GPU NUCLEAR

GPU Nuclear, Inc.
Route 441 South
Post Office Box 480
Middletown, PA 17057-0480
Tel 717-944-7621

August 10, 2001
5928-01-20195

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 2 (TMI-2)
POSSESSION ONLY LICENSE NO. DPR-73
DOCKET NO. 50-320
UPDATE 4 OF THE POST-DEFUELING MONITORED STORAGE SAFETY ANALYSIS REPORT

Dear Sirs:

Enclosed are the revised pages associated with Update 4 of the Post-Defueling Monitored Storage Safety Analysis Report (PDMS SAR) for TMI-2. The last revision of the PDMS SAR was issued as Update 3 on August 11, 1999. Update 4 revises the PDMS SAR to reflect the current plant configuration and administrative processes. The revised pages are indicated on the list of effective pages, which should be kept in the front of the binder containing the PDMS SAR. Also included are binder sleeves for Update 4.

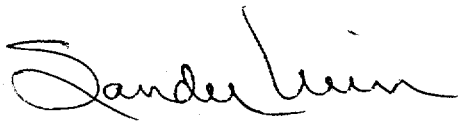
Significant changes in the TMI-2 plant configuration/administration that are reflected in the PDMS SAR, Update 4 include changes to fire system testing that are no longer applicable (Chapter 7), changes to the GPU Nuclear organization (Chapter 10), and changes to reflect the services agreement between AmerGen and GPU Nuclear (Chapter 10). Several other minor changes were made involving plant configuration, conformance to changes in 10CFR50, clarification of flood protection criteria, clarification of drawing references, the title of the TMI Site Emergency Plan, changing the frequency of Reactor Building surveys from semi-annual to annual, clarifying the information regarding land ownership surrounding TMI, and correction of typographical errors. Changes made from Update 3 to Update 4 of the PDMS SAR are identified by bold face type within the document, and a bold line vertically drawn in the margin adjacent to the portion actually changed.

A045

GPU Nuclear will issue the next revision of the PDMS SAR no later than 24 months from the date of this submittal.

Please contact Adam Miller of TMI-1 Regulatory Assurance at (717) 948-8128 if you have any questions regarding Update 4 to the PDMS SAR.

Sincerely,



Sander Levin
GPU Nuclear Cognizant Officer

SL/awm

cc: USNRC TMI Senior Resident Inspector
USNRC TMI-2 Project Manager
NRC Regional Administrator, Region I
Ten (10) Copies to DCD
File 01056

August 10, 2001

UNIT 2 PDMS Safety Analysis Report Instruction Memorandum
UPDATE 4

CORRECT ADDRESS
IF NECESSARY

RETURN TO: Debbie Marshbank, Procedure Distribution Control, South Office Building

Please update your Unit 2 PDMS SAR Update 4 with the Attachments as instructed below. Also, please sign the acknowledgement at the bottom of this memo and return to Debbie Marshbank at the address shown above.

		Remove		Insert	
Appendix	**Section**	**Page No**	**Update**	**Page No**	**Update**
	PDMS SAR Cover Page	1st page of document	3	1st page of document	4
	Table of Contents	TC-1	3	TC-1	4
	Effective Pages	1 - 16	3	1-16	4
	Chapter 1 Cover Page	1st page of Chapter 1 section	2	1st page of Chapter 1 section	None indicated
	1.0	1-i	2	1-i	4
		1.1-5/6	2/2	1.1-5/6	2/4
		1.2-1/2	2/2	1.2-1/2	4/2
		1.2-3	2	1.2-3	4
		1.4-1/2	2/3	1.4-1/2	4/4
		1.4-3/4	3/2	1.4-3/4	4/4
	2.0	2.1-1	3	2.1-1	4
		2.1-4	2	2.1-4	4
	Chapter 3 Cover Page	1st page of Chapter 3 section	2	1st page of Chapter 3 section	None indicated
	3.0	3.1-7/8	2/2	3.1-7/8	4/2
		3.1-11/12	2/2	3.1-11/12	2/4
		3.1-15/16	2/2	3.1-15/16	4/4
		3.1-19/20	2/3	3.1-19/20	2/4
		3.1-21/22	2/3	3.1-21/22	4/3
		3.1.43	3	3.1-43	4
	7.0	7.1-3/4	2/2	7.1-3/4	2/4
		7.1-5/6	3/2	7.1-5/6	4/2
		7.2-7/8	2/2	7.2-7/8	2/4
		7.2-9/10	3/2	7.2-9/10	4/2
		7.2-13/14	2/2	7.2-13/14	2/4

			Remove		Insert
Appendix A	**Section**	**Page No.**	**Update**	**Page No.**	**Update**
		7.2-17/18	2/2	7.2-17/18	2/4
		7.2-19/20	2/3	7.2-19/20	2/4
		7.2-23/24	2/2	7.2-23/24	2/4
		7.2-25/26	2/2	7.2-25/26	4/4
		7.2-27/28	2/2	7.2-27/28	2/4
	10.0	10-i	3	10-i	4
		10-ii	2	10-ii	4
		10.2-1	2	10.2-1	4
		10.3-1	2	10.3-1	4
		10.4-1	2	10.4-1	4
		10.5-1/2	3/3	10.5-1/2	4/4
		10.5-3	3	10.5-3	4
		10.5-4	3	10.5-4	4

Additional Instructions/Comments

These replacement pages are the revised pages associated with Update 4 of the PDMS SAR.

NOTE: Also included in this package are binder sleeves for Update 4.

