October 3, 1983
NRC/TMI-83-063

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 FOR
September 25 - October 1, 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: canal seal plate preparations, reactor head insulation removal, video survey of 282' level, AFHB decontamination, "A" spent fuel pool refurbishment and procedure review. Three reactor building entries were made in support of miscellaneous tasks. (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
-- Canal Seal Plate Preparations
-- Purification and Demineralizer Status
-- TMI Occupational Exposure
-- 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
-- Canal Seal Plate (Figure 1)

EDIR-5
TMI
1 DIM-6-1

Original signed by
Lake H. Barrett

Lake H. Barrett
Deputy Program Director
TMI Program Office

Enclosure: As stated

OFFICE						
SURNAME						
DATE						

INTERNAL DISTRIBUTION
EDO
OGC
Office Directors
Commissioner's Technical Assistants
NRR Division Directors
NRR A/D's
Regional Administrators
IE Division Directors
TAS
EIS
TMI Program Office Staff (15)
PHS
EPA
DOE
RI Division Directors
Public Affairs, RI
State Liaison, RI
TMIPO HQ r/f
TMI SITE r/f
CENTRAL FILE
NRC PDR
LOCAL PDR
TMI-2 Project
Section File

OFFICE	TMIPO	TMIPO	TMIPO	TMIPO	TMIPO		
SURNAME	KBarr;wa	JBell	AFasano	PCo[illegible]	LBarrett		
DATE	10/3 /83	10/ /83	10/3/83	10/2/83	10/3/83		

NRC FORM 318 (10-80) NRCM 0240

OFFICIAL RECORD COPY

ENCLOSURE

REACTOR BUILDING ACTIVITIES:

Three reactor building entries were completed during the week of September 25, 1983. Activities for the week included: the obtaining of concrete core samples on 305' elevation for evaluation of contamination penetration, canal seal plate preparations,and removal of mirror insulation. Also on Friday, September 30, 1983, technicians recovered 35 feet of Tygon tubing which had been inadvertently dropped into the reactor vessel on September 12, 1983 during RCS liquid sampling.

The general pace of recovery activities inside the reactor building has decreased due, primarily, to polar crane refurbishment software concerns. Most recovery activities not directly related to reactor vessel head removal had previously been placed on hold due to limited funding. Two reactor building entries have been scheduled for the week of October 2, 1983.

The core debris sampling program is scheduled to be resumed next week. Three debris samples will be taken from various depths in the debris bed at control rod drive location E-9 (midway between the core center and the periphery). Three debris samples have already been taken from the center of the core (H-8 location). The samples will be sent to offsite laboratories for analysis. The licensee is making preliminary plans to evaluate the condition of the reactor vessel hold-down studs.

POLAR CRANE STATUS:

The TMIPO staff is continuing the review of all licensee documents related to the reactor building polar crane. On September 28, 1983, a letter was forwarded to GPU requesting additional refurbishment information in the area of administrative controls.

SPENT FUEL POOL "A" REFURBISHMENT:

Removal of concrete shield blocks from around the tank farm continued this week and is now nearing completion. Repair work on the 16 lifting lugs of the northernmost concrete shield slabs above the pool is ongoing.

Early in the week the Submerged Demineralizer System (SDS) was used to process the Reactor Coolant System (RCS) water stored in the Reactor Coolant Bleed Tank "C". The SDS system was then used to treat the water stored in the lower tank farm. Treatment of the lower tank farm contents allows operational testing of the new electrical submersible pump recently installed in the lower tank farm standpipe.

The NRC staff has reviewed the updated SDS Technical Evaluation Report and System Description. NRC comments will be issued early next week and transmitted to the licensee.

AUXILIARY AND FUEL HANDLING BUILDING ACTIVITIES:

Installation of specialized decontamination equipment in the 328 ft. elevation decontamination facility addition continued this week. The new equipment includes: a tool decontamination unit with ancillary equipment attachments for adaptation to perform remote decontamination or hose cleaning; an electro-polisher unit; a vibratory finisher, and an ultra-sonic unit. Construction on the physical structure is complete with only plumbing and electrical work associated with equipment installation being performed.

All but two of the supporting procedures governing operation of the decontamination facility and its equipment have been reviewed and are in effect. The new facility is scheduled to commence operations in October.

Recently completed decontamination activities in the AFHB include: painting south corridor floors (282' level), hands-on decontamination of piping, walls and floor in the "B" makeup pump cubicle (282' level), three flushes and painting of the walls of the reactor coolant evaporator cubicle (AXD14), and hands-on decontamination of the chemical addition cubicle (328' level).

