UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 28, 1980
NRC/TMI-80-116

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

B. J. Snyder, Program Director,
TMI Program Office

FROM: J. T. Collins, Deputy Program Director,
TMI Program Office

SUBJECT: NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Enclosed is the status report for the week of July 20-26, 1980.

John T. Collins
John T. Collins
Deputy Program Director
TMI Program Office

Enclosure: As stated

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NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Week of July 20-26, 1980

## Plant Status

Core Cooling Mode: Cyclic natural circulation in the "A" reactor coolant system (RCS) loop via the "A" once through steam generator (OTSG), steaming to the main condenser, and RCS loop-A and B cyclic natural circulation to reactor building ambient.

Available Core Cooling Modes: OTSG "B" to the main condenser; long term cooling "B" (OTSG-B); decay heat removal.

RCS Pressure Control Mode: Standby Pressure Control (SPC) System.

Backup Pressure Control Mode: Makeup system in conjunction with letdown flow (Emergency use only due to suspected leaks in the seal injection system).

Major Parameters (As of 0500, July 25, 1980) (approximate values)
Average Incore Thermocouples: 140°F
Maximum Incore Thermocouple: 193°F

RCS Loop Temperatures:

| | A | B |
|---|---|---|
| Hot Leg | 143°F | 147°F |
| Cold Leg (1) | 105°F | 83°F |
| (2) | 112°F | 85°F |

RCS Pressure: 81 psig (Heise)

Pressurizer Temperature: 93°F

Reactor Building: Temperature: 87°F
Water level: Elevation 290.3 ft. (7.8 ft. from floor) via penetration 401 manometer
Pressure: -0.5 psig

## Environmental & Effluent Information

1. Liquid effluents from TMI-1 released to the Susquehanna River, after processing, were within the limits specified in Technical Specifications.

2. No liquid effluents were discharged from TMI-2.

3. Results from EPA monitoring of the environment around the TMI site were:

-- EPA environmental stations registered background levels for air particulate and water samples. Gamma scan results for all sampling locations were negative.

-- Instantaneous direct radiation readings showed an average level of 0.013 mRem/hr at the 17 monitoring stations.

4. NRC Environmental Data

-- The following are the NRC air sample analytical results for the onsite continuous air sampler:

| Sample | Period | I-131 (uCi/cc) | Cs-137 (uCi/cc) |
|---|---|---|---|
| HPR-225 | July 16-23, 1980 | <5.0 E-14 | <5.0 E-14 |

No reactor related radioactivity was detected.

-- The licensee provided the following monthly inventory of Kr-85 releases for 1980: January-80 Ci, February-80 Ci, March-63 Ci, April-69 Ci, May-85 Ci, June-447 Ci, and July (to midnight July 10) 42,615 Ci. This results in a total Kr-85 release of 43,439 Ci, as of midnight July 10, 1980.

The licensee stated that the uncertainty for Kr-85 released during the purge is ± 10%.

-- Environmental TLD measurements for the period May 29, to July 2, 1980, indicate gamma radiation to be at the natural background levels. Fifty-nine TLD's registered doses ranging from 0.10 mR/day to 0.20 mR/day. Average dose was 0.13 mR/day. These dose rates are consistent with natural background radiation in the TMI area.

5. Radioactive Material and Radwaste Shipments were as follows:

-- On Monday, July 21, 1980, a 40 ml, Unit 2, reactor coolant sample was shipped to Babcock and Wilcox (B&W), Lynchburg, Virginia.

-- On Monday, July 21, 1980, Unit 2 air sample filter papers were sent to Teledyne Isotopes, Westwood, New Jersey.

-- On Monday, July 21, 1980, an EPICOR I dewatered resin liner (D-9) was shipped to Nuclear Engineering Company (NECO), Richland, Washington.

-- On Tuesday, July 22, 1980, two shipments of Unit 2 compacted and non-compacted waste were dispatched to NECO, Richland, Washington.

-- On Wednesday, July 23, 1980, Unit 1 non-compacted waste was sent to Chem-Nuclear System, Incorporated, Barnwell, South Carolina.

Major Activities This Week

1. EPICOR II System. Processing of the auxiliary building water is essentially completed. The majority of the liquid process effort this week was to utilize process water for gross decontamination flushing of various auxiliary building/fuel handling building tanks.

2. Reactor Building Purge. From July 10 to July 24, 1980, the reactor building atmosphere Kr-85 concentration increased from $1.9 \times 10^{-4}$ uCi/cc to $1.54 \times 10^{-3}$ uCi/cc. This information was obtained from periodic sampling of the reactor building with no purging evolutions in progress.

   The water in the reactor building sump is suspected to be off-gassing Kr-85. On Friday, August 1, 1980, the licensee intends to purge the reactor building using the modified purge system in accordance with Environmental Technical Specification (Appendix B to License No. DPR-73) release rates. Subsequent periodic purges of the reactor building are also being planned.