_____ _____ _____

(Signature) (Ext. No.) (Date)

TMI-2

POST DE-FUELING

MONITORED STORAGE

SAFETY ANALYSIS

REPORT

UPDATE 4
August 2001

TABLE OF CONTENTS

List of Effective Pages

Page #	Update #	Date
TC-1	**4**	**8/01**
1-i	**4**	**8/01**
1.1-1	2	8/97
1.1-2	2	8/97
1.1-3	2	8/97
1.1-4	2	8/97
1.1-5	2	8/97
1.1-6	**4**	**8/01**
1.2-1	**4**	**8/01**
1.2-2	2	8/97
1.2-3	**4**	**8/01**
1.3-1	2	8/97
1.3-2	2	8/97
1.3-3	2	8/97
1.3-4	2	8/97
1.3-5	2	8/97
1.4-1	**4**	**8/01**
1.4-2	**4**	**8/01**
1.4-3	**4**	**8/01**
1.4-4	**4**	**8/01**
1.4-5	2	8/97
1.4-6	2	8/97
1.4-7	2	8/97
1.4-8	2	8/97
1.4-9	2	8/97
1.5-1	2	8/97

List of Effective Pages

Page #	Update #	Date
2-i	2	8/97
2-ii	2	8/97
2.1-1	**4**	**8/01**
2.1-2	2	8/97
2.1-3	2	8/97
2.1-4	**4**	**8/01**
2.2-1	2	8/97
2.3-1	2	8/97
2.4-1	2	8/97
2.4-2	3	8/99
2.4-3	2	8/97
2.4-4	2	8/97
2.4-5	2	8/97
2.4-6	2	8/97
2.5-1	2	8/97
3-i	2	8/97
3-ii	2	8/97
3-iii	2	8/97
3-iv	2	8/97
3-v	2	8/97
3-vi	2	8/97
3-vii	2	8/97
3-viii	2	8/97
3-ix	2	8/97
3-x	2	8/97
3-xi	2	8/97

List of Effective Pages

Page #	Update #	Date
3-xii	2	8/97
3-xiii	2	8/97
3.1-1	2	8/97
3.1-2	3	8/99
3.1-3	2	8/97
3.1-4	2	8/97
3.1-5	2	8/97
3.1-6	2	8/97
3.1-7	**4**	**8/01**
3.1-8	2	8/97
3.1-9	2	8/97
3.1-10	3	8/99
3.1-11	2	8/97
3.1-12	**4**	**8/01**
3.1-13	3	8/99
3.1-14	2	8/97
3.1-15	**4**	**8/01**
3.1-16	**4**	**8/01**
3.1-17	2	8/97
3.1-18	2	8/97
3.1-19	2	8/97
3.1-20	**4**	**8/01**
3.1-21	**4**	**8/01**
3.1-22	3	8/99
3.1-23	2	8/97
3.1-24	2	8/97

List of Effective Pages

Page #	Update #	Date
3.1-25	2	8/97
3.1-26	2	8/97
3.1-27	2	8/97
3.1-28	2	8/97
3.1-29	2	8/97
3.1-30	2	8/97
3.1-31	2	8/97
3.1-32	2	8/97
3.1-33	2	8/97
3.1-34	2	8/97
3.1-35	2	8/97
3.1-36	2	8/97
3.1-37	2	8/97
3.1-38	2	8/97
3.1-39	2	8/97
3.1-40	2	8/97
3.1-41	2	8/97
3.1-42	2	8/97
3.1-43	**4**	**8/01**
3.2-1	2	8/97
3.2-2	2	8/97
3.2-3	2	8/97
3.2-4	2	8/97
3.3-1	2	8/97
3.3-2	2	8/97
3.4-1	2	8/97

List of Effective Pages

Page #	Update #	Date
3.5-1	2	8/97
3.5-2	2	8/97
3.5-3	2	8/97
3.6-1	2	8/97
3.7-1	2	8/97
3.7-2	2	8/97
3.7-3	2	8/97
3.7-4	2	8/97
3.7-5	2	8/97
3.7-6	2	8/97
3.7-7	2	8/97
3.7-8	2	8/97
3.7-9	2	8/97
3.7-10	2	8/97
3.7-11	2	8/97
3.7-12	2	8/97
3.7-13	2	8/97
4-i	2	8/97
4-ii	2	8/97
4-iii	2	8/97
4-iv	2	8/97
4.0-1	2	8/97
4.1-1	2	8/97
4.1-2	2	8/97
4.1-3	2	8/97
4.1-4	2	8/97

List of Effective Pages

Page #	Update #	Date
4.1-5	2	8/97
4.2-1	2	8/97
4.3-1	2	8/97
4.3-2	2	8/97
4.3-3	2	8/97
4.3-4	2	8/97
4.3-5	2	8/97
4.3-5a	2	8/97
4.3-5b	2	8/97
4.3-6	2	8/97
4.3-7	2	8/97
4.3-8	1	6/95
4.3-9	1	6/95
4.3-10	1	6/95
4.3-11	1	6/95
4.3-12	1	6/95
4.3-13	1	6/95
4.3-14	1	6/95
4.3-15	1	6/95
4.3-16	1	6/95
4.3-17	2	6/95
4A-1	2	8/97
4A-2	2	8/97
4A-3	2	8/97
4A-4	2	8/97
4A-5	2	8/97

List of Effective Pages

Page #	Update #	Date
4A-6	2	8/97
4A-7	2	8/97
4A-8	2	8/97
5-i	2	8/97
5-ii	2	8/97
5-iii	2	8/97
5-iv	2	8/97
5-v	2	8/97
5-vi	2	8/97
5-vii	2	8/97
5.0-1	2	8/97
5.1-1	2	8/97
5.1-2	2	8/97
5.1-3	2	8/97
5.1-4	2	8/97
5.1-5	2	8/97
5.2-1	2	8/97
5.2-2	2	8/97
5.3-1	2	8/97
5.3-2	2	8/97
5.3-3	2	8/97
5.3-4	2	8/97
5.3-5	2	8/97
5.3-6	2	8/97
5.3-7	2	8/97
5.3-8	2	8/97