Remote flush decontamination of the "B" & "C" Reactor Coolant Bleed Tank (RCBT) cubicle on the 282' level was performed using the robot "Fred". Activities are presently proceeding at a reduced pace due to funding constraints.

WASTE MANAGEMENT ACTIVITIES:

1. SDS Liner Shipments. No new data are available at this time pertaining the eventual shipment and disposal of the pre and final SDS particulate filters (sand and "Cuno" filters) remaining onsite. Preparations are being made for the shipment of the next SDS zeolite liner (D20031) which is tentatively scheduled for the week of October 10th.

2. EPICOR Demineralizer Shipments. EPICOR demineralizer F-41 was shipped from TMI to Richland, Washington, September 30, 1983. Demineralizers F-42, F-47, K-7 and K-8 (erroneously labeled H-8 in last week's Weekly Status Report) have been dewatered and are being prepared for shipment providing necessary GPU funding is available.

CANAL SEAL PLATE PREPARATIONS:

GPU has recently initiated a sequence of activities in containment to prepare for the installation of a modified reactor vessel seal plate. The seal plate is located in the annular space between the reactor vessel seal ledge and the floor of the refueling canal. (see figure 1). This plate forms a seal to allow contingent flooding of the refueling canal.

To date, the canal seal ledge has been inspected, has been cleaned with an alcohol solvent and had strippable coating material removed. Gaskets and sealants for installation of the seal plate are presently being evaluated by the QA department.

PURIFICATION DEMININERALIZER STATUS:

Plans and preparations continue for the removal of the radioactive resins from the AFHB makeup and purification demineralizers (MU-K 1A & B).

At present GPU is preparing to leak test the "A" demineralizer (a 90 cubic foot, stainless steel vessel) and use the fiber scope to investigate the condition of the resin fill diaphragm valve. Once the gas leak source is identified and sealed, a sample of the demineralizer resin material will be obtained. (See Weekly Status Report, September 12, 1983)

Phase 1 of activities directed toward the eventual removal of the resins should be completed by early summer 1984. Necessary equipment, including a special eluate filtering system, should be in place and tested by the end of March 1984. The content (resins) of the tank will then be rinsed to remove cesium, the eluate filtered to remove resin fines and processed through SDS.

Results of the Oak Ridge National Laboratory (ORNL) analysis of the "B" demineralizer resin sample showed charcoal filtering ineffective for removal of organics and are not necessary as a prerequisite for SDS processing. Therefore, resin elution water will be stored in the auxiliary building neutralizer tank and processed through the SDS system. Completion of this project includes removal of the resin radioactive waste material and is projected for the end of 1984.

TMI OCCUPATIONAL EXPOSURE:

During the period August 1 - August 31, 1983, licensee TLD (Thermoluminescent Dosimeter) records showed the following station occupational radiation exposure ranges:

Unit 1 and Unit 2 Exposure Ranges

Category in Rem	Number of Station Personnel
No Measurable Exposure	1305
Exposure Less Than 0.1	310
0.1 to 0.25	73
0.25 to 0.5	33
0.5 to 0.75	9
0.75 to 1	0
1 to 2	0
2 to 3	0

Total Cumulative Plant (TMI-1 and TMI-2) Exposure (August, 1983) 38.455 man-rem

Unit 2 Occupational Radiation Exposures

August 1983	32.7 man-rem
Total 1983 (January-August 1983)	288.0 man-rem

Man-rem is an expression for the summation of whole body doses to individuals in a group. Thus, if each member of a population group of 1,000 people were to receive a dose of 0.001 rem (1 millirem), or if two people were to receive a dose of 0.5 rem (500 millirem) each, the total man-rem dose in each case would be one man-rem.

PUBLIC MEETINGS:

Future Meeting:

On November 17, 1983, at 11:00 a.m., Lake Barrett will speak on NRC issues at a Lancaster County ELANCO meeting to be held at the Trinity Lutheran Church, 221 East Main Street, New Holland, Pennsylvania.

Past Meetings:

1. On September 27, 1983, at the Middletown Community Service Organization Hall, Mr. Harold Denton, Director of the Office of Nuclear Reactor Regulation presided over a meeting with GPU on the polar crane load test. At the meeting the licensee presented the current status of load test preparations and reviewed the administrative and technical history of the polar crane's refurbishment. As a result of the meeting, a letter was sent to GPU dated September 28, 1983, requesting additional information to be used in the staff's review of the polar crane refurbishment process and the load test.

2. On September 28, 1983, Lake Barrett met with the Concerned Mothers of Middletown to discuss cleanup operations at TMI-2. They expressed their concern that TMI-1 should not be restarted prior to completion of the TMI-2 cleanup.

