September 24, 1984 HRC/THI-84-070

NEMORANDUM FOR:	Harold R. Denton, Director Office of Nuclear Reactor Regulation		
	Bernard J. Snyder, Program Director THI Program Office		
FROM:	William D. Travers, Deputy Program Director THI Program Office		

SUBJECT: NRC THI PROGRAM OFFICE WEEKLY STATUS REPORT FOR SEPTEMBER 16, 1984 - SEPTEMBER 22, 1984

Data from effluent sources indicated no plant release in excess of regulatory limits. Data from the licensee's environmental noble gas samplers for the period July 25 through August 2, 1984 indicated higher than anticipated concentrations of Krypton-85. Plant parameters have shown no significant changes. Site activities this period included: scabbling and sealing of floor surfaces in the reactor building, auxiliary and fuel handling building decontamination, continued preparations of the "A" spent fuel pool and routine waste processing.

Significant items covered in the enclosure are:

- -- Krypton-35 Environmental Results
- -- Reactor Building Activities
- -- Auxiliary and Fuel Handling Building Activities
- -- Makeup and Purification Demineralizer Status
- -- Public Meetings

Summary sheets included in this report are:

- -- Liquid Effluent and Environmental Data
- -- Plant Status Data

ORIGINAL SIGNED BY:

William D. Travers Deputy Program Director THI Program Office

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Enclosure: As stated

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ENCLOSURE

KRYPTON-85 ENVIRONMENTAL RESULTS:

The licensee has informed the TMIPO that sample results obtained from their cyrogenic environmental air samplers were higher than anticipated for the period July 27 through August 2, 1984. The reactor vessel head lift was completed on July 27, 1984. The licensee's environmental samplers located at the TMI Observation Center (East), Middletown (North) and Falmouth (South) indicated Kr-85 in concentrations 105 picocuries per cubic meter (pCi/m³), 165 pCi/m³ and 261 pCi/m³ respectively. These concentrations are well below the limits set forth in 10 CFR Part 20 for Kr-85. The EPA also operates environmental atmospheric samplers North, East, South and West from the TMI site. EPA samples for July 20 through July 27 and July 27 through August 2, 1984 indicated normal background krypton concentrations (23 pCi/m³ to 29 pCi/m³) at all locations.

The two parallel plant vent noble gas monitors and the reactor building purge monitor did not show any increases during this period. The NRC resident staff monitored the purge and plant vent instrumentation during the reactor vessel head lift operations. No abnormalities were noted.

The licensee is continuing to investigate the cause of the elevated results from their environmental atmospheric monitors.

REACTOR BUILDING ACTIVITIES:

Daily decontamination and housekeeping are continuing in the reactor building. Workers are training on the reactor vessel mockup in the turbine building for the next phase of reactor vessel disassembly. The next phase involves the pre-plenum lift inspection of close tolerances between the plenum and the core barrel assembly. Also, six of eight axial power shaping rods, which appear stuck in partially raised positions in the plenum, will be manipulated with special tools to either free the rods to drop into the core debris or to raise them completely into the plenum. Manual tools will also be used to knock away partial fuel assemblies which are attached to the underside of the plenum.

The incontainment plenum inspection is scheduled to commence in October and a partial, 4 inch lift, of the plenum is scheduled for December 1984. However, recent measurements of "as t ilt" tolerances in the plenum are being evaluated to determine whether modifications to the lifting jacks will be required. Additionally, the polar crane, which is necessary to initiate the plenum inspections, is currently out of service to correct apparent refurbishment discrepancies. The above problems may potentially delay the plenum inspection and removal schedule.

AUXILIARY AND FUEL HANDLING BUILDING ACTIVITIES:

The third of the four upper tanks was removed last week. Work continues on the "A" fuel pool refurbishment. The standpipe and pump connecting the lower tanks to the submerged demineralizer system (SDS) were removed last week. The pump and a portion of the standpipe connecting the upper tanks to the SDS were removed this week. The remaining standpipe section (about 10 feet) will be removed next week. The last upper tank will also be removed next week. The removal of both lower tanks is expected to be completed by the end of October 1984. The tanks will be stored onsite pending final disposition.