List of Effective Pages

Page #	Update #	Date
5.3-9	2	8/97
5.3-10	2	8/97
5.3-11	2	8/97
5.3-12	2	8/97
5.3-13	2	8/97
5.3-14	2	8/97
5.3-15	2	8/97
5.3-16	2	8/97
5.3-17	2	8/97
5.3-18	2	8/97
5.3-19	2	8/97
5.3-20	2	8/97
5.3-21	2	8/97
5.3-22	2	8/97
5.3-23	2	8/97
5.3-24	2	8/97
5.A-1	2	8/97
5.A-2	2	8/97
5.A-3	2	8/97
5.A-4	2	8/97
5.A-5	2	8/97
5.A-6	2	8/97
5.A-7	2	8/97
5.A-8	2	8/97
5.A-9	2	8/97
5.A-10	2	8/97

List of Effective Pages

Page #	Update #	Date
5.A-11	2	8/97
5.A-12	2	8/97
5.A-13	2	8/97
5.A-14	2	8/97
5.A-15	2	8/97
5.A-16	2	8/97
5.A-17	2	8/97
5.A-18	2	8/97
5.A-19	2	8/97
5.A-20	2	8/97
5.A-21	2	8/97
5.A-22	2	8/97
5.A-23	2	8/97
5.A-24	2	8/97
5.A-25	2	8/97
5.A-26	2	8/97
5.A-27	2	8/97
5.A-28	2	8/97
5.A-29	2	8/97
5.B-1	2	8/97
5.B-2	2	8/97
5.B-3	2	8/97
5.B-4	2	8/97
6-i	2	8/97
6-ii	2	8/97
6-iii	2	8/97

List of Effective Pages

Page #	Update #	Date
6-iv	2	8/97
6-v	2	8/97
6-vi	2	8/97
6-vii	2	8/97
6-viii	2	8/97
6-ix	2	8/97
6-x	2	8/97
6-xi	2	8/97
6-xii	2	8/97
6.0-1	3	8/99
6.1-1	3	8/99
6.1-2	2	8/97
6.1-3	3	8/99
6.1-4	3	8/99
6.1-5	2	8/97
6.2-1	3	8/99
6.2-2	2	8/97
6.2-3	2	8/97
6.2-4	2	8/97
6.2-5	2	8/97
6.2-6	2	8/97
6.2-7	3	8/99
6.2-8	2	8/97
6.2-9	2	8/97
6.2-10	2	8/97
6.2-11	2	8/97

List of Effective Pages

Page #	Update #	Date
6.2-12	2	8/97
6.2-13	2	8/97
6.2-14	2	8/97
6.2-15	2	8/97
6.2-16	2	8/97
6.2-17	2	8/97
6.2-18	2	8/97
6.2-19	3	8/99
6.2-20	2	8/97
6.2-21	3	8/99
6.2-22	3	8/99
6.2-23	2	8/97
6.3-1	2	8/97
6.3-2	2	8/97
6.3-3	2	8/97
6.3-4	2	8/97
6.3-5	2	8/97
6.3-6	2	8/97
6.3-7	2	8/97
6.4-1	2	8/97
6.5-1	2	8/97
6.5-2	2	8/97
6.5-3	3	8/99
6.5-4	3	8/99
6.5-5	2	8/97
6.5-6	2	8/97

List of Effective Pages

Page #	Update #	Date
6.5-7	2	8/97
6.5-8	3	8/99
6.5-9	3	8/99
6.5-10	3	8/99
7-i	2	8/97
7-ii	2	8/97
7-iii	2	8/97
7-iv	2	8/97
7-v	2	8/97
7-vi	2	8/97
7-vii	2	8/97
7-viii	2	8/97
7.0-1	2	8/97
7.1-1	2	8/97
7.1-2	2	8/97
7.1-3	2	8/97
7.1-4	**4**	**8/01**
7.1-5	**4**	**8/01**
7.1-6	2	8/97
7.1-7	2	8/97
7.1-8	2	8/97
7.1-9	2	8/97
7.2-1	2	8/97
7.2-2	2	8/97
7.2-3	2	8/97
7.2-4	2	8/97

List of Effective Pages

Page #	Update #	Date
7.2-5	2	8/97
7.2-6	2	8/97
7.2-7	2	8/97
7.2-8	**4**	**8/01**
7.2-9	**4**	**8/01**
7.2-10	2	8/97
7.2-11	2	8/97
7.2-12	2	8/97
7.2-13	2	8/97
7.2-14	**4**	**8/01**
7.2-15	2	8/97
7.2-16	2	8/97
7.2-17	2	8/97
7.2-18	**4**	**8/01**
7.2-19	2	8/97
7.2-20	**4**	**8/01**
7.2-21	2	8/97
7.2-22	2	8/97
7.2-23	2	8/97
7.2-24	**4**	**8/01**
7.2-25	**4**	**8/01**
7.2-26	**4**	**8/01**
7.2-27	2	8/97
7.2-28	**4**	**8/01**
7.2-29	2	8/97
7.2-30	2	8/97

List of Effective Pages

Page #	Update #	Date
7.2-31	2	8/97
7.2-32	2	8/97
7.2-33	2	8/97
7.2-34	2	8/97
7.2-35	2	8/97
7.2-36	2	8/97
7.2-37	3	8/99
7.2-38	2	8/97
7.2-39	2	8/97
7.2-40	2	8/97
7.2-41	2	8/97
7.2-42	2	8/97
7.2-43	2	8/97
7.2-44	2	8/97
7.2-45	2	8/97
7.2-46	2	8/97
7.2-47	2	8/97
7.2-48	2	8/97
7.2-49	2	8/97
7.2-50	2	8/97
7.2-51	2	8/97
7.2-52	2	8/97
8-i	1	6/95
8-ii	1	6/95
8.1-1	2	8/97
8.1-2	2	8/97

List of Effective Pages

Page #	Update #	Date
8.1-3	2	8/97
8.1-4	2	8/97
8.1-5	2	8/97
8.1-6	2	8/97
8.1-7	2	8/97
8.1-8	2	8/97
8.1-9	2	8/97
8.1-10	2	8/97
8.1-11	2	8/97
8.1-12	2	8/97
8.1-13	2	8/97
8.2-1	2	8/97
8.2-2	2	8/97
8.2-3	2	8/97
8.2-4	2	8/97
8.2-5	2	8/97
8.2-6	2	8/97
8.2-7	2	8/97
8.2-8	2	8/97
8.2-9	2	8/97
8.2-10	2	8/97
8.2-11	2	8/97
8.2-12	2	8/97
Chapter 9		
Deleted		
10-i	**4**	**8/01**

