

April 26, 1982
NRC/TMI-82-024

50-322



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 April 17, 1982 to April 24, 1982. Major items included in this report are:

- Liquid Effluents
- NRC and EPA Environmental Data
- Radioactive Material and Radiowaste Shipments
- Submerged Demineralizer System Status
- EPICOR II
- Reactor Coolant System Water Processing
- Reactor Building Entries
- Groundwater Monitoring Status
- Public Meetings

Original signed by
Lake H. Barrett

Lake H. Barrett
Deputy Program Director
TMI Program Office

Enclosure: As stated

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Harold R. Deaton
Bernard J. Snyder

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April 26, 1982

cc w/encl:
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OGC
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Commissioner's Technical Assistants
NRR Division Directors
NRR A/D's
Regional Directors
IE Division Directors
TAS
EIS
TMI Program Office Staff (15)
PHS
EPA
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NAME	GKainan/jes	RConte	MShaybaki	AFasano	ABellamy	Conte
DATE	4/1/82	4/1/82	4/26/82	4/1/82	4/2/82	4/26/82

NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

April 18, 1982 - April 26, 1982

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, April 23, 1982) (approximate values)

Average Incore Thermocouples: 103°F
Maximum Incore Thermocouple: 130°F

RCS Loop Temperatures:

	A	B
Hot Leg	97°F	100°F
Cold Leg (1)	84°F	85°F
(2)	89°F	90°F

RCS Pressure: 96 psig

Reactor Building: Temperature: 69°F
Water level: Elevation 283.2 ft. (0.5 ft. from floor)
Pressure: -.3 psig
Airborne Radionuclide Concentrations: -
2.6 x 10⁻⁵ uCi/cc Kr⁸⁵
(sample taken 4/20/82)
<1.8 x 10⁻⁸ uCi/cc H³
(sample taken 4/20/82)
1.04 x 10⁻⁹ uCi/cc particulate
(sample taken 4/21/82)

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 April 16, 1982, through April 22, 1982, 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

Results from EPA monitoring of the environment around the TMI site were as follows:

- The EPA measured Kr-85 concentrations (pCi/m³) at several environmental monitoring stations and reported the following results:

<u>Location</u>	<u>March 12, 1982 - April 2, 1982</u> (pCi/m ³)
Goldsboro	23
Observation Center	30
Middletown	22
Yorkhaven	30

All of the above levels of Kr-85 are considered to be background levels. Results for the samples taken April 2, 1982 through April 16, 1982, will be reported 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 April 14, 1982 through April 22, 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> (uCi/cc)	<u>Cs-137</u> (uCi/cc)
HP-316	April 14, 1982 - April 21, 1982	<6.6 E-14	<6.6 E-14

4. Licensee Radioactive Material and Radwaste Shipments

- On Tuesday, April 20, 1982, 38 drums of Unit 1 compacted trash (Low Specific Activity, LSA) were shipped to Chem Nuclear Systems, Inc., Barnwell, South Carolina.
- On Friday, April 23, 1982, four containers of samples taken in Unit 1 (various locations) were shipped to the Babcock and Wilcox Research Center, Lynchburg, Virginia.

Major Activities

1. Submerged Demineralizer System (SDS). The SDS is shutdown for minor maintenance. During the next reporting period the SDS is scheduled to commence processing approximately 30,000 gallons of reactor coolant bleed tank water.
2. EPICOR II. The EPICOR II system is shutdown because of lack of water to be processed.
3. Reactor Coolant System (RCS) Water Processing. Engineering and construction efforts by the licensee are continuing in preparation for RCS processing which is presently scheduled to commence in May 1982. Actual RCS processing may be postponed while the SDS processes the remaining water (approximately 40,000 gallons) in the reactor building. Approximately 80% of the procedures needed to commence RCS water processing has been approved by the NRC/TMIPO site office. The NRC/TMIPO site office, with support from the Chemical Engineering Branch, NRR, is reviewing the licensee's request to revise the Recovery Operations Plan to incorporate changes to accomodate RCS processing.
3. Reactor Building Entries. During the reactor building (RB) entry on Thursday, April 22, 1982, a suction hose was installed into the incore instrumentation trough on the 282 ft. elevation floor. The trough extends below the general floor level and was chosen as the optimum suction location to remove the remaining water from the RB basement. The pump installation should be completed during the next RB entry. The pump discharge will be connected to the existing transfer hose between the floating sump pump and the submerged demineralizer system. In addition to the suction hose installation, technicians removed the reactor building dome radiation monitor, HPR-214. The dome monitor will be shipped to an offsite laboratory for analysis.

The table below is a summary of RB man-hours and man-rem for accident recovery entries. The summary is subdivided into pre-gross decontamination experiment entries (entries 1-16) and the gross decontamination experiment entries (entries 17-56).

