

December 12, 1983
NRC/THI-83-076

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

Bernard J. Snyder, Program Director
THI Program Office

FROM: Lake H. Barrett, Deputy Program Director
THI Program Office

SUBJECT: NRC THI PROGRAM OFFICE WEEKLY STATUS REPORT FOR
December 4 - December 10, 1983

Data from effluent and environmental monitoring systems indicated no plant releases in excess of regulatory limits. Waste shipments continued on a routine basis. Plant parameters showed no significant changes. The reactor coolant system is depressurized and RCS level remains at 321'6" as part of underhead characterization studies.

Site activities this week included: Auxiliary Fuel Handling Building decontamination, "A" spent fuel pool refurbishment and procedure review. One reactor building entry was made in support of technical specifications and miscellaneous tasks. Results of the core topography study performed in September were made available. (For more details see appropriate paragraphs below.)

Significant items covered in the enclosure are:

- Reactor Building Activities
- Polar Crane Status
- Spent Fuel Pool "A" Refurbishment
- Auxiliary and Fuel Handling Building Activities
- Waste Management Activities
- Core Topography Results
- Public Meetings

Data summary sheets included in this report are:

- Liquid Effluent Data
- Environmental Data
- Radioactive Material/Radwaste Shipment Data
- Water Processing Data
- Plant Status Data
- Core Topography Profile

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//signed//

Lake H. Barrett
Deputy Program Director
THI Program Office

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THI*

OFFICE					
SURNAME	Enclosure:	As stated			
DATE					

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ENCLOSURE

REACTOR BUILDING ACTIVITIES:

Reactor building activities are constrained by funding limitations for the remainder of 1983. Brief, weekly entries will continue during this period to meet technical specification requirements to obtain weekly reactor coolant system water samples for boron analysis. A reactor building recovery schedule is being developed based on the projected funding which has been identified for 1984.

A Department of Energy financed project to characterize the contents of the reactor coolant drain tank is also in progress. The drain tank, which received the discharge from the failed open pressurizer relief valve during the 1979 accident, has been inspected internally by closed circuit television (CCTV). A water sample was obtained from the tank on December 5, 1983, and debris, which was located by the CCTV, is scheduled to be sampled on December 12, 1983.

POLAR CRANE STATUS:

GPU's tentative schedule for activities in 1984, pending funding, released this week indicates that polar crane load test preparation will be carried out during the period January - May 1984. The actual load test is scheduled to be accomplished in late May or early June. Limitations on 1984 polar crane activities will be funding and not technically related.

SPENT FUEL POOL "A" REFURBISHMENT:

Decontamination of the southernmost upper tank was completed this week. Contact dose rates at the outer walls are in the 15-80 mR/h range. The completed tank will now be disconnected, capped and sealed tight, while decontamination of the next tank is carried out.

Two concrete shield slabs were lifted November 21. The heaviest one (20 tons) has been decontaminated and was removed from the fuel handling building on December 5, 1983. It will now be coated with protective paint before transport to onsite storage. The other slab (16 tons) has been lowered into the decontamination enclosure where decontamination should be completed next week.

The 16 lifting lugs of the 4 northernmost shield slabs were cut during the installation of piping and equipment associated with other plant modifications. Now with the completion of these modifications, repair work has resumed this week and lugs are being welded on those slabs. Completion of those operations, including load testing, is scheduled for the end of this month.

AUXILIARY AND FUEL HANDLING BUILDING ACTIVITIES:

Work on the expansion of the 328 ft. elevation decontamination facility continued this week. Partial operation of the facility has begun. Full operation should occur in a few weeks following the receipt of additional equipment components. Training of personnel in the operation of the specialized equipment continued.

Other decontamination activities in the auxiliary and fuel handling buildings consisted of some surface scabbling and preparation for remote cubicle flush decontamination. Tests to evaluate chemical foam decontamination systems are scheduled for next week. Generally, decontamination activities continue to occur at a reduced pace due to funding limitations.