List of Effective Pages

Page #	Update #	Date
10-ii **(Deleted)**	**4**	**8/01**
10.0-1	2	8/97
10.1-1	2	8/97
10.2-1	**4**	**8/01**
10.3-1	**4**	**8/01**
10.4-1	**4**	**8/01**
10.5-1	**4**	**8/01**
10.5-2	**4**	**8/01**
10.5-3	**4**	**8/01**
10.5-4	**4**	**8/01**

CHAPTER 1

INTRODUCTION AND

GENERAL DESCRIPTION OF PLANT

CHAPTER 1
INTRODUCTION AND GENERAL DESCRIPTION OF PLANT
TABLE OF CONTENTS

LIST OF FIGURES

TMI-2 has been maintained in a safe, monitored condition throughout the transition period prior to PDMS, and will be maintained accordingly following implementation of PDMS even though some transition activities are ongoing. A commitment tracking process was established to verify the status and completion of all activities performed in preparation for PDMS and during the PDMS transition period to ensure all required activities described in this SAR are completed.

1.1.3 APPLICABLE REGULATIONS

GPU Nuclear received an amended facility license for TMI-2 in accordance with the provisions of Title 10 to the Code of Federal Regulations, Part 50 (10 CFR 50). The provisions of 10 CFR 50, as established, were intended to be applicable to an operable nuclear power plant. For this reason, many of the requirements originally imposed on TMI-2 no longer apply or can be substantially reduced in scope because of the status of TMI-2 during PDMS. Because nuclear criticality has been precluded with removal of substantially all of the fuel from TMI-2, and because radiation hazards have been substantially reduced due to the immobilization of essentially all of the radioactivity remaining in the plant, many systems, structures, and components are no longer required and the regulations governing these systems, structures, and components have a significantly reduced scope of applicability at TMI-2.

In order to assure compliance with the appropriate requirements of the regulations in 10 CFR 50, a thorough review of these regulations was undertaken. Chapter 3 of this SAR presents the results of that review and serves as the basis for determining which regulations have a controlling impact on TMI-2.

The determination of applicability does not suggest that some regulations can be ignored. Rather, the intent of some regulations can be met with no impact or additional requirements imposed due to the PDMS status of TMI-2.

1.1.4 SAFETY-RELATED STRUCTURES, SYSTEMS, AND COMPONENTS

There are no structures, systems, or components classified as safety-related at TMI-2 during PDMS. GPU Nuclear procedures define safety-related structures, systems, and components as those which are necessary to ensure:

a. The integrity of the reactor coolant pressure boundary,

b. The capability to shutdown the reactor and to maintain it in a safe shutdown condition, or

c. The capability to prevent or mitigate the consequences of accidents which could result in potential off-site exposures comparable to the guidelines exposures of 10 CFR Part 100.

Criterion a requires maintenance of the reactor coolant pressure boundary. Due to the defueled condition of TMI-2, there is no reactor coolant or reactor coolant pressure boundary required.

Criterion b requires a capability to shutdown the reactor and maintain it in a safe shutdown condition. In its current defueled state, there are no structures, systems, or components required to maintain a safe shutdown condition.

Criterion c requires a capability to prevent or mitigate the consequences of accidents that could result in potential off-site exposures comparable to the 10 CFR Part 100 guidelines. Analysis demonstrates (see Chapters 4 and 8) that there are no postulated events that result in releases greater than 10 CFR 50 Appendix I guidelines. Since 10 CFR 50 Appendix I is more restrictive, there are no postulated events

which could result in exposures comparable to 10 CFR Part 100 guidelines.

Due to the non-operating and defueled status of TMI-2 during PDMS, there are no structures, systems, or components which are required to meet the safety-related criteria. Therefore, there are no structures, systems, or components classified as safety-related at TMI-2 during PDMS.

1.1.5 DEVELOPMENT OF ACCEPTABLE OFF-SITE DOSE CRITERIA

Various regulations establish permissible limits for off-site radiation exposures resulting from the operation of licensed nuclear reactors and other nuclear fuel cycle activities. These regulations include 10 CFR 20, 10 CFR 50 Appendix I, 10 CFR 100, 40 CFR 190, and the EPA Protective Action Guidelines. The licensing basis for off-site dose criteria for PDMS has been derived from these existing regulations and applicable precedents. Specifically, 10 CFR 50 Appendix I, which is recognized as demonstrably safe with respect to radiological implications, has been established as the PDMS standard. A small fraction (i.e., less than 10%) of the Appendix I off-site dose guidelines is expected to be maintained for normal conditions prevailing during PDMS. The potential off-site radiological doses resulting from postulated off-normal conditions will be within the 10 CFR 50 Appendix I guidelines.

Due to the non-operating and defueled status of TMI-2, a major radiological release approaching the guidelines of 10 CFR 100 is no longer credible. As noted above, Appendix I guidelines have been selected as the limiting criteria for the evaluation of unanticipated events as an unarguable, demonstrably, conservative basis. This ultra-conservative approach far exceeds the regulatory limits for unanticipated events in operating nuclear power plants.

1.1.6 RELATIONS OF THIS PDMS SAR TO THE EXISTING UNIT 1 UFSAR AND UNIT 2 FSAR

This PDMS SAR makes reference to relevant portions of the Unit 1 UFSAR or the Unit 2 FSAR. The TMI-1 UFSAR will continue to be updated as required, and the updated document will be applicable for those changing site-related conditions that have a bearing on TMI-2. The TMI-2 FSAR will not be updated but will continue to be applied as appropriate to TMI-2 in the PDMS condition. In particular, the bounding conditions in the TMI-2 FSAR as augmented by the PDMS SAR will be used to judge the acceptability of changes, tests, and experiments **with regard to 10CFR50.59**. The TMI-2 FSAR also applies for those areas not addressed by this PDMS SAR.