	<u>Entries 1 through 16</u> <u>7/23/80 to 9/24/81</u>	<u>Entries 17 through 56</u> <u>10/27/81 to 3/31/82</u>
Total Man-hours	199	507
Total Man-rem	63	115

A 14 month look ahead at major milestones in the RB recovery schedule includes the following events:

- June 1982, insertion of the axial power shaping rods (APSR) .
- July 1982, closed circuit television inspection of the upper reactor vessel internals
- Summer 1983, reactor vessel head removal (funding permitting).

A prerequisite for the television inspection is the requirement to depressurize the reactor coolant system and to lower the RCS water level below the top of the control rod drive mechanisms (CRDM). Preparations for RCS processing through the submerged demineralizer system (SDS) are progressing in parallel with the identified milestones. However, under the current concept, RCS processing will be suspended whenever the primary system is depressurized. It is planned to refill and repressurize (50 psig) the primary system after the television inspection of the reactor internals.

Insertion of the APSR's is the first event on the milestone schedule. There are eight APSR's in the TMI-2 core. The APSR's are designed to control core power distribution during reactor operations and normally these rods are not inserted during reactor shutdowns. Following the reactor shutdown on March 28, 1979, the APSR's remained in their last position, withdrawn approximately 35 inches (25% of their full travel). The normal rod uncoupling procedure (prerequisite for head removal) requires the rods to be fully inserted. In conjunction with the APSR insertion to support reactor disassembly, a testing program has been devised to monitor the APSR movement with externally mounted sonic detectors, and electric power requirements to the APSR drive motors will be measured in an attempt to gain additional information about the condition of the core. The next RB entry is scheduled for Wednesday, April 28, 1982. In addition to completing the installation of the sump pump, technicians will test the operation of the RB fire detection systems and maintenance workers will service the airlock door mechanisms.

5. Groundwater Monitoring Program. The licensee is conducting a program of increased surveillance frequency of the onsite test borings. One of the objectives of the licensee program is to identify the source of tritium in test borings 2, 3, 16, and 17. Attachment 1 is a graph of tritium activity in the three test borings with the highest concentrations. A sample taken on March 23, 1982, from test boring 17 had the highest tritium concentration (1,100,000 pCi/L) of any sample taken during the ground water monitoring program. On April 8, 1982, the concentration in test boring 17 decreased to 610,000 pCi/L.

Since January 1982, groundwater near the borated water storage tank (BWST) has apparently leaked into underground structures in the vicinity of the BWST (Air Intake Tunnel and BWST Pipe Chase). As part of the present monitoring program, a more detailed characterization

of the isotopic makeup of the contaminated water in the air intake tunnel and the borated water storage tank (BWST) was conducted. The additional analytical results indicated minute concentrations ($\sim 6 \times 10^{-8}$ uCi/ml) of Sb-125 in the BWST pipe chase and the air intake tunnel. A more sensitive analysis of water from the BWST indicated an Sb-125 concentration of $6.5 \text{ E-}6$ uCi/cc. Preliminary evaluation of the analytical results indicates that the Sb-125 to tritium ratios in the air intake tunnel are consistent with those in the BWST. This constant ratio strongly indicates that the source of radioactivity in the groundwater is from the BWST. Although difficult to quantify, it appears that the leakage of BWST water was approximately 3,000 gallons.

Past Meetings

On April 22, 1982, the Three Mile Island Advisory Panel held a meeting in Harrisburg. Various representatives from GPUN, NRC, DOE and EPA gave status reports on 1) funding proposals in Congress, 2) the recent reactor building decontamination experiment, 3) accident water processing, 4) upcoming reactor coolant system processing (which is scheduled to begin in May), and 5) DOE's agreement to remove purification system demineralizer vessels and filters.

Extensive discussion took place on the subject of tritium, which has been showing up in groundwater adjacent to TMI-2 buildings as a result of a leak in the area of the Borated Water Storage Tank last January. The relative levels of radioactivity in the area have been minimal (approximately one curie of tritium). However, the amount of water leakage, originally thought to be 50-60 gallons, has been determined to be closer to 2,000-3,000 gallons. Bill Kirk (EPA) reported undetectable levels of radionuclides in five EPA monitored wells just off the island.

