



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

June 16, 1980  
NRC/TMI-80-098

MEMORANDUM FOR: H. R. Denton, Director  
Office of Nuclear Reactor Regulation  
B. J. Snyder, Program Director, TMI Program Office

FROM: J. T. Collins, Deputy Program Director  
TMI Program Office

SUBJECT: NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Enclosed is the status report for the week of June 7-13, 1980.

*John T. Collins*  
John T. Collins  
Deputy Program Director  
TMI Program Office

Enclosure: As stated

cc: EDO  
OGC  
Office Directors  
Commissioner's Technical Assistants  
NRR Division Directors  
NRR A/D's  
Regional Directors  
IE Division Directors  
XOOS  
XOMA  
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EPA  
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T. Elsassner  
TMI Program Staff

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## NRC TMI PROGRAM OFFICE WEEKLY STATUS REPORT

Week of: June 7-13, 1980

### Plant Status

Core Cooling Mode: Cyclic natural circulation in the "A" reactor coolant system (RCS) loop via the "A" once through steam generator (OTSG), steaming to the main condenser, and RCS loop-A and B cyclic natural circulation to reactor building ambient.

Available Core Cooling Modes: OTSG "B" to the main condenser; long term cooling "B" (OTSG-B); decay heat removal.

RCS Pressure Control Mode: Standby Pressure Control (SPC) System.

Backup Pressure Control Mode: Makeup system in conjunction with letdown flow (Emergency use only due to suspected leaks in the seal injection system).

Major Parameters (As of 0530, June 13, 1980) (approximate values)

Average Incore Thermocouples: 151°F

Maximum Incore Thermocouple: 191°F

#### RCS Loop Temperatures:

	A	B
Hot Leg	149°F	153°F
Cold Leg (1)	105°F	81°F
(2)	117°F	82°F

RCS Pressure: 81 psig (Heise)  
94 psig (DVM controlling)

Pressurizer Temperature: 92°F

Reactor Building: Temperature: 80°F  
Pressure: -0.8 psig (Heise)  
Water level: Elevation 290.2 ft. (7.7 ft. from floor)  
via penetration 401 manometer

### Environmental & Effluent Information

1. Liquid effluents from TMI-1 released to the Susquehanna River, after processing, were within the limits specified in Technical Specifications.
2. No liquid effluents were discharged from TMI-2.
3. Results from EPA monitoring of the environment around the TMI site were:

- EPA environmental stations registered background levels for air particulate and water samples. Gamma scan results for all sampling locations were negative.
- Gas/Air (Kr-85) sample results during the period May 30 through June 6, 1980 were: Goldsboro - 20 pCi/m<sup>3</sup>, TMI Observation Center - 24 pCi/m<sup>3</sup>, Middletown - 18 pCi/m<sup>3</sup> and Bainbridge - 24 pCi/m<sup>3</sup>. The EPA states that the Kr-85 background concentration in the vicinity of TMI to be in the range of 20 and 40 pCi/m<sup>3</sup>.
- Instantaneous direct radiation readings showed an average level of 0.013 mRem/hr at the 18 monitoring stations. The measurements are all attributed to naturally occurring radioactivity.

#### 4. NRC Environmental Data

- The West Screen House continuous air sample (HP-219) for the sampling period June 4 through June 11, 1980, has been delivered to the EPA Coordination Center for analysis.
- The licensee provided the following monthly inventory of Kr-85 releases for 1980: January-80 Ci, February-80 Ci, March-63 Ci, April-69 Ci, May-85 Ci, and June (to midnight of June 12) 27 Ci. Total-404 Ci.
- Results of the environmental TLD measurements for the period April 30 to May 29, 1980, indicate no gamma levels above natural background. Fifty-eight TLD's registered doses ranging from 0.11 mR/day to 0.20 mR/day. Average dose was 0.16 mR/day. These dose rates are consistent with natural background radiation in the TMI area.

#### 5. Radioactive Material and Radwaste Shipments Offsite were as follows:

- On Monday, June 9, 1980, a Unit 2 shipment of laundry was sent to Tri-State Industrial Laundries, Utica, New York.
- On Monday, June 9, 1980, a Unit 2 reactor coolant sample was sent to the Babcock and Wilcox facility, Lynchburg, Virginia, for chemical and radiochemical analyses.
- On Thursday, June 12, 1980, a Unit 2 effluent sample from the reactor coolant resin column was sent to Science Applications Incorporated (SAI), Rockville, Maryland, for analysis.
- On Thursday, June 12, 1980, a Unit 2 EPICOR II effluent sample was sent to SAI, Rockville, Maryland, for analysis.