1.2 GENERAL PLANT DESCRIPTION

On March 28, 1979, Three Mile Island Unit 2 experienced an accident which severely damaged the reactor core. In the ensuing years, the reactor core has been removed and shipped to the Idaho National Engineering Laboratory for analysis and long-term storage. In addition, the facility has been substantially decontaminated and is in a stable and benign condition suitable for long-term management.

Three Mile Island Unit 2 was originally designed to comply with the seventy General Design Criteria of 10 CFR 50, Appendix A, dated July 11, 1967 and addressed plant design with respect to the Revised General Design Criteria dated July 15, 1971. Due to the defueled and non-operating status of TMI-2 during PDMS, many of these criteria no longer apply to the facility. A review of the General Design Criteria, revised as of January 1, 1987, is included in Section 3.1 of this SAR.

The general arrangement of major equipment and structures, including the Reactor, Auxiliary, and Turbine Buildings is shown on Drawings listed in Table 1.4-1.

1.2.1 SITE CHARACTERISTICS

The site is located on the Susquehanna River about ten miles southeast of Harrisburg, Pennsylvania. It is characterized by a 2,000 foot minimum exclusion distance; a two mile radius low population zone; sound bedrock as a structural foundation; an ample supply of emergency off-site power and favorable conditions of hydrology, geology, seismology and meteorology. The land within a ten mile radius of the site is used primarily for farming.

There are two airports within ten miles of the site. Harrisburg International Airport (formerly Olmsted State Airport) is located approximately two and one-half miles northwest of the site, and the Capitol City Airport is located approximately eight miles west-northwest of the site.

1.2.2 CONTAINMENT SYSTEMS

The Containment and associated systems are used during PDMS as the environmental barrier for the residual contamination which remains inside the Containment structure. The Containment encloses the areas and systems which contain essentially all of the contamination which could potentially result in off-site exposures.

1.2.2.1 Containment

The primary function of the Containment during PDMS is as a contamination barrier. The Containment will provide shielding of the environment from the radiation inside the Containment, and will also provide the means to assure that any effluents from the Containment will be controlled, filtered, and monitored.

The Containment is a reinforced concrete structure composed of cylindrical walls with a flat foundation mat and a dome roof lined with carbon steel. The structure provides biological shielding for normal and unanticipated conditions. The steel liner encloses the equipment and systems which remain inside the Containment and ensures that the upper limit of potential leakage of radioactive material will not be exceeded under the worst unanticipated event.

1.2.2.2 Containment Isolation Valves

The Containment isolation valves were designed to provide a barrier on the system lines which penetrate

the Containment so that no event can result in loss of isolation or intolerable leakage. In most cases, the valves are installed both inside and outside the Reactor Building on each system line. Only one valve is required for isolation during PDMS. All valves used for containment isolation during PDMS are normally closed and locked, closed and deactivated or closed and administratively maintained closed except for the breather isolation valve and RB pressure indication piping which are normally open.

1.2.2.3 Containment Atmospheric Breather

The Containment Atmospheric Breather has been added to the Containment to provide passive pressure control of the Containment relative to ambient atmospheric pressure (via the AFHB) and to establish a "most probable pathway" through which the Containment will "breathe". The breather is a passive system consisting of a 6 in. diameter duct with a HEPA filter. Providing this filtered pathway will ensure insignificant leakage through any uncontrolled pathway. The Containment Atmospheric Breather is described in more detail in Section 7.2.1.2.

1.2.3 FIRE PROTECTION, SERVICE, AND SUPPRESSION

Fire Protection is provided during PDMS to minimize the potential of a release of radioactive material due to a fire in a contaminated area, to protect those systems which are maintained operational during PDMS, and to minimize the liability and property risk from potential fires.

These objectives have been achieved through a combination of (1) minimizing the potential for a fire by minimizing combustible materials and ignition sources and (2) by providing a system of detection and suppression suitable to deal with any potential fire.

1.2.4 RADIOACTIVE WASTE MANAGEMENT

The generation of radioactive waste during PDMS will be minimal. A small amount of radioactive waste will be generated from the processing of water inleakage to contaminated areas, small decontamination tasks, and surveillance and maintenance activities. Liquid radwaste will be collected in the various sumps and handled through the liquid radwaste disposal system. Other radwastes will be collected and disposed of as appropriate.

1.2.5 RADIATION MONITORING

During PDMS, radiation monitors will be maintained operational to provide for evaluation of airborne radiological conditions. This requires monitoring the Reactor Building exhaust ventilation and the

station vent during periods when a ventilation system is operating. The monitors will provide the necessary information to evaluate environmental releases and air quality conditions in the plant. This monitoring will provide a basis for determining the total integrated dose to the public.

Monitoring and survey data will provide a basis for a trend analysis to ensure that the plant is maintained in a stable condition and enables timely corrective actions, if necessary.

1.2.6 ELECTRICAL SYSTEMS

During PDMS, portions of the TMI-2 AC and DC electrical systems will be maintained operational to provide reliable power to PDMS support systems, controls, and instrumentation. Electrical equipment not required for PDMS support **is minimized** to enhance overall plant safety, **nearly all such items have been deactivated.**

1.2.7 PDMS SUPPORT SYSTEMS

Other systems necessary to support PDMS activities also have been provided. The ventilation systems for the Auxiliary, Fuel Handling, Control and Service Buildings will be maintained operational to provide ventilation capabilities in those areas. Compressed air, sewers, domestic water, and other systems have been provided for use, as necessary.

