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January 13, 1986  
NRC/TMI-86-004

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

Frank J. Miraglia, Director  
Division of PWR Licensing-B

FROM: William D. Travers, Director  
TMI-2 Cleanup Project Directorate

SUBJECT: NRC TMI-2 CLEANUP PROJECT DIRECTORATE WEEKLY STATUS  
REPORT FOR JANUARY 5 - 12, 1986

1. DEFUELING - First Core Debris Removed from Reactor Vessel

On January 12, 1986, at approximately 1:00 PM, the licensee transferred the first three loaded fuel canisters out of the Reactor Building (RB) into the Fuel Handling Building (FHB). The canisters were, beginning on October 30, 1985, loaded with core debris (e.g., end fittings, control rod spiders, fuel pins). The canisters were sealed, dewatered and individually transferred from the reactor vessel by a shielded canister handling bridge to the fuel transfer canal inside the RB. The canisters were then transported to the FHB via a modified fuel transport system and placed in underwater fuel canister storage racks located in the "A" fuel pool. The highest direct radiation level on the surface of the transfer shield during transfer was 20 mR/hr. There was no increase in airborne contamination levels in the RB and FHB as a result of these activities. NRC site radiation specialist inspectors witnessed the transfer activities.

On January 6, 1986, GPUN completed initial performance testing of the vacuum defueling system. The knock-out (K/O) canister, as measured on January 9, 1986, had a gross weight of 1,880 lbs. which corresponds to a net fuel debris loading of about 1,500 lbs. Loading of the finer debris in the filter canister is only about 20 to 30 lbs. In addition, the differential pressure across the filter canister increased towards the end of the vacuuming test, restricting the vacuuming flow rate to below 100 gpm. The filter canister was bypassed during the final two hours of the test. Water clarity degraded when the filter canister was bypassed. Overall, the test successfully demonstrated the ability to load debris although the debris pickup rate and the filter canister performance were less than expected. The licensee is evaluating modifications to improve performance.

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On January 8, 1986, GPUH completed loading of fuel canister D-139 with fuel assembly end-fittings. This is the canister involved in the inadvertent drop event (see Weekly Status Report of 12/9 - 12/15, 1985). Loading of this canister has been restricted to those end-fittings with no attached fuel rods. On January 9, 1986, GPUH completed loading of fuel canister D-140. Each fuel canister contains about 350 lbs. of material consisting of 12 pieces of end-fittings and control rod spiders.

By January 10, 1986, there were four loaded fuel canisters and one loaded K/O canister in the Canister Positioning System inside the reactor vessel. On January 12, 1986, three of the fuel canisters were closed, dewatered, and transferred to the storage racks in the "A" spent fuel pool.

## 2. PLANT STATUS

- The facility remains in long term cold shutdown with the Reactor Coolant System (RCS) vented to the reactor building atmosphere and the reactor vessel head and plenum assembly removed from the reactor vessel.
- The plenum is on its storage stand in the deep end of the fuel transfer canal. A dam has been installed between the deep and shallow ends of the fuel transfer canal. The deep end is filled with water to a depth of about 20 feet (about 5 feet above the top of the plenum).
- The modified internals indexing fixture is installed on the reactor vessel flange and is flooded to elevation 327 feet 6 inches (15½ feet above the top of the core region). The defueling platform is installed over the internals indexing fixture.
- Calculated reactor decay heat is less than 12 kilowatts.
- RCS cooling is by natural heat loss to the reactor building ambient atmosphere. Incore thermocouple readings range from 68°F to 95°F with an average of 82°F.
- The average reactor building temperature is 57°F. The reactor building airborne activity at the Westinghouse platform is 3.4 E-8 uCi/cc Tritium and 1.6 E-10 uCi/cc particulate, predominantly Cesium 137.
- Spent Fuel Pool "A" is flooded to a depth of 20 feet. About 6 feet of water is over the fuel canister storage racks.

## 3. WASTE MANAGEMENT

- The Submerged Demineralizer System (SDS) and EPICOR II remained shutdown this week.
- Total volume processed through SDS to date is 3,598,397 gallons, and the total volume processed through EPICOR II is 2,776,536 gallons.

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4. RADIOACTIVE MATERIAL/WASTE SHIPMENTS