WASTE MANAGEMENT ACTIVITIES:

During the week EPICOR demineralizers F-36, F-42, F-43, F-26, F-40, 2K-2, 2K-6, F-46, K-8 and 2K-9 were shipped from TMI to Hanford, Washington. GPUN had proposed to make a shipment of EPICOR II liners F-42, F-43, 2K-9 and K-9 as unshielded LSA on Thursday, December 8, 1983, however, NRC inspection of the shipment revealed that one liner, K-9, had contact radiation levels in excess of allowable transportation limits. GPUN removed the liner from the shipment and NRC will follow up with appropriate enforcement action.

SONIC CORE TOPOGRAPHICAL MODEL:

A computer generated map of the core void has been completed from sonic measurements which were obtained inside the reactor vessel in August and September 1983. A scale, plastic model of the damaged core was also constructed from the sonic data. Based on the sonic measurements, the cavity volume in the damaged area of the core is 330 cubic feet or 26½ percent of the original core volume. The irregular cavity bottom is generally 5 feet below the top of the core region, with the deepest point, a narrow channel, being 6½ feet deep. Laterally, the cavity extends to the core forming walls in several areas. (See Appendix 6)

Of the 177 fuel assemblies in the reactor, 42 assemblies around the core perimeter exhibit some continuous vertical development through the void region. The cross sections of 23 of these standing assemblies were less than 50% of the original, 19 assemblies appear to have retained more than 50% of their fuel pins, and 2 assemblies appear to be relatively intact. The sonic plot showed that fuel assembly segments, typically 2 to 10 inches long are routinely attached to the underside of the plenum. The top 2 to 4 feet of several assemblies on the west side of the core overhang the void. In several areas where the core forming wall was exposed, the sonic device mapped the ¾ inch thick stainless steel plates which form the perimeter of the core. On the east side of the core, one area of the core forming wall appears to be bowed outward by 2½ inches.

The sonic topographical data is being evaluated and will be useful in planning for plenum and fuel removal. The data supplements the previously obtained closed circuit television tapes of the void and at the present stage of disassembly and defueling planning does not alter the existing concepts for future work.

PUBLIC MEETINGS:

Past Meetings:

1. On December 5, 1983, Lake Barrett and Richard Conte, TMI-1 Senior Resident Inspector, met with the Concerned Mothers of Middletown, Robert Pollard of the Union of Concerned Scientists, Ms. Wiggins of State Senator Shumaker's staff and a reporter from a local newspaper to discuss cleanup operations

at TMI-2 and TMI-1 restart issues. Discussion included environmental monitoring, core cooling instrumentation, fire protection, personnel training and various other subjects. They expressed their concern that TMI-1 should not be restarted prior to completion of the TMI-2 cleanup.

2. On December 8, 1983, the Advisory Panel for the Decontamination of Three Mile Island, Unit 2 held a meeting in Harrisburg, Pennsylvania. Representatives from the NRC, EPA and DOE provided an update of their respective agency's activities relative to the cleanup effort.

The Panel was given a presentation by GPUN personnel which provided both an overview of the licensee's safety evaluation and the sequence of activities associated with the planned reactor pressure vessel head lift.

Dr. Bernard J. Snyder presented the Panel with copies of a TMIPO fact sheet and resumes of the TMIPO staff.

Mr. B. K. Kanga, Director TMI-2, GPUN, answered questions posed by the Panel on the issue of funding. Currently the licensee estimates approximately \$60 million in funds for TMI-2 activities will be available during calendar year 1984. However, there is still a fair degree of uncertainty associated with the 1984 funding levels. The Advisory Panel passed a resolution that states that the Panel is against the consideration of the restart of TMI Unit 1 until a committed funding plan for the cleanup of the damaged Unit 2 reactor is in place. The vote of this resolution was five in favor, one opposed, and one abstention.

The Panel agreed to discuss the question of funding in detail at the next meeting scheduled the second week in January.

Future Meeting:

On January 10, 1984, Lake Barrett will meet with the Concerned Mothers of Middletown to discuss TMI related issues.