- On Thursday, June 12, 1980, a Unit 1 SRT-3 LSA dewatered resin liner (Type B) was shipped to Chem-Nuclear Systems Incorporated (CNSI), Barnwell, South Carolina.
- On Thursday, June 12, 1980, a Unit 1 SRT-4 LSA dewatered resin liner (Type B) was shipped to CNSI, Barnwell, South Carolina.
- On Tuesday, June 10, 1980, NRC Region V and Washington state inspectors examined a shipment of 128 drums of low-level waste that was received from Unit 2. The inspection has revealed one drum had a broken locking ring and four drums had loose locking rings. A contamination check indicated no significant radioactive contamination. No health and safety problems were identified, however, based upon the identified inadequacies, the State of Washington banned Metropolitan Edison Company from use of the burial site until further notice. The locking rings were fixed and the drums have been placed into the disposal trench. The licensee is taking corrective actions to improve the quality assurance program, modifying procedures, installing equipment, and improving training. These measures are being taken to restore Metropolitan Edison's access to the disposal site.

6. EPICOR II Processing Status: (auxiliary building approximate quantities)

Amount processed this week:	None due to outage
Amount processed to date:	331,000 gallons
Amount to be processed:	146,000 gallons

Major Activities This Week

1. Reactor Building Purge. On June 12, 1980, the Commission authorized the licensee to remove Kr-85 from the reactor building by controlled purging to the atmosphere. The Commission approval provided that purging may begin no sooner than June 22, 1980.

A copy of the Commission orders are attached as Appendix A and B. The order also provides for operation of a "fast" purge flow path to accelerate the purging of the venting evolution. The licensee estimates that the fast purge system could be operational by July 11, 1980.

The actual start date of purging (slow process) depends on the completion of several major prerequisites. These are: calibration of effluent process monitors for Kr-85 prior to uncapping the plant (vent) stack; uncapping the stack for an elevated release point (auxiliary building supplemental ventilation system to be placed in a standby condition); correction of deficiencies noted during the functional test of hydrogen purge cleanup system; and successful completion of "dryrun" procedure utilizing maximum equipment operation without actual purging of the reactor building. These actions are scheduled for completion during the week of June 16.

The licensee has indicated that purging of the reactor building will begin on June 28, 1980.

In addition, a reactor building air sample for particulates was obtained on June 12, 1980, and the results are under review by the licensee and TMI Program Office staff.

The onsite staff will be supplemented to provide 24 hour coverage of purge activities.

2. Reactor Building Entry. The licensee has evaluated all possible causes for the jammed inner door and has concluded a jammed safety lock solenoid pin (on reactor building side of the inner door) is the most probable cause.

The safety lock was probably activated as designed, during the accident, but never re-assumed its non-activated position due to a malfunction. It is likely that corrosion eventually anchored the pin in the activated state.

Immediate plans are to drill a hole approximately 3/4 inch in diameter on the inner door at the point where the pin is located maintaining containment integrity. A prying device will then be used to force the pin down and out of the jammed position. This evolution is scheduled during the week of June 16. The associated procedure is currently under review by the TMI Program Office staff.

3. EPICOR II Outage Status. EPICOR II unscheduled outage continued throughout this week for system maintenance. Approximately 60,000 gallons of processed waste water has been transferred from the EPICOR II processed water receiver tank to the TMI-2 condensate storage tank and all waste water in the two lower tanks of the Fuel Pool Waste Storage System (approximately 50,000 gallons) has been transferred to the TMI-2 reactor coolant bleed holdup tank "C" for subsequent processing. Startup of the system is expected on Wednesday, June 18, 1980.
4. (Temporary) Nuclear Sampling System (SNS). Operation of this system was delayed due to an administrative scheduling problem.

Meetings Attended with Public Officials and Interested Groups

1. On June 10, 1980, H. Denton, B. Snyder, and J. Collins attended a meeting held by the NRC Commissioners on the issue of purging the TMI-2 reactor building.
2. On June 11, 1980, G. Sanborn addressed the Appleton Papers Management Club at 6:30 p.m. at Hardings Restaurant in Camp Hill.

APPENDIX A

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION



Commissioners:

John F. Ahearne, Chairman  
Victor Gilinsky  
Richard T. Kennedy  
Joseph M. Hendrie  
Peter A. Bradford

In the Matter of

METROPOLITAN EDISON COMPANY, et al.