- On December 2, 1985, three Unit 2 shipments consisting of depleted EPICOR II resin liners in shields were sent to U.S. Ecology, Richland, WA for burial.
- On December 4, 1985, a combined unit contaminated laundry shipment of 44 drums and 3 boxes were sent to Royersford, PA.
- On December 5, 1985, a Unit 2 advance notification shipment was sent to U.S. Ecology, Richland, WA for burial.
- On December 6, 1985, a Unit 2 sample shipment of electrical equipment was sent to Westinghouse - Hanford, Richland, WA for examination.
- On December 9, 1985, two Unit 2 shipments consisting of depleted EPICOR II resin liners in shields were sent to U.S. Ecology, Richland, WA for burial.
- On December 9, 1985, a Unit 1 shipment (dry solid waste) was sent to U.S. Ecology, Richland, WA for disposal.
- On December 9, 1985, a Unit 1 shipment (two solidified evaporator bottoms) was sent to Barnwell, SC for disposal.
- On December 10, 1985, Unit 1 liquid samples were sent to Rockville, MD for analysis.
- On December 10, 1985, a combined unit contaminated laundry shipment of 49 drums and 2 boxes was sent to Royersford, PA.
- On December 10, 1985, a Unit 2 shipment consisting of an EPICOR II resin liner was sent to U.S. Ecology, Richland, WA for burial.
- On December 11, 1985, a Unit 2 shipment (a depleted EPICOR II resin liner) was sent to Richland, WA for burial.
- On December 12, 1985, a Unit 1 gas sample was sent to Rockville, MD for analysis.
- On December 13, 1985, a Unit 2 shipment (an EPICOR II depleted resin liner) was sent to Richland, WA for burial.
- On December 16, 1985, a Unit 2 shipment (an EPICOR II depleted resin liner) was sent to Richland, WA for burial.
- On December 18, 1985, a combined unit shipment of 81 drums and 4 boxes of contaminated laundry was sent to Royersford, PA.
- On December 19, 1985, a combined unit shipment of 16 steel boxes of contaminated waste was sent to Richland, WA for burial.
- On December 19, 1985, a combined unit shipment consisting of six steel boxes and three depleted resin liners was sent to Richland, WA for burial.
- On December 20, 1985, a combined unit shipment of 117 drums was sent to Hanford, WA for burial.
- On December 20, 1985, a combined unit shipment of 72 drums was sent to Richland, WA for burial.
- On December 26, 1985, a Unit 1 shipment (miscellaneous liquid samples) was sent to San Jose, CA for analysis.
- On December 26, 1985, a combined unit shipment of contaminated laundry of 57 drums and 2 boxes was sent to Richland, WA for burial.

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5. DOSE REDUCTION/DECONTAMINATION

- Decontamination activities are continuing on the 281' level of the auxiliary building. Kelly-vac cleaning of the decay heat vaults is in progress.
- Average general area radiation dose rate is 40 mrem per hour on the 347' level of the reactor building and is 67 mrem per hour on the 305' level of the reactor building.

6. ENVIRONMENTAL MONITORING

- US Environmental Protection Agency (EPA) sample analysis results show THI site liquid effluents to be in accordance with regulatory limits, NRC requirements, and the City of Lancaster Agreement.
- THI water samples taken by EPA at the plant discharge to the river consisted of seven daily composite samples taken from December 21 through December 28, 1985. A gamma scan detected no reactor related activity.
- The Lancaster water sample taken at the water works intake and analyzed by EPA consisted of a seven day composited sample taken from December 22 through December 28, 1985. A gamma scan detected no reactor related radioactivity.
- The NRC outdoor airborne particulate sampler at the THI site collected a sample between January 2, and January 8, 1986. No reactor related radioactivity was detected. Analysis showed Iodine-131 and Cesium-137 concentrations to be less than the lower limits of detectability.

7. REACTOR BUILDING ACTIVITIES

- Initial vacuum defueling of the reactor core is in progress.
- The pressurizer manway cover has been removed and the access port shielded. Sludge samples have been removed from the pressurizer and further examination is in progress.

8. AUXILIARY AND FUEL HANDLING BUILDING ACTIVITIES

- Installation of the balance of DWCS continued.
- Spent Fuel Pool "A" has been flooded to a depth of about 20 feet (about 6 feet above the top of the fuel canister storage racks).

9. NRC EVALUATIONS IN PROGRESS

- Technical Specification Change Request number 49.
- Recovery Operations Plan Change number 31.
- SDS Technical Evaluation and System Description Update.
- Core Stratification Sample Safety Evaluation.
- Defueling Water Cleanup System Technical Evaluation Report, Revision 7.

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- Containment Air Control Envelope Technical Evaluation Report, Revision 5.
- Solid Waste Facility Technical Evaluation Report.

10. PUBLIC MEETINGS

- On January 8, 1986, William D. Travers, Director of the THI-2 Cleanup Project Directorate, gave a presentation on risk assessment to the GPUN Education Advisory Panel. The panel is composed of educators from the Harrisburg area who review GPU educational programs proposed to be presented in area schools.
- The next meeting of the Advisory Panel is scheduled for February 12, 1986 at the Holiday Inn, 23 South Second Street, Harrisburg, PA from 7:00 PM to 10:00 PM.

Persons desiring the opportunity to speak before the panel are asked to contact Mr. Thomas Smithgall at 717-291-1042 or write to him at 2122 Marietta Avenue, Lancaster, Pennsylvania 17603.

ORIGINAL SIGNED BY:  
William D. Travers

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THI-2 Cleanup Project Directorate

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Harold R. Denton  
Frank J. Miraglia

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January 13, 1986  
NRC/TMI-85-004

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