



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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February 23, 1981
NRC/TMI-81-014



MEMORANDUM FOR: Harold R. Denton, Director,
Office of Nuclear Reactor Regulation

Bernard J. Snyder, Program Director,
TMI Program Office

FROM: Lake H. Barrett, Acting Deputy Program Director,
TMI Program Office

SUBJECT: NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Enclosed is the status report for the period of February 15-21, 1981.

Lake H. Barrett
Acting Deputy Program Director
TMI Program Office

Enclosure: As stated

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NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Week of February 15-21, 1981

Plant Status

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

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

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

Backup Pressure Control Mode: One decay heat removal pump to supply pressure in conjunction with variable recirculation back to the borated water storage tank (BWST).

Major Parameters (as of 0500, February 20, 1981) (approximate values)

Average Incore Thermocouples: 118°F
Maximum Incore Thermocouple: 151°F

RCS Loop Temperatures:

	A	B
Hot Leg	118°F	120°F
Cold Leg (1)	67°F	67°F
(2)	67°F	66°F

RCS Pressure: 101 psig

Reactor Building: Temperature: 61°F
Water level: Elevation 290.6 ft. (8.1 ft. from floor)
via penetration 401 manometer
Pressure: -0.2 psig (Heise)
Concentration: 4.1×10^{-5} uCi/cc (Kr-85)
(sample taken 2/16/81)

Effluent and Environmental (Radiological) Information

1. Liquid effluents from 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 February 14, 1981, to February 19, 1981, the effluents contained no detectable radioactivity at the discharge point and individual effluent sources which originated within Unit 2 contained no detectable activity.

NOTE: Last weeks' status report included liquid effluent data from February 13, 1981, in addition to the reported period February 6, 1981, to February 12, 1981.

2. EPA Environmental Data. Results from EPA monitoring of the environment around the TMI site were as follows:

-- The EPA measured Krypton-85 (Kr-85) concentrations (pCi/m^3) at several environmental monitoring stations and reported the following results:

<u>Location</u>	<u>February 6 - February 13, 1981</u> (pCi/m^3)
Bainbridge	20
Goldsboro	19
Observation Center	26
Middletown	25

All of the above levels of Kr-85 are considered to be background levels.

-- 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 February 11, 1981, through February 19, 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> (uCi/cc)	<u>Cs-137</u> (uCi/cc)
HP-255	February 11, 1981-February 18, 1981	<8.5 E-14	<8.5 E-14

No reactor relate radioactivity was detected.

4. Licensee Radioactive Material and Radwaste Shipments. The following shipments were made:

- On Monday, February 16, 1981, a 40 ml Unit 2 reactor coolant sample was sent to Babcock and Wilcox (B&W), Lynchburg, Virginia.
- On Friday, February 20, 1981, 92 drums and 8 metal boxes of compacted and non-compacted low specific activity (LSA) waste were shipped from Unit 2 to U.S. Ecology, Hanford, Washington.
- On Friday, February 20, 1981, 26 drums and 2 metal boxes of compacted and non-compacted LSA waste were shipped from Unit 1 to Chem Nuclear Systems, Inc., Barnwell, South Carolina.

Major Activities

1. Ground Water Monitoring Program Update. Water samples taken from monitoring well No. 2 (test boring No. 2) on February 11, 1981, contained increased concentrations of Cesium-137 (Cs-137) (371 pCi/l) and Cs-134 (134 pCi/l) and Cobalt-60 (Co-60) (14.3 pCi/l). Test boring No. 2 is located a few yards east of the BWST. These results represent an increase (approximately, an order of magnitude) in these quantities from previous results. The results are being evaluated by the licensee and the NRC staff.

The terminology used in reporting ground water monitoring results has been changed from monitoring wells and observation wells to test borings. The terminology change was made to avoid confusing these test wells with typical household wells which supply drinking water. Future status reports will refer to these test wells as test borings.