1.2.8 FACILITIES AND SYSTEMS RELEASED FOR SITE USE

As a result of the accident, unique situations developed which could not be properly managed with the existing facilities or systems which were designed for normal operating power plant use. Several systems were designed and fabricated to process the radioactive wastes resulting from cleanup activities. Upon completion of cleanup activities, several of these facilities were released to general site use (and included under the TMI-1 license). These systems and facilities include:

1. Auxiliary Building Emergency Liquid Cleanup (EPICOR II)
2. Waste Handling and Packaging Facility
3. Interim Solid Waste Storage Facility
4. Solid Waste Staging Facility
5. Respirator Cleaning and Laundry Maintenance Facility
6. Solid Waste Storage Building
7. Processed Water Storage Facility

1.4 PRESENTATION

1.4.1 DRAWINGS

Drawings listed in Table 1.4-1 are referenced throughout the text of the PDMS SAR. Copies of the current revision of each drawing are readily available at the Three Mile Island Nuclear Station. Drawing 2001, P & ID Symbol Identification, provides explanation for symbols used in non-electrical drawings. Drawing 3001, Electrical Symbol List, provides explanation for symbols used in electrical drawings.

1.4.2 ABBREVIATIONS AND ACRONYMS

Abbreviations and acronyms which are used in this document are listed in Table 1.4-2.

TABLE 1.4-1
DRAWINGS

TITLE	DWG. NO.
Site Plan	1E-120-01-001
Reactor Building Basement Floor	2060
Reactor Building Ground Floor	2061
Reactor Building Operating Floor	2062
Reactor Building Section A-A	2063
Reactor Building Sections B-B, C-C, D-D	2064
Auxiliary and Fuel Handling Building, Basement and Sub-Basement Floor	2065
Auxiliary and Fuel Handling Building, Ground Floor	2066
Auxiliary and Fuel Handling Building, First Floor	2067
Auxiliary and Fuel Handling Floor Building, Operating	2068
Auxiliary and Fuel Handling Building, Sections A-A and B-B	2069
Auxiliary and Fuel Handling Building, Section C-C	2070
Auxiliary and Fuel Handling Building, Section D-D	2071
Auxiliary and Fuel Handling Building, Section E-E	2072
Control and Service Building, Lower Floor Plans	2380
Control and Service Building, Upper Floor Plans	2381
Control and Service Building, Sections	2382
River Water Pump House	2338

TABLE 1.4-1 (Cont'd)
DRAWING REFERENCES

TITLE	DWG. NO.
DELETED	
Turbine Building Basement Plan - East Side	2051
Turbine Building Basement Plan - West Side	2052
Turbine Building Ground Floor Plan - East Side	2053
Turbine Building Ground Floor Plan - West Side	2054
Turbine Building Operating Floor - East Side	2055
Turbine Building Operating Floor - West Side	2056
Turbine Building Section B-B	2057
Turbine Building Sections A-A and C-C	2058
Turbine Building Sections D-D and E-E	2059
P&ID Symbol Identification	2001
Electrical Symbol List	3001
Reactor Building Ventilation and Purge	302-2041
Fire Protection	302-231
Radwaste Disposal Miscellaneous Liquids	302-2045
Radwaste Pumps Seal Water	302-2492
Sump Pump Discharge and Miscellaneous Sumps	302-2496
Building Air Intake, Exhaust, and Radiation Monitoring	302-2219
13.2 KV One Line Diagram	206201
480 Volt Unit Substation	206202
480 Volt Unit Substation	206203
480 Volt Unit Substation	206204
120V Regulated Voltage System	3009

TABLE 1.4-1 (Cont'd)
DRAWING REFERENCES

TITLE	DWG. NO.
DC One Line Diagram	3010
480V USS 2-38, 2-48 One Line Diagram	E013
Reactor Building Portable Power Distr. Center	2-E21-011
Reactor Building Portable Power Distr. Center	2-E21-012
Power Distribution Key Diagram	3015
Power Distribution Panel Schedules	3016
Miscellaneous Power Panel Schedules	3017 Sh. 1
Miscellaneous Power Panel Schedules	3017 Sh. 2
Miscellaneous Power Panel Schedules	3017 Sh. 3
Auxiliary Building Heating and Ventilation	302-2042
Fuel Handling Building Heating and Ventilation	302-2343
Instrument Air Supply	302-2012 Sht. 1
Compressed Air Supply	302-2012 Sht. 2
Service Air	302-2014 Sht. 3

PDMS SAR FIGURES

TITLE	PDMS SAR FIG. NO.
General Area Map	2.1-1
Site Topography 5 Mile Radius	2.1-2
Extended Plot Plan	2.1-3
Flood Water Surface Profiles	2.4-1
Details of Effluent Discharge System	2.4-2
Reactor Building - General Layout	3.7-1
Reactor Building Personnel and Equipment Access Openings Detail	3.7-2

CHAPTER 2

SITE CHARACTERISTICS

2.1 GEOGRAPHY AND DEMOGRAPHY

2.1.1 SITE LOCATION

Three Mile Island is located approximately 2-1/2 miles south of Middletown, Pennsylvania at longitude 76° 43' 30" west and at latitude 40° 9' 15" north. The Unit 2 reactor vessel coordinates are N300, 324.40; E2, 286, 366.04, based on the Pennsylvania State coordinate system (UTM coordinates, Zone 18, 4,446, 020 meters north, 353,070 meters east). It is one of the largest of a group of several islands in the Susquehanna River and is situated about 900 ft. from the east bank. It is elongated parallel to the flow of the river, with its 11,000 ft. in length and 1700 ft. in width. TMI-2 is located in the northern one-third of the island.

The southeasterly-flowing Susquehanna River makes a sharp change in direction, to nearly due south, in the vicinity of Middletown. After this directional change just north of Three Mile Island, the channel widens to approximately 1.5 miles.