APPENDIX 1

LIQUID EFFLUENT DATA

GPU Nuclear

Based on sampling and monitoring, liquid effluents from the TMI site released to the Susquehanna River were determined to be within regulatory limits and in accordance with NRC requirements and the City of Lancaster Agreement.

During the period December 1, 1983 through December 8, 1983 no liquid effluent releases were made from individual sources within Unit 2.

Environmental Protection Agency

Lancaster Water Samples:	7 samples
Period Covered:	November 20 - November 26, 1983
Results:	Gamma Scan Negative
TMI Water Samples:	5 samples
Period Covered:	November 19 - November 26, 1983
Results:	Gamma Scan Negative

APPENDIX 2

ENVIRONMENTAL DATA

EPA Environmental Data

The EPA measures Kr-85 concentrations at several environmental monitoring stations and reported the following results:

<u>Location</u>	<u>November 11 - November 23, 1983</u> (pCi/m ³)
Goldsboro	24
Middletown	25
Yorkhaven	25
TMI Observation Center	25

- 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 November 29, 1983 through December 7, 1983.

NRC Environmental Data

Results from the NRC continuous air sampler monitoring of the TMI site environment are as follows:

<u>Sample</u>	<u>Period</u>	<u>I-131</u> (uCi/cc)	<u>Cs-137</u> (uCi/cc)
HP-396	November 30, 1983 - December 7, 1983	<8.2 E-14	<8.2 E-14

APPENDIX 3

RADIOACTIVE MATERIALS/RADWASTE SHIPMENT DATA

- On December 6, 1983, a HN-100 Type A cask containing EPICOR II liner F-36 was shipped to U.S. Ecology, Hanford Burial Site, Richland, Washington.
- On December 6, 1983, a drum containing a 250 milliliter reactor coolant system liquid sample from TMI-2 was shipped to the University of Maryland, College Park, Maryland.
- On December 7, 1983, a HN-100 Type A cask containing non-compacted trash from TMI-1 was shipped to U.S. Ecology, Hanford Burial Site, Richland, Washington.
- On December 8, 1983, EPICOR II liners F-42, F-43, and 2K9 were shipped to U.S. Ecology, Hanford Burial Site, Richland, Washington.
- On December 9, 1983, 72 drums of contaminated laundry from TMI-1 and TMI-2 were shipped to Interstate Uniform Service, New Kensington, Pennsylvania.
- On December 9, 1983, EPICOR II liners F-46, K-8, 2K-2, and 2K-6 were shipped to U.S. Ecology, Hanford Burial Site, Richland, Washington.
- On December 10, 1983, EPICOR II liner F-40 was shipped to U.S. Ecology, Hanford Burial Site, Richland, Washington.
- On December 10, 1983, EPICOR II liner F-26 was shipped to U.S. Ecology, Hanford Burial Site, Richland, Washington.

APPENDIX 4

WATER PROCESSING DATA

Submerged Demineralizer System (SDS)

SDS was shutdown during the week.

EPICOR II

EPICOR was shutdown during the week.

APPENDIX 5

PLANT STATUS

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

Available Core Cooling Mode: Mini Decay Heat Removal (MDHR) system.

RCS Pressure Control Mode: N/A

Major Parameters as of 5:00 AM, December 9, 1983 (approximate values):

Average Incore Thermocouples*: 90°F

Maximum Incore Thermocouple*: 136°F

RCS Loop Temperatures:

	A	B
Hot Leg**	61°F	65°F
Cold Leg (1)	55°F	63°F
(2)	55°F	65°F

Reactor Core Decay Heat: 19.5 Kilowatts

RCS Pressure: 0 psig

Reactor Building: Temperature: 60°F

Pressure: -0.3 psig

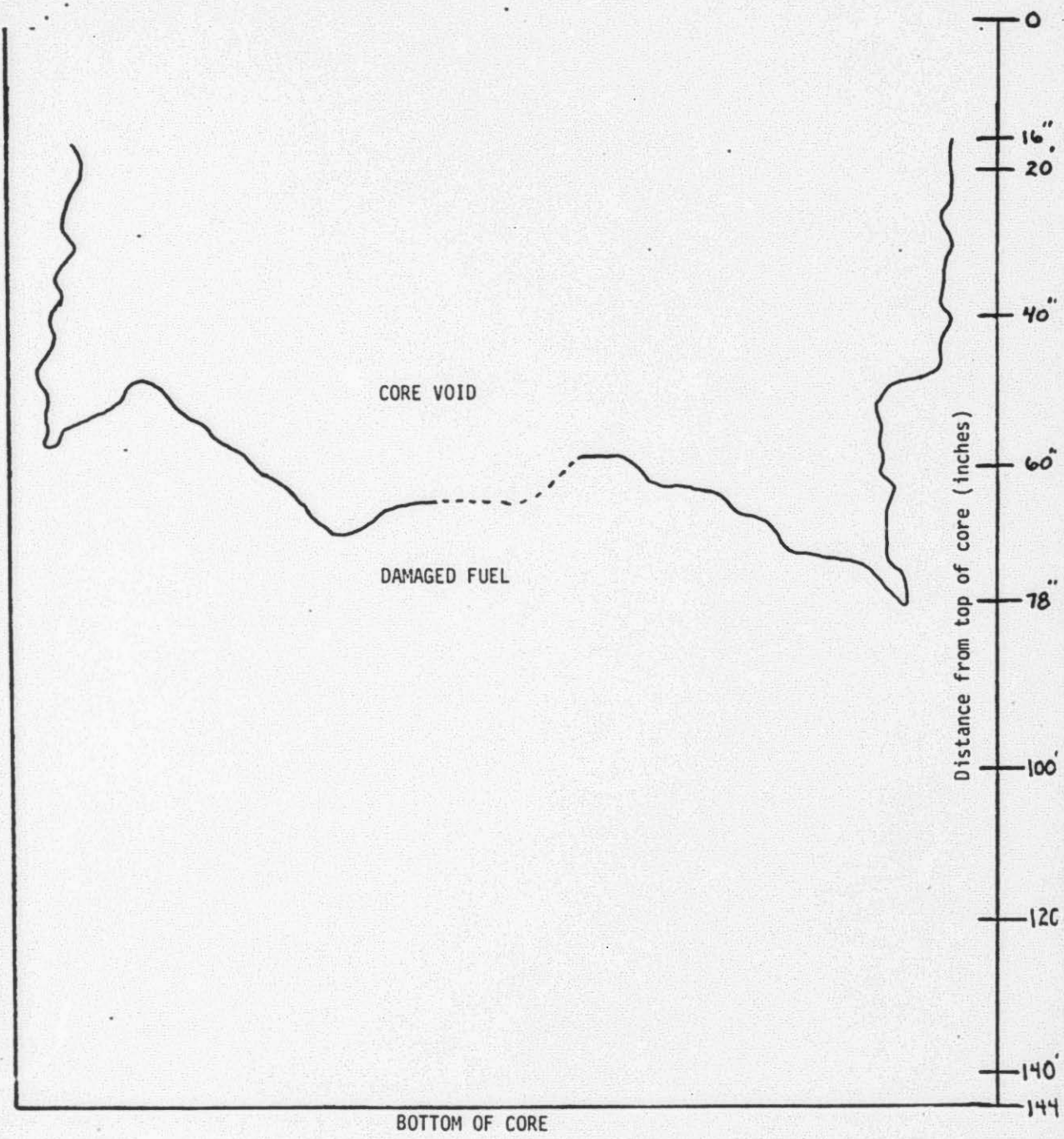
Airborne Radionuclide Concentrations:

5.0 E-7 uCi/cc H³ (Tritium)
(sample taken 12/5/83)

2.9 E-9 uCi/cc particulates
(predominately Cs-137)
(sample taken 12/5/83)

*Uncertainties exist as to the exact location and accuracy of these readings.

**Since the RCS draindown, hot leg temperature detectors are above water level.



APPENDIX 6
TOPOGRAPHIC PROFILE OF CORE VOID