day to 0.3 mR/day. The average dose was 0.11 mR/day. These dose rates are consistent with natural background radiation in the TMI area.

Effective July 1, 1981, USNRC Region I announced that the exchange frequency for TLD stations around the TMI site will be changed from monthly to quarterly. The changes will be done on or about July 1, October 1, January 1, and April 1. The purpose of the frequency change is to obtain better quality data by increasing the ratio of field TLD exposures to control TLD exposures.

The TMIPO staff will report quarterly TLD environmental data as results become available.

4. Licensee Radioactive Material and Radwaste Shipments.

-- On Monday, September 28, 1981, a 40 ml Unit 2 reactor coolant sample was sent to Babcock and Wilcox (B&W), Lynchburg, Virginia.

-- On Monday, September 28, 1981, a 110 ml Unit 2 reactor building sump water sample was sent to EG&G Idaho, Inc., Idaho Falls, Idaho.

- On Tuesday, September 29, 1981, 29 drums and 6 metal containers of Unit 1 LSA compacted and noncompactd trash were shipped to Chem-Nuclear Systems, Inc., Barnwell, South Carolina.
- On Thursday, October 1, 1981, 20 metal containers of Unit 1 noncompactd trash were shipped to U.S. Ecology, Richland, Washington.

Major Activities

1. Submerged Demineralizer System (SDS). Processing of reactor building sump water continued throughout the week. As of 12:00 midnight on October 3, 1981 approximately 65,000 gallons had been transferred out of the reactor building sump and approximately 53,500 gallons had been processed by the SDS. The SDS zeolite vessels have removed approximately 18,000 Ci of cesium-137 and approximately 600 Ci of strontium-90 from the water. This represents removal of greater than 99% of these nuclides from the water passed through the SDS.
2. EPICOR II. EPICOR II is continuing to polish the effluent water from the SDS. The polishing process is removing approximately 99% of the remaining cesium-137 activity from the water and is removing greater than 99% of the remaining strontium-90 and antimony-125.
3. Increase in Incore Thermocouple Temperatures. Following pumping of 50,000 gallons of water from the reactor building sump on September 27, 1981, the incore thermocouple temperatures increased. On September 28, 1981, the temperatures stabilized and started a slight downward trend. The licensee reported that the temperature change appears to have occurred as a result of lowering the water level in the reactor building basement below the point at which the water is in contact with the lower dome of the reactor vessel. Construction drawings show that the lower dome of the reactor vessel is between the 290' elevation and the 290' 2 1/2" elevation. The water level prior to pumping was 290' 10 3/8" and after pumping was 290' 1 1/4". The heat transfer characteristics have changed since heat may no longer be conducted to the water in contact with the vessel and the temperatures would change until equilibrium conditions are established.

The highest incore thermocouple was approximately 147°F (12°F increase) and the calculated average temperature was 117°F (2°F increase). Additional changes in the temperature profile in the reactor coolant system may occur as the water level in the reactor building basement is further reduced. These changes will not affect the condition and safety of the reactor core since adequate cooling is still available to maintain system temperature below 200°F. The TMIPO is monitoring the temperature changes closely as additional water is removed from the reactor building.

Future Meetings

1. On Tuesday, October 13, 1981, Lake Barrett will address the Downingtown Rotary Club to give an update on the cleanup efforts at TMI and discuss the functions of the NRC.
2. The NRC's Advisory Panel for the Decontamination of Three Mile Island Unit 2 will meet October 21, 1981, in York, Pennsylvania and November 16, 1981, in Lebanon, Pennsylvania. At both meetings, the panel plans to discuss the current status of cleanup activities at Three Mile Island.

The October 21 meeting will be held at 7:00 PM to 10:00 PM in the Hotel Yorktown, 48 East Market Street, York. The November 16 meeting will be held from 7:00 PM to 10:00 PM in the Municipal Building, 400 South 8th Street, Lebanon. Both meetings are open to the public.