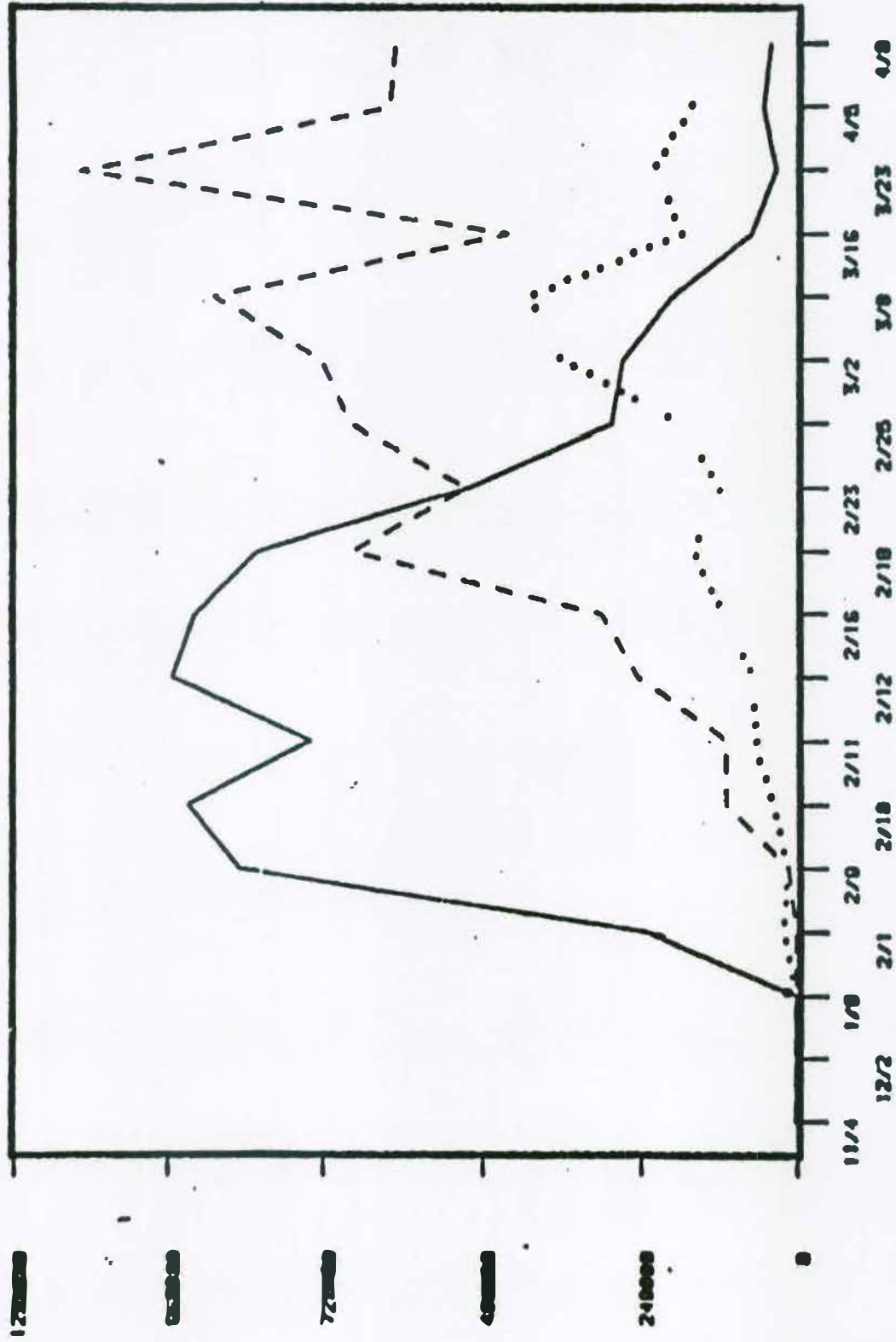
Chairman Minnich also offered three proposals which were passed by the Panel:

1. Send a letter to the legislative leadership of the Commonwealth of Pennsylvania endorsing that the \$5 million for the cleanup proposed by Governor Thornburgh in FY 83 budget, remain in tact through the budget process.
2. Send a similar letter to Congress reinforcing the need and the Panel's support of \$27 million for TMI cleanup proposed for FY 83 DOE budget.
3. Send a letter to the Pennsylvania PUC suggesting the \$23 million currently slated for amortization of TMI-2 capital costs pursuant to deferred energy rate charge, be diverted to the cleanup. Monies slated for rate reduction relief would remain in tact. Chairman Minnich felt such a move would be a positive sign to Congress of Pennsylvania's commitment to the cleanup.

Future Meetings

1. On Tuesday, April 27, 1982, Lake Barrett will meet with a group of Middletown mothers to discuss issues and concerns related to the cleanup program at TMI Unit 2, the status of Unit 1, and the financial status of GPU Nuclear.
2. On Wednesday, April 28, 1982, Harold Denton, Bernard Snyder and Lake Barrett will testify in Washington, DC. before Senator Alan K. Simpsons' Senate Subcommittee on Nuclear Regulation, Environment and Public Works Committee.

TRITIUM CONCENTRATIONS



B2 ———
B17 - - - -
B16
DATES 1981-1982