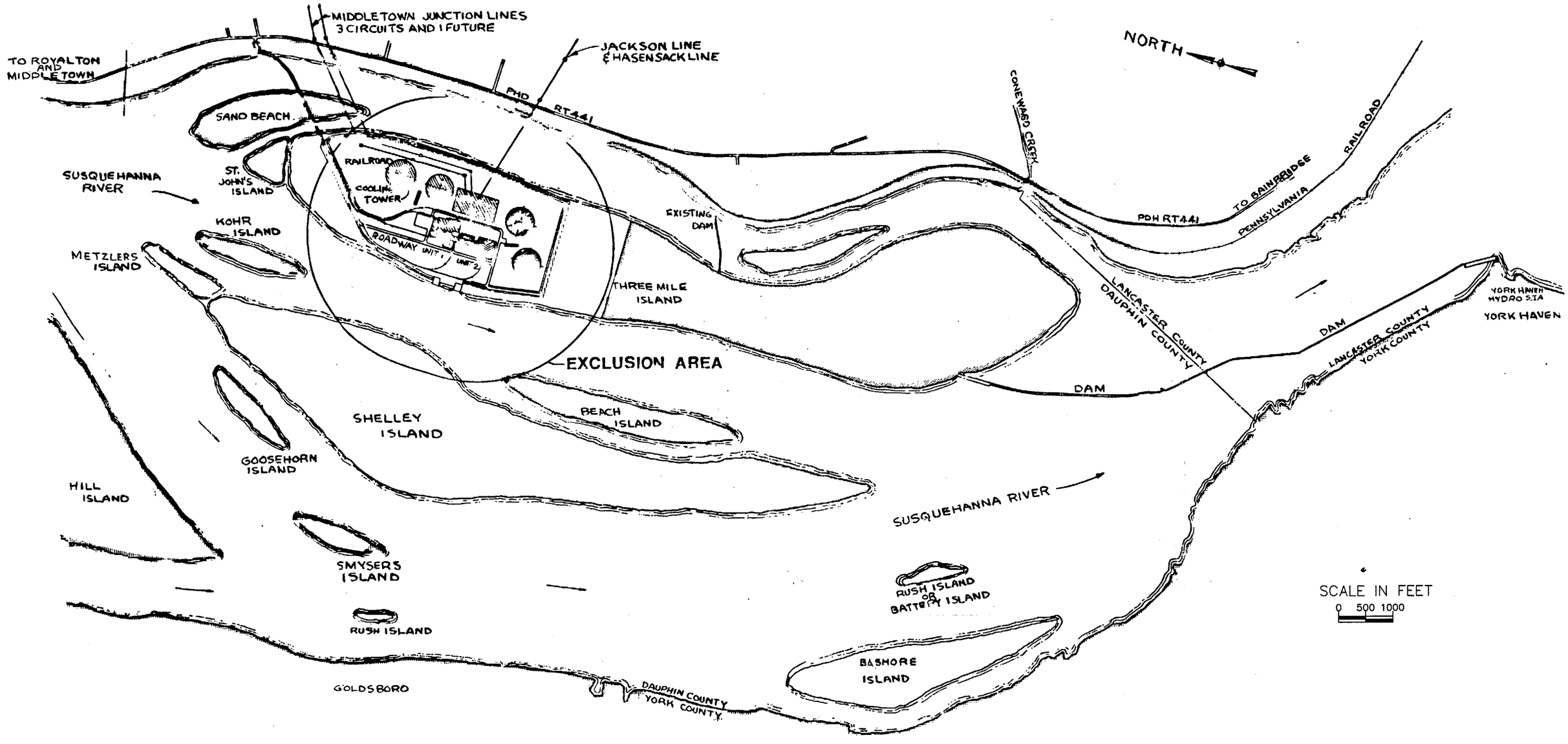
The Three Mile Island Nuclear Station, Unit 2 is located adjacent to Unit 1 in Londonderry Township of Dauphin County, Pennsylvania, about 2-1/2 miles north of the southern tip of Dauphin County, where Dauphin is coterminal with York and Lancaster counties. Its location with respect to regional topographic and cultural features is shown on Figure 2.1-1 and with respect to local features on Figure 2.1-2. The station is located on Three Mile Island situated in the Susquehanna River upstream from York Haven Dam.

2.1.2 SITE DESCRIPTION

Figure 2.1-3 shows the site marked to indicate the Site and the minimum exclusion distance. For accident evaluations, the distance to the site boundary in each direction is used. Those distances may be derived from Figure 2.1-3.

2.1.3 POPULATION AND POPULATION DISTRIBUTION

The population and population demographics are given in Section 2.2 of the TMI Unit 1 UFSAR. This information is updated as appropriate with the Unit 1 UFSAR updates.



UPDATE 4 - AUGUST 2001
EXTENDED PLOT PLAN
FIGURE 2.1-3
PAGE 2.1-4

CAD FILE: 6715R3

CHAPTER 3

DESIGN CRITERIA – STRUCTURES, SYSTEMS, AND COMPONENTS

related to monitoring and maintaining the facility in a stable condition. Although the specific requirements of this paragraph do not apply due to the unique condition of TMI-2 during PDMS, the intent of these provisions has been addressed by providing information concerning activities appropriate during PDMS.

50.34(b)(6)(v)

Paragraph 50.34(b)(6)(v) requires information concerning plans for coping with emergencies, which shall include the items specified in Appendix E. Emergency planning requirements are based on the assumption of the potential necessity to notify the public of the existence of, or potential for significant off-site releases. Appendix E recognizes that emergency planning needs are different for facilities that present less risk to the public. Due to the non-operating and defueled status of TMI-2 during PDMS, there is no potential for any significant off-site radioactive release. Further, due to the existence of TMI-1 on the same site, emergency planning requirements for the site are dominated by TMI-1. **Therefore, the limited emergency planning necessary to accommodate the existence of TMI-2 on the same site as TMI-1 has been incorporated in one integrated emergency plan. There exists only one Emergency Preparedness Plan for the TMI station. The Plan encompasses both TMI-1 and TMI-2 and is under the authority of AmerGen, the TMI-1 License holder.**

50.34(b)(6)(vi)

Paragraph 50.34(b)(6)(vi) requires information concerning proposed technical specifications prepared in accordance with the requirements of Article 50.36. Due to the unique condition of TMI-2 during PDMS, the specific requirements of Article 50.36 are not applicable; however, the intent of this article has been addressed. Rev. 0 of the PDMS SAR provided draft Technical Specifications (Tech. Specs.). The NRC subsequently, issued TMI-2 Technical Specifications as Appendix A to the Possession-Only License for PDMS. The draft Tech. Specs. in Chapter 9 have been deleted from the PDMS SAR to prevent confusion between the draft and the actual Tech. Specs.

