

August 11, 1980

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

SECY-80-295A

INFORMATION REPORT

For: The Commission

From: Harold R. Denton, Director
Office of Nuclear Reactor Regulation *HRD*

Thru: Executive Director for Operations

Subject: PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT ON THE DECONTAMINATION AND DISPOSAL OF RADIOACTIVE WASTES RESULTING FROM THE MARCH 28, 1979 ACCIDENT AT THREE MILE ISLAND UNIT 2

Purpose: To inform the Commission of the staff's actions regarding the programmatic impact statement and provide the Commission copies of the Draft Programmatic Environmental Impact Statement on the Decontamination and Disposal of Radioactive Wastes Resulting from the March 28, 1979 Accident at Three Mile Island Unit 2.

Discussion: In its Statement of Policy and Notice of Intent to Prepare a Programmatic Environmental Impact Statement of November 21, 1979, the Commission directed the staff to prepare a statement on the decontamination and disposal of radioactive wastes resulting from the March 28, 1979 accident at Three Mile Island Unit 2. The Commission also directed the staff to include in this statement an overall description of the planned activities and a schedule for their completion along with a discussion of alternatives considered and the rationale for choices made. We are forwarding to you, for your information, copies of the draft Programmatic Environmental Impact Statement (PEIS) (Enclosure 1).

In our June 19, 1980 Information Report to the Commission (SECY-80-295), we estimated that the Draft PEIS would be completed the latter part of July. This was accomplished, 4200 copies will have been printed, and adequate copies will be made publicly available at the scheduled August 14 briefing for the Commission. Formal notification of the availability of the PEIS will be published in the Federal Register on August 15 (Enclosure 2). Enclosure 3 is the Press Release, prepared by PA.

The PEIS was developed by the Three Mile Island Program Office, NRR, with assistance of Waste Management Division, NMSS. ELD has provided legal review. Argonne National Laboratory, under contract to NRC, was a major participant in preparing the PEIS. The PEIS was developed independently by the staff without the benefit of a specific Environmental Report submitted by the licensee. Rather than wait possibly a year, or more, for the licensee to develop the required information, the staff and ANL have performed the necessary studies and evaluated environmental impacts of alternative means of accomplishing the decontamination and waste handling activities

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This paper is scheduled for a briefing on
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which are necessary to expeditiously and safely place TMI-2 in a condition where either decommissioning or requalification of the plant might proceed.

Information for this statement was obtained from the licensee's Environmental Report and Final Safety Analysis Report, and from the staff's Final Environmental Statement for the Operating License, dated December 1976, as well as from new information provided by the licensee. In conducting the required NEPA review, the staff met a number of times with the licensee to discuss items of information provided, to seek new information from the licensee that might be needed for an adequate assessment, and generally to ensure that the staff had a thorough understanding of the proposed cleanup operations. In addition, the staff sought information from other sources that would assist in the evaluation, including inspecting the project site and surrounding vicinity. Members of the staff met with representatives of the Council on Environmental Quality, State and local officials charged with protecting State and local interests, and held scoping meetings in Harrisburg and Middletown, Pennsylvania, and Baltimore, Maryland. On the basis of the foregoing and other such activities or inquiries as were deemed useful and appropriate, the staff made an independent evaluation of the TMI-2 cleanup plans and operations.

In its review, the staff has proposed and utilized criteria for radiological effluents from decontamination activities. These criteria would be implemented as modifications of the TMI-2 technical specifications and would be for the purpose of implementing as firm limits (not as objectives) the requirements of Appendix I to 10 CFR Part 50, and to assure that the offsite dose that may occur are as low as reasonably achievable, while at the same time, do not exceed the numerical design objectives of Appendix I. Implementation of Appendix I in this manner is more stringent than for normally operating plants, in recognition of the condition of TMI-2.

As a result of its evaluation, the staff has made the following findings and conclusions relative to the principal environmental impacts of the cleanup and disposal of radioactive wastes:

1. The cumulative whole body dose to any individual offsite exposed to gaseous and liquid releases from the cleanup operations is estimated not to exceed 1.6 mrem. The probability that this dose would cause a cancer death over the lifetime of the individual who received the dose is about 2.2 in 10 million. The probability of genetic effects from that dose to offspring of the exposed individual is about 4.2 in 10 million. For the general population within 50 miles of the plant, the total cumulative dose from expected releases would be about 6 person-rem; this is about 0.002% of the 255,000 person-rem

dose to the same population annually from natural causes. The average dose received by an individual in this₃ population from the cleanup of TMI-2 would be about 2.7×10^{-3} mrem.

An individual onlooker who spent three minutes at an average distance of 3 ft. from a truck loaded with radioactive waste in transit from TMI-2 might receive a dose of up to 1.3 mrem. The probability that this dose would cause a cancer death over the lifetime of the individual who received the dose is about 1.7 in 10 million. The probability of genetic effects from that dose to offspring of the exposed individual is about 3.1 in 10 million. The estimated 700,000 persons, who reside along a 2300-mile route from TMI to the disposal site might receive a cumulative population dose within the range of 26 to 66 person-rem for all TMI waste and fuel shipments.

2. Decontamination workers at the plant will receive a total cumulative radiation dose estimated at between 2,700 and 12,000 person-rem for the whole cleanup program. Health effects corresponding to these doses range from 0.3 to 1.6 additional deaths due to cancer and from 0.7 to 3 additional genetic effects.
3. Contaminated liquids from the auxiliary and fuel handling building, the reactor building sump, the reactor coolant system, and the decontamination activities can be processed by several of the alternative water treatment systems considered by the staff. After suitable dilution, the processed water could be released to the Susquehanna River without adverse environmental impact.
4. The staff estimated from 5 to 7 years would be required from the beginning of the cleanup in April 1979 to accomplish all of the tasks involved in these cleanup activities. The staff has not made any estimates in the Draft PEIS of the dollar costs for cleanup activities.
5. The staff has considered partial cleanup of TMI-2 and concluded that there are no acceptable alternatives to full decontamination and defueling. One of the factors supporting that conclusion is the staff position that long-term or permanent storage of high-level waste is not appropriate at the TMI site. Temporary storage of certain radioactive waste materials at the TMI site will be required until suitable disposal sites and governing regulations are established. However, no significant environmental effects are expected from this storage activity.

The cleanup will alleviate several potentially hazardous conditions at TMI Unit 2. The staff has concluded that, on

balance, the benefits of full decontamination, core removal, and disposal of the radioactive wastes from the March 28, 1979, accident at TMI-2 greatly outweigh the environmental costs of the cleanup activities.

On August 6, 1980, the staff of the Three Mile Island Program Office met with representatives of the Environmental Protection Agency (EPA) to brief them on the content of the PEIS. The purpose of the meeting was to afford the EPA the opportunity of identifying significant shortcomings in the document. Based on our briefing, they did not identify any major deficiencies in the document. The EPA will provide their detailed comments on the draft document during the comment period.

Coordination: The Office of Executive Legal Director has no legal objection.

Harold R. Denton
8/8/80
Harold R. Denton, Director
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Enclosures:

- * 1. NUREG-0683, "Programmatic Environmental Impact Statement on the Decontamination and Disposal of Radioactive Wastes Resulting from the March 28, 1979 Accident at Three Mile Island Unit 2"
 - 2. Federal Register Notice
 - 3. Press Release
- * Commissioners, SECY, PE, GC only.

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