

July 29, 1985

Docket No. 50-320

Mr. F. R. Standerfer  
Vice President/Director  
Three Mile Island Unit 2  
GPU Nuclear Corporation  
P.O. Box 480  
Middletown, PA 17057

Dear Mr. Standerfer:

Subject: Safety Evaluation Report for Early Defueling

By letter dated May 20, 1985, you submitted the Safety Evaluation Report (SER) for Early Defueling of the TMI-2 Reactor Vessel. Based on our initial review of the SER and the information that was discussed between GPU and the TMI Program Office staff on July 25, 1985, we have determined that we need additional information to complete our review. We request your response to the enclosed questions.

Sincerely,

/s/ R. A. Weller for

Bernard J. Snyder, Program Director  
Three Mile Island Program Office  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

cc: T. F. Demmitt  
R. E. Rogan  
S. Levin  
W. H. Linton  
J. J. Byrne  
A. W. Miller  
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# TMI-2 SERVICE LIST

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Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
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King of Prussia, PA 19406

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Chevy Chase, MD. 20015

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Washington, D.C. 20555

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Administrative Judge  
Atomic Safety and Licensing  
Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Karin W. Carter  
Assistant Attorney General  
505 Executive House  
P.O. Box 2357  
Harrisburg, PA 17120

Dr. Judith H. Johnsrud  
Environmental Coalition on  
Nuclear Power  
433 Orlando Ave.  
State College, PA 16801

George F. Trowbridge, Esq.  
Shaw, Pittman, Potts and  
Trowbridge  
1800 M. St., NW.  
Washington, D.C. 20036

Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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Washington, D.C. 20555

Secretary  
U.S. Nuclear Regulatory Commission  
ATTN: Chief, Docketing & Service Branch  
Washington, D.C. 20555

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Dauphin County Commissioner  
P.O. Box 1295  
Harrisburg, PA 17108-1295

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Dauphin County Board of Commissioners  
Dauphin County Courthouse  
Front and Market Streets  
Harrisburg, PA 17101

Dauphin County Office of Emergency  
Preparedness  
Court House, Room 7  
Front & Market Streets  
Harrisburg, PA 17101

U.S. Environmental Protection Agency  
Region III Office  
ATTN: EIS Coordinator  
Curtis Building (Sixth Floor)  
6th & Walnut Streets  
Philadelphia, PA 19106

Thomas M. Gerusky, Director  
Bureau of Radiation Protection  
Department of Environmental Resources  
P.O. Box 2063  
Harrisburg, PA 17120

Don Kennedy  
Office of Environmental Planning  
Department of Environmental Resources  
P.O. Box 2063  
Harrisburg, PA 17120

Willis Bixby, Site Manager  
U.S. Department of Energy  
P.O. Box 88  
Middletown, PA 17057-0311

David J. McGoff  
Division of Three Mile Island Programs  
NE-23  
U.S. Department of Energy  
Washington, D.C. 20545

William Lochstet  
104 Davey Laboratory  
Pennsylvania State University  
University Park, PA 16802

Randy Myers, Editorial  
The Patriot  
512 Market St.  
Harrisburg, PA 17105

Robert B. Borsum  
Babcock & Wilcox  
Nuclear Power Generation Division  
Suite 220  
7910 Woodmount Ave.  
Bethesda, MD. 20814

Michael Churchill, Esq.  
PILCOP  
1315 Walnut St., Suite 1632  
Philadelphia, PA 19107

Linda W. Little  
5000 Hermitage Dr.  
Raleigh, NC 27612

Marvin J. Lewis  
6504 Bradford Terrace  
Philadelphia, PA 19149

Jane Lee  
183 Valley Rd.  
Etters, PA 17319

J.B. Liberman, Esquire  
Berlack, Israels, Liberman  
26 Broadway  
New York, NY 10004

Walter W. Cohen, Consumer Advocate  
Department of Justice  
Strawberry Square, 14th Floor  
Harrisburg, PA 17127

Edward O. Swartz  
Board of Supervisors  
Londonderry Township  
RFD #1 Geyers Church Rd.  
Middletown, PA 17057

Robert L. Knupp, Esquire  
Assistant Solicitor  
Knupp and Andrews  
P.O. Box P  
407 N. Front St.  
Harrisburg, PA 17108

John Levin, Esquire  
Pennsylvania Public Utilities Comm.  
P.O. Box 3265  
Harrisburg, PA 17120

Hr. Edwin Kintner  
Executive Vice President  
General Public Utilities Nuclear Corp.  
100 Interpace Parkway  
Parsippany, NJ 07054

Ad Crable  
Lancaster New Era  
8 West King Street  
Lancaster, PA 17602



## ENCLOSURE

1. Submit Revision 2 to the Boron Dilution Hazards Analysis and the Safety Evaluation Report for Heavy Load Handling.
2. Describe the procedural and physical controls provided to prevent the inadvertent lifting of debris out of water during defueling activities. Discuss the feasibility of providing mechanical means to restrict the lifting of long-handled tools. What is the highest level that debris could reach if lifted with any combination of rigging bar and long-handled tool?
3. Discuss the precautions that will be taken during early defueling to prevent damage to any incore instrumentation strings.
4. Describe the equipment used and the methods for weighing the three types of canisters during defueling operations and following dewatering in the fuel handling building.
5. Describe RCS sampling capability, frequency, and sampling locations during early defueling.
6. What conditions could require flooding of the fuel transfer canal (FTC)? To what level would the FTC be reflooded to recover from an abnormal event? Is all water sensitive equipment above the maximum reflood water level?
7. Describe the design and operation of the canister retention mechanisms on the bottom of the canister transfer shield. What controls will be implemented to restrict horizontal movement of canisters? Provide drawings of the canister handling bridges, canister transfer shields and related components.
8. Identify all materials with the potential to affect RCS reactivity during defueling. The administrative limit on boron concentration (4950 ppm) is based on maintaining a level that will allow detection and correction of a boron dilution event prior to reaching the Technical Specification limit of 4350 ppm. Since the introduction of materials that may increase reactivity would reduce this margin of safety between the administrative and T. S. values, what is your justification for using the current administrative limit in the criticality analysis addressing the introduction of these materials into the RCS? Discuss means to prevent the inadvertent introduction of these materials into the RCS and specify limits on the quantities that could be introduced.
9. Describe the number, type, and location of radiation monitors to be used during early defueling.
10. Provide revised occupational exposure estimates for early defueling when available.

11. Describe all planned RCS processing activities prior to defueling. Will RCS concentrations of Cs and Sb be reduced to the levels referenced in the SER as a prerequisite for the commencement of defueling?
12. In the event of a canister drop over the dry canal, what are the worst case dose consequences to workers from both direct exposure and airborne contamination?
13. Provide your evaluation showing that the potential accident consequences and occupational exposures that may result from early defueling activities are bounded by the events analyzed in the PEIS.