3. On September 28, 1983, the Three Mile Island Advisory Panel held a meeting in Harrisburg, Pennsylvania. Mr. McGoff, Department of Energy, (DOE) responded to questions from the Panel concerning a letter(from F. Coffman, DOE, to GPUN) which conveyed DOE's concern about funding in 1984 and its effect on the cleanup schedule.

   Mr. R. Arnold, GPUN, spoke to the funding issue and essentially felt that it was too early to make an accurate estimate on calendar year 1984 TMI-2 cleanup funding levels. He felt there is still the possibility that adequate funding may be available.

   GPUN followed the discussion of funding with a detailed technical presentation on the refurbishment effort for the Reactor Building Polar Crane.

   NRC presented their safety evaluation method for reviewing information submitted by the licensee for the polar crane refurbishment and future load testing.

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 September 23, 1983 through September 29, 1983 the effluents contained no detectable radioactivity at the discharge points. Individual effluent sources originating within Unit 2 contained minute amounts of radioactivity. Calculations indicate that less than 1.1 E-7 (0.00000011) of a curie of Cs 137 was discharged.*

*Also found in effluent sources from main sewage holding tank and discharged was 9.1 E-6 of a curie of Tc-99m (Technetium). This radionuclide has a very short half life (6 hours) and comes from the urine of patients who received the Tc-99m in medical diagnostic examinations.

Environmental Protection Agency

Lancaster Water Samples:	7 samples
Period Covered:	September 4 - September 10, 1983
Results:	Gamma Scan Negative
TMI Water Samples:	6 samples
Period Covered:	September 10 - September 17, 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:

Location	September 2 - September 16, 1983 (pCi/m^3)
Goldsboro	24
Middletown	29
Yorkhaven	*
TMI Observation Center	27

*Sample analysis had not been completed at time of printing. Results will be reported in next week's Weekly Status 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 September 20, 1983 through September 28, 1983.

NRC Environmental Data

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

Sample	Period	I-131 (uCi/cc)	Cs-137 (uCi/cc)
HP-386	September 22, 1983 - September 28, 1983	<8.0 E-14	<8.0 E-14

APPENDIX 3

RADIOACTIVE MATERIALS/RADWASTE SHIPMENT DATA

-- On September 26, 1983, the HN 100 series 3, type A cask containing solidified resins from TMI-1 was shipped to the Barnwell Waste Management Facility, Barnwell, South Carolina.

-- On September 27, 1983, the NU PAC 14/190M Type A cask containing solidified resins from TMI-1 was shipped to Barnwell Waste Management Facility, Barnwell, South Carolina.

-- On September 29, 1983, 78 drums of contaminated laundry from TMI-1 and TMI-2 were shipped to Interstate Uniform Service, New Kensington, Pennsylvania.

-- On September 30, 1983, one 14/190 M type A cask containing EPICOR liner F-41 was shipped to Hanford Burial Site, Richland, Washington.

APPENDIX 4

WATER PROCESSING DATA

Submerged Demineralizer System (SDS)

Processing of SDS Batch 60 (approximately 33,000 gallons of water resulting from the recent draindown of the RCS) was completed September 27, 1983. SDS is scheduled to begin processing Batch 61 which consists of approximately 2500 gallons of water from the lower tank farm. Processing will commence September 30, 1983 and should be completed October 1, 1983.

SDS Performance Parameters

September 22, 1983 to September 27, 1983

Radionuclide	Average Influent (uc/ml)	Average Effluent (uc/ml)	Percent Removed
Cesium 137	4.02 E-1	2.77 E-4	99.9
Strontium 90	2.77 EO	6.91 E-3	99.7

EPICOR II

EPICOR II 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, September 30, 1983) (approximate values)
Average Incore Thermocouples*: 105°F
Maximum Incore Thermocouple*: 138°F

RCS Loop Temperatures:

		A	B
Hot Leg		**	**
Cold Leg	(1)	71°F	81°F
	(2)	71°F	81°F

RCS Pressure: 0 psig

Reactor Building: Temperature: 74°F
Pressure: -0.14 psig
Airborne Radionuclide Concentrations:

2.0 E-7 uCi/cc H^3 (Tritium)
(sample taken 9/26/83)

1.1 E-9 uCi/cc particulates
(predominately Cs-137)
(sample taken 9/30/83)

*Uncertainties exist as to the exact location and accuracy of these readings.
**Since the RCS draindown, hot leg temperature detectors are above water level.

FIGURE 1
CANAL SEAL PLATE