MAKEUP AND PURIFICATION DEMINERALIZER STATUS:

The two 90 cubic foot makeup and purification demineralizers are part of the normal plant letdown system. The demineralizers became highly contaminated from fission products and core debris during the March 28, 1979 accident. A characterization program was carried out during 1983 and early 1984 to assess the degree to which the resin was contaminated, the amount of fuel debris in the vessels, and the extent of thermal and radiation damage to the resins. The program included demineralizer gas space sampling, resin sampling, remote radiation surveys of the demineralizer cubicles, nondestructive assay studies to quantify demineralizer fuel content, and laboratory tests by Oak Ridge National Laboratories. The characterization program determined that the "A" demineralizer contains about 3,500 curies of fission products, predominately Cs-137, and the "B" demineralizer contains about 7,500 curies. The total fuel loading of the demineralizers is about 4 kilograms. Additionally, the laboratory testing determined that the majority of the cesium activity could be removed from the resins by chemical elution and that the physical conditions of the resin were such that the resin could be removed from the vessels using conventional sluicing techniques. NRC/ TMIPO approved the licensee's safety evaluation on September 20, 1984.

The licensee has installed and tested the necessary process equipment to elute the cesium from the resin using sodium hydroxide and boric acid. The elution solution will be added to the demineralizer in batches via a chemical addition tank, allowed to soak for about 24 hours and then will be pumped from the vessels to the existing neutralizer tanks for subsequent processing in the SDS. The licensee completed operator training on the system during the week of September 17 and anticipates startup of the elution process the week of October 1, 1984. Each demineralizer will require about 10 elution batches. The entire process will take about six weeks. The intent of the process is to remove sufficient activity from the demineralizer resins to reduce radiation levels and allow conventional sluicing with the existing resin handling system in the plant. Resin removal is not planned until late 1985 or early 1986.

PUBLIC MEETINGS:

Past Meeting

On September 19, 1984, the Advisory Panel for the Decontamination of Three Mile Island Unit 2 met in Harrisburg, Pennsylvania.

The Panel received a presentation from the NRC staff on the staff's findings relative to the issue of alleged harassment by the licensee's management of specific individuals in the employment of GPUNC over issues of health and safety. Licensee representatives provided the Panel with an update on anticipated funding of the cleanup effort for calendar year 1985 and beyond. Staff members from the NRC's TMIPO, U.S. Environmental Protection Agency and Pennsylvania Department of Environmental Resources provided information relating to an informal environmental survey on the Susguehanna River's west shore.

Future Meeting

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On September 28, 1984, Philip Grant will participate in a panel discussion on the broad spectrum of nuclear issues with members of the private and public sector (e.g., Union of Concerned Scientists, Public Information Resource Center, Pennsylvania Power and Light, etc.). The seminar will be held at the Lancaster Country Day School Faculty retreat at Timberline Lodge, Strasburg, Pennsylvania.

APPENDIX 1

LIQUID EFFLUENT AND ENVIRONMENTAL 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 14, 1984 through September 20, 1984, liquid effluents contained no detectable radioactivity at the discharge point. Individual effluent sources originating within Unit 2 contained minute amounts of radioactivity. Calculations indicate that less than 1.0 E-6 (0.000001) of a curie of Cs-137 and less than 2.5 E-6 (0.0000025) of a curie of gross beta activity and less than 6.5 E-6 (0.0000065) curies of Tc-99M, were discharged. Tc-99M is not reactor related. It is a short lived isotope typically used in medical diagnostic studies.

Environmental Protection Agency

Lancaster Water Samples: 6 samples

TMI

Period Covered:	September 3 - 8, 1984
Results:	Gamma Scan Negative for reactor related radioactivity
Water Samples:	6 samples
Period Covered:	September 2 - 8, 1984
Results:	Gamma Scan Negative for reactor related radioactivity

NRC Environmental Data

The NRC operated continuous outdoor air sampler at the TMI site did not detect any reactor related radioactivity. The air sampler parameters are listed below. The analysis results were less than the lower limit of detectability of the analytical instruments: 7.8 E-14 uCi/cc for I-131 and 7.8 E-14 uCi/cc for Cs-137.

Sample	Period	Volume
HP-437	September 14-20, 1984	451.0 m ³

APPENDIX 2

PLANT STATUS

Reactor Vessel Configuration: Reactor vessel open with modified internals indexing fixture installed

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

Available Core Cooling/Makeup Sources: Standby pressure control (SPC) system Reactor coolant bleed tank (RCBT) water transfer system Mini decay heat removal (MDHR) system

Major Parameters as of 5:00 AM, September 21, 1984 (approximate values):

Reactor Coolant System:

Loop Temperatures:

	A	В
Cold Leg (1)	60°F	65°F
(2)	60°F	65°F

Reactor Core:

Average Incore Thermocouples:* 93°F Maximum Incore Thermocouple:* 107°F Decay Heat: 15.5 kilowatts

Reactor Building: Temperature: 63°F Pressure: -0.27 psig

Airborne Radionuclide Concentrations:

Tritium: 1.6 E-8 uCi/cc (sample 9/17/84) Particulates: 7.4 E-10 uCi/cc (sample 9/20/84) predominately Cs-137

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