   In addition, the licensee intends to issue a technical report on the differences in calculated curies released as a result of the purge operation. A pre-purge inventory of approximately 57,000 curies was assumed based on reactor building samples, but approximately 43,000 curies was calculated to be released using the plant effluent monitor (HPR-219A) data.

3. Reactor Building Entry. Two licensee representatives made the first post accident entry into the TMI Unit 2 reactor building. The entry commenced at 10:06 a.m., on July 23, 1980, and was completed 20 minutes later. The entry was limited to a sector of the reactor building between the concrete shield ring around the reactor and the reactor building wall. The entry team remained on the 305' elevation (ground level). Preliminary measurements, digital and pocket dosimeters, indicate that each entry team member received a gamma dose of less than 200 mr to the whole body. The personnel dosimeter (TLD) readings indicated that the whole body dose to each of the entry team members were 180 mrem.

   Gamma radiation readings inside the reactor building ranged from 300 to 700 mr/hr in shielded areas over the concrete floor surfaces. Readings of 20 r/hr were recorded over the two reactor building stairwells. The gamma reading in the vicinity of the reactor building air coolers was 7 r/hr. In most areas of the reactor building beta readings ranged from 1 rad/hr at waist level to 2 rad/hr on contact with the floor surface. Photographs were also taken.

Removable contamination surveys were performed by the entry team. Several swipes were taken from different locations in the reactor building. Initial measurements taken on these swipes indicated beta removable activity of 5 mrad to 1.5 rad per swipe. Further analyses of the swipes for Sr-90 and gamma isotopic will be performed.

During the entry, a health physics technician, who was stationed inside the personnel airlock, cleaned the inner door seal surfaces and the door seals were successfully leak tested following the entry. The door did not properly seal after the initial opening on July 16, 1980. The outer door also passed its seal leak rate test.

4. Mini-Decay Heat (MDH) System. Licensee review of the functional test and operating procedures for the MDH system is in progress. Major outstanding items for system operation are: Replace carbon steel filter housings with stainless steel filter housings; perform the functional test of the system; complete operator training; issue associated operating procedures; and revise technical specifications to address MDH system operation. The system startup is expected late August 1980.

5. Plant Decontamination. The licensee has reported the following decontamination status: Decontamination of open areas (corridors, stairwells, etc. in the auxiliary building and fuel handling building) is 91% complete. Contamination levels on the 328' and 305' elevations have been reduced to less than 500 DPM and general radiation levels are less than one (1) mr/hr. Approximately one-third (1/3) of the 328' and 305' elevations have been decontaminated and released for entry without anti-contamination clothing. Contamination of the 280'6" elevation general area has been reduced to less than 1000 DPM and general radiation levels are less than 1 mr/hr.

The following cubicles were decontaminated to less than 1000 DPM:

-- "B" spent fuel pool

-- Concentrated waste tank cubicle

-- Cleanup demineralizer

-- Gas analyzer room

-- Sample sink cubicle

-- Spent fuel cooler and filter area

-- Makeup and purification valve corridor

-- Tendon gallery area

-- Reactor coolant bleed tank A

An additional forty percent (40%) of the floor drains, drain bells and drain piping has been hydrolased and decontaminated.

Initial entries of the seal injection cubicle, and the makeup pump room "B" were performed. Gross decontamination of both cubicles was performed.

In-plant filter removal, replacement and decontamination occurred. The above has been accomplished on the following systems:

-- Spent fuel filters

-- Auxiliary sump filters

-- Contaminated drain tank filters

-- Neutralizing filters

-- "A" makeup filter

Reactor building decontamination plans are still under review.

6. Ground Water Monitoring Program. The ground water monitoring program was established around the Unit 2 reactor building to serve as an early means for detecting potential leakage from the reactor building. Originally, seven wells were drilled in the vicinity of the reactor building. One well was drilled north of the TMI Unit 1 to serve as a control. Abnormally high tritium levels (several times background but at least three orders of magnitude below MPC) were detected in several of the wells and three wells periodically discharged discolored water. Concern was raised that the abnormally high tritium levels were a precurser to slower migrating radioisotopes leaking from the reactor building. The discolored water, although non-radioactive, was being analyzed to determine whether it met environmental release criteria.

To establish the source of the tritium, seven additional wells were drilled. The discolored water was analyzed by several laboratories and was determined to contain nothing harmful to the environment.

Well water from the 15 wells has been analyzed weekly for tritium and other isotopes. Although the results are not conclusive at this time, it appears that the source of the tritium activity is more likely to be leakage from the borated water storage tank rather than leakage from the reactor building. Tritium activity has remained essentially constant and no other radioisotopes have been detected in the water.

The licensee is continuing the well water surveillance program and has contracted two independent contractors to analyze the results.

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