The positive indication of Co-60 tends to support the licensee's conclusion that the source of radioactive material identified in the test borings is the BWST, not the water inside the reactor building. Samples from the reactor building do not indicate that Co-60 is a major contributor to the activity in the sump water. Based on the low cobalt content in the sump and the permeability characteristics of cobalt, one would expect to see other radio-nuclides in addition to those already identified in the test borings if the water were leaking from the reactor building sump. In addition, Co-60 was identified in the soil around the BWST and the excavation currently in progress around the BWST, in conjunction with current rain, could have accelerated the migration of the contamination to the test boring. Construction of a catch basin to contain future leakage from the BWST is currently in progress.

Additional water samples from test boring No. 2 were taken by the licensee on Wednesday, February 18, 1981. These samples were analyzed by the EPA. The EPA results are as follows: Cs-137 (170 + 18 pCi/l), Cs-134 (68 + 13 pCi/l), and Co-60 (less than the lower limit of detection).

The EPA also analyzed water samples from other test borings around the reactor building. No gamma emitting isotopes were detected in these samples.

2. Submerged Demineralizer System (SDS). SDS construction is approximately 80% complete. Initial testing of completed portions is in progress while construction is ongoing. The testing verifies the proper operation of equipment and does not involve processing radioactive water. The licensee is preparing an update to the Technical Evaluation Report which should be available for NRC review by the end of February.

3. Contaminated Building Expansion Joint. On February 11, 1981, following approximately 12 hours of rain, the licensee took a sample of the cork in one of the same locations where prior samples were taken. Analysis of the cork and liquid samples taken by the licensee is in progress.
4. Solid Waste Staging Facility Sump Contamination. Water samples collected directly from the drains of the A and B solid waste storage modules were analyzed onsite and additional samples were sent to an offsite laboratory for a more detailed analysis. The onsite analysis detected 6.9×10^{-8} uCi/ml of Cs-134 and 3.0×10^{-7} uCi/ml of Cs-137 in the B module drain. The only radioisotope identified in the A module drain was tritium (8.6×10^{-6} uCi/ml). All the water from both drains is collected and analyzed as part of a program to identify any signs of potential spent resin liner degradation. Approximately two liters of water was collected from each drain after the recent rainfall.

The A solid waste staging module has been in service since January 1980 and contains a total of 66 spent resin liners. The B module was placed in service in December 1980 and currently contains 22 liners. Additional samples have been taken in an attempt to identify the source of the cesium activity detected in the B module. Based on the analysis of the liner contents, the liners in the B module appear to be less susceptible to degradation than the A module liners.

The licensee is investigating the sources of radioactivity in the drainage. The contamination levels do not indicate significant, if any, degradation of the liners. Gross liner failures would result in contamination levels orders of magnitude higher than have been detected. Possible sources of the detected radioactivity are low level contamination of the outer surfaces of the liners and condensed water vapor from leakage through plugged pipe connections at the top of the liners.

Meetings Attended

On Thursday, February 12, 1981, Bernard Snyder, Lake Barrett and Richard Conte attended the TMI Advisory Panel meeting held at the Forum in Harrisburg. The Advisory Panel met to continue the development of a working document for presentation of recommendations to the NRC.

The first topic of discussion centered around the ultimate disposal for the contaminated water in TMI Unit 2. Various motions were debated among the Panel members as noted below.

- "Accident generated water used in the decontamination process should not be disposed of into the Susquehanna River at all."
- "The ultimate disposal of water should wait upon completion of processing of the existing inventories of the contaminated water."
- "Accident generated water and water used in the decontamination process should not be released to the environment."

None of these motions were adopted in light of a previously adopted recommendation ("No. 2"), which calls for the subject water to be held in tanks onsite and the water further analyzed.

Another major issue discussed was the disposal of the high specific activity EPICOR-II resin liners offsite. A representative from the Department of Energy (DOE) reiterated that this area is being actively pursued at DOE to assist in the resolution of this issue.

The Panel agreed that a letter should be drafted before the next meeting recommending that DOE arrange for offsite storage of the high specific activity EPICOR-II liners.

Before the end of March, the Panel members are planning to go to Washington, D.C., to meet with the NRC Commissioners, the Secretary to the Department of Energy, the Armed Force Service Committees, and if possible, the President of the United States, to impress upon them the urgency of the problems facing the cleanup at TMI and the need for support from the various government agencies and Congress itself.