



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

July 18, 1986

NOTE TO: Paul Bobe  
Office for Analysis and Evaluation  
of Operational Data

FROM: Randy Hall  
TMI Cleanup Project Directorate  
Division of PWR Licensing-B  
Office of Nuclear Reactor Regulation

SUBJECT: TMICPD INPUT FOR SECOND QUARTER 1986  
ABNORMAL OCCURRENCE REPORT

Enclosed per your request is the TMICPD input for the Abnormal Occurrence Report to Congress for the second quarter of CY 1986. Please contact me if you have any questions on extension 24302.

A handwritten signature in cursive script that reads "Randy Hall".

Randy Hall  
TMI Cleanup Project Directorate  
Division of PWR Licensing-B  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

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### REACTOR BUILDING ENTRIES

During the second calendar quarter of 1986, 91 entries were made into the TMI-2 reactor building, bringing the total number of entries since the March 1979 accident to 956. Reactor building activities during this period centered around 1) controlling micro organism populations in the Reactor Coolant System (RCS) and thereby improving water clarity, 2) pick and place defueling and 3) the use of a drilling rig to obtain stratified samples of the damaged core. Additional reactor building entries were made to remove two of the six internal vent valves and perform maintenance on the various systems needed for the cleanup effort.

### REACTOR VESSEL DEFUELING OPERATIONS

During the first quarter of calendar year 1986 visibility in the reactor vessel progressively decreased to a point at which defueling activities were being adversely affected. Microorganisms, (algae, fungi, bacteria, and anaerobes), were initially identified as the cause of filter plugging in the Defueling Water Cleanup System which rapidly became ineffective in maintaining water clarity. The licensee conducted a three phase program of chemical treatment, high pressure flushing and filtration of the RCS. At the end of April 1986 the Temporary Reactor Vessel Filtration System, using a large diatomaceous earth filter, was put into operation. High pressure hydrolancing of the the RCS began in early May 1986. Also in May, the licensee began injecting borated water treated with hydrogen peroxide into the RCS via the Standby Pressure Control System. The licensee established an initial 200 ppm residual concentration of peroxide as a biocide to kill the micro-organisms. As a result, water visibility was improved to over one foot. The licensee is continuing the program on a periodic basis to control the populations of micro-organisms and maintain water clarity.

Pick and place defueling, halted during the microorganism control program, resumed on May 23, 1986. Near the end of June pick and place defueling was again halted to ready the work platform for installation of the drilling rig to obtain stratified core samples. One additional canister was transferred to the fuel pool at this time bringing the total number of canisters transferred out of the reactor building to 43. The total weight of debris removed from the reactor vessel thus far is 51,670 lbs., representing nearly 17% of the 308,000 lbs. of debris estimated to be in the vessel.

Core boring to obtain stratified samples of the core began on July 3, 1986. This effort was designed to obtain full length samples of the reactor core from the surface of the debris bed to within inches of the inner surface of the lower head of the reactor vessel. Information gained from drilling regarding the hardness, ductility, and friability of the core material will be used in planning future defueling activities. The core samples (approximately 2½" in diameter and 8 ft. long) will be shipped in canisters to the Idaho National Engineering Laboratory (INEL) for examination.

Dose rates associated with defueling activities have continued to remain low. Dose rates on the defueling work platform average approximately 8 mrem/hr, and the highest measured dose rates during canister transfer from the reactor vessel to the storage racks have been less than 40 mrem/hr.

#### EPICOR-II/SUBMERGED DEMINERALIZER SYSTEM (SDS) PROCESSING

Approximately 212,474 gallons of water were processed through the SDS during the reporting period. Approximately 148,469 gallons were processed through the EPICOR-II system during the quarter.

#### CASK AND LINER SHIPMENTS

There were no offsite shipments of EPICOR-II or SDS liners. At the end of June, seven defueling canisters stored in the fuel storage pool were loaded into the first rail-mounted shipping cask. The total weight of the debris contained in the seven canisters is 2400 lbs. The first shipment is expected to occur sometime in July 1986. Additional shipments are expected over the next two and one-half years.

#### AUXILIARY AND FUEL HANDLING BUILDING

Decontamination activities continued during the second quarter of 1986. Activities included: scabbling and painting of the floors in the neutralizer tank rooms and the mini decay heat pump room; steam cleaning of the tendon access gallery; scabbling in the reclaimed boric acid tank room; vacuum cleaning of the 281' elevation; and water flushing of the Westinghouse valve room.

#### TMI-2 ADVISORY PANEL MEETINGS

The Advisory Panel for the Decontamination of Three Mile Island Unit 2 met on April 10, 1986 in Harrisburg, Pennsylvania and June 11, 1986 in Washington, D.C.

At the April 10, 1986 meeting, the Panel was briefed by a representative of the licensee on the status of defueling. The Panel expressed interest on the issue of microorganism growth in the reactor coolant system. The licensee described the extent of the problem and presented their plans for control of the populations. The NRC staff provided a status report on regulatory issues related to TMI-2. This included a brief summary of the NRC Advisory Committee for Reactor Safeguards (ACRS) conclusions on the potential for recriticality of the TMI-2 core during defueling.

On June 11, 1986, the Panel met with the NRC Commissioners in Washington, D.C. The Panel expressed satisfaction with the ACRS review of the recriticality issue. The Panel informed the Commission of the continuing interest and concern of the local citizens regarding the TMI-2 accident related health issue. The Panel also reported to the Commission general approval of the Department of Energy's plans for the off-site shipment of the damaged TMI-2 fuel. The Commission and the Panel discussed proposed Panel activities for the near future and also addressed the question of the point at which Panel activities will conclude.