(Three Mile Island Nuclear Station,  
Unit 2)

Docket No. 50-320

MEMORANDUM AND ORDER

The Commission has before it a staff recommendation that the licensee, Metropolitan Edison Company, et al., be authorized to commence a controlled purging of the TMI-2 reactor building atmosphere in order to remove the remaining radioactive Krypton-85.<sup>1/</sup> To meet the requirements of the National Environmental Policy Act, the staff has submitted in support of this recommendation a "Final Environmental Assessment for Decontam

DUPLICATE DOCUMENT

Entire document previously  
entered into system under:

ANO

8006190539

No. of pages: 13

<sup>1/</sup> Most of the radionuclides original containment atmosphere have decayed. The dominant remaining radionuclide (Kr-85), which has a 10.7-year half-life. Assessment states that approximately 10% of the Kr-85 is mixed in the containment atmosphere. Periodic sampling of Kr-85 concentration is required.

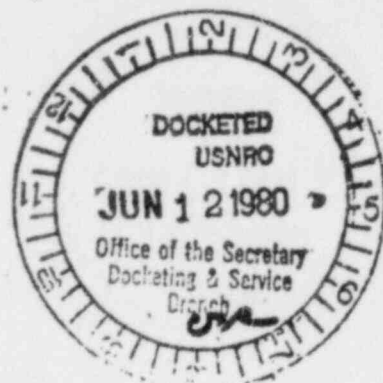
Island Unit 2 Reactor Building Atmosphere," NUREG-0662, May 1980. The draft version of this assessment and two subsequent addenda were issued for public comment, and by the close of the comment period on May 16, 1980 approximately 800 responses had been received. These are summarized in Section 9 of the final assessment and major comments are included in Volume II of NUREG-0662. The Commission received further information regarding the proposed purging at oral briefings by the staff on June 5, 1980 and June 10, 1980.

In a Statement of Policy dated November 21, 1979 the Commission announced its intent to prepare a programmatic environmental impact statement on decontamination and disposition of radioactive waste resulting from the March 28, 1979 accident at Three Mile Island, Unit 2. The policy statement noted that if the best interest of public health and safety required prompt decontamination action prior to completion of the programmatic statement, such action would not be precluded. The Commission stated among other things, however, that no action to purge the containment of radioactive gases would be taken without a prior environmental review and opportunity for public comment. Before we can approve the staff's recommendation for controlled purging of the TMI-2 containment, we must thus decide whether there is sufficient need for prompt decontamination of the containment atmosphere to justify going ahead prior to completion of the programmatic impact statement. We must also decide whether the decontamination method recommended by the staff can be carried out consistent with



APPENDIX B

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION



In the Matter of  
METROPOLITAN EDISON COMPANY, et al.  
(Three Mile Island Nuclear Station,  
Unit 2)

Docket No. 50-320

ORDER FOR TEMPORARY MODIFICATION OF LICENSE

I.

Metropolitan Edison Company, Jersey Central Power and Light Company and Pennsylvania Electric Company (the licensee) are the holders of Facility Operating License No. DPR-73, which had authorized operation of the Three Mile Island Nuclear Station, Unit 2 at power levels up to 2772 megawatts thermal. By Commission order dated July 20, 1979, the licensee's authority to operate the facility, except as provided therein, was suspended. The facility, which is located in Londonderry Township, Dauphin County, Pennsylvania, is a pressurized water reactor used for the commercial generation of electricity.

II.

On March 28, 1979, an accident at the Three Mile Island Nuclear Station Unit 2 resulted in substantial damage to reactor systems and components. The facility is in a shutdown condition and is in a shutdown condition.

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is being maintained in a stable, long-term cooling mode in accordance with the provisions of the Commission order, dated February 11, 1980. That order did not affect the limits on release of gaseous radioactive effluents set forth in Appendix B, section 2.1.2 of the technical specifications attached as a condition of the license. However, the krypton-85 (Kr-85) released into the reactor building during the accident must be removed from the building so that workers can begin the tasks necessary to clean the building, maintain instruments and equipment, and eventually remove the damaged fuel from the reactor core. Those tasks must be performed whether or not the plant ever again produces electricity. Radiation from the krypton gas, although thinly dispersed through the reactor building atmosphere, nevertheless poses a threat to workers who would have to work in the building for prolonged periods. The preferred method for removing the Kr-85 is a kind of flushing or purging process by which the gases would be exhausted from the building and fresh air pulled in.

Section 2.1.2 of the Appendix B technical specifications contains both instantaneous and quarterly limits for releases of noble gases, including Kr-85, to the atmosphere. These limits were developed with normal facility operations in mind and were phrased as limits on releases rather than limits on off-site doses (the effects of the releases) so that compliance with the limits would not necessarily depend on off-site dose measurements. Instead, on-site measurements of the amounts of materials released would be used for determining compliance. These limits could serve to unnecessarily delay the time required to complete the purging process. The revised limits described below would remove this difficulty. They are expressed as limits on off-site doses rather than as limits on releases. An extensive environmental monitoring network is set up in