50.34(b)(6)(vii)

Paragraph 50.34(b)(6)(vii) requires information concerning the construction of multiunit power plant sites. These requirements are not applicable to TMI-2 during PDMS.

50.34(b)(7)

Paragraph 50.34(b)(7) requires the SAR to include the technical qualifications of the applicant to engage in the proposed activities in accordance with the regulations in this chapter. The technical qualifications of GPU Nuclear, which are applicable to activities related to the unique PDMS conditions, are provided in Section 10.5.

50.34(b)(8)

Paragraph 50.34(b)(8) requires the SAR to include a description and plans for implementation of an operator requalification program. The operator requalification program shall, as a minimum, meet the requirements for those programs contained in Appendix A of Part 55 of this chapter. Due to the nonoperating and defueled status of TMI-2 during PDMS, the requirements for licensed reactor operators do not apply and consequently the requirements for operator requalification also do not apply.

50.34(b)(9)

Paragraph 50.34(b)(9) requires a description of protection provided against pressurized thermal shock events. Due to the non-operating and defueled status of TMI-2 during PDMS, the requirements of paragraph 50.34(b)(9) do not apply. In addition, TMI-2 was granted an exemption to 10 CFR 50.61 (Reference 3.1-1) which acknowledged that TMI-2 need take no measures to protect against pressurized thermal shock.

50.34(c)

Paragraph 50.34(c) requires each application for a license to operate a production or utilization facility to include a physical security plan. Due to the unique condition of TMI-2 during PDMS, the specific requirements of this paragraph are not applicable; however, the intent of the requirements has been addressed in this SAR. The security provisions necessary for TMI-2 have been provided by locating the unit inside the same protected area as TMI Unit 1 and the provisions incorporated in the TMI site security plan referenced in Section 10.2.

50.34(d)

Paragraph 50.34(d) requires that each application for a license to operate a production or utilization facility that is subject to Article 73.50, Article 73.55, or Article 73.60 shall include a licensee safeguards contingency plan in accordance with the criteria set forth in Appendix C to 10 CFR Part 73. The safeguards contingency provisions necessary for TMI-2 are provided by being located inside the same protected area as TMI-1 and are incorporated in the safeguards contingency plan for the TMI site. See Section 10.2.

50.34(e)

Paragraph 50.34(e) requires that each applicant for a license to operate a production or SC. utilization facility who prepared a physical security plan, a safeguards contingency plan, or a guard qualification and training plan shall protect the plans and other related Safeguards Information against unauthorized disclosure in accordance with the requirements of 10 CFR 73.21 as appropriate. Due to the non-operating and defueled

3.1.1.28 10 CFR 50.39 - Public Inspection of Applications

Article 50.39 states that applications and documents submitted to the Commission may be made available for public inspection. No exceptions are taken to the provisions of this article.

3.1.1.29 10 CFR 50.40 - Common Standards

Article 50.40 establishes guidelines for the Commission in determining if a License will be issued to an applicant. No exceptions are taken to the provisions of this article.

3.1.1.30 10 CFR 50.41 - Additional Standards for Class 104 Licenses

Article 50.41 establishes additional standards for class 104 licenses for the Commission to use in determining if a license will be issued to an applicant. The class of license described in this article does not apply to TMI-2.

3.1.1.31

10 CFR 50.42 - Additional Standards for Class 103 Licenses

Article 50.42 establishes additional standards for class 103 licenses for the Commission to use in determining if a license will be issued to an applicant. No exceptions are taken to the provisions of this article.

3.1.1.32 10 CFR 50.43 - Additional Standards and Provisions Affecting Class 103 Licenses for Commercial Power

Article 50.43 establishes additional standards and provisions for class 103 licenses. No exceptions are taken to the provisions of this article.

3.1.1.33 10 CFR 50.44 - Standards for Combustible Gas Control System in Light-Water-Cooled Power Reactors

Article 50.44 **specifically exempts plants that have permanently ceased operations from the requirement to establish a combustible gas control system to be used in the event of a LOCA. This exemption reapplies to TMI-2 during PDMS. Thus, no exceptions to the provisions of this article are necessary**.

3.1.1.34 10 CFR 50.45 - Standards for Construction Permits

Article 50.45 establishes standards for the issuance of a construction permit. No exceptions are taken to the provisions of this article.

3.1.1.35 10 CFR 50.46 - Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Reactors

Article 50.46 specifically exempts plants that have permanently ceased operations from the requirement for emergency core cooling systems for light water nuclear power reactors.. This exemption applies to TMI-2 during PDMS. Thus, no exceptions to the provisions of this article are necessary.

3.1.1.36 10 CFR 50.47 - Emergency Plans

Article 50.47 establishes requirements for the content and criteria for acceptance of emergency plans. Emergency planning requirements are based on the assumption of the potential necessity to notify the public of the existence of, or potential for significant off-site releases. Appendix E recognizes that emergency planning needs are different for facilities that present less risk to the public. Due to the non-operating and defueled status of TMI-2 during PDMS, there is no potential for any significant off-site radioactive release. Due to the existence of TMI-1 on the same site, emergency planning requirements for the site are dominated by TMI-1. Therefore, the limited emergency planning necessary to accommodate the existence of TMI-2 on the same site as TMI-1 has been incorporated **into one** integrated emergency plan. **The Plan encompasses both TMI-1 and TMI-2 and is under the authority of AmerGen, the TMI-1 License holder.** See the discussion of paragraph 50.34(b)(6)(v).

3.1.1.37 10 CFR 50.48 - Fire Protection

Article 50.48 establishes fire protection requirements for plants that have permanently ceased operation. These requirements are applicable to TMI-2 during PDMS.

3.1.1.38 10 CFR 50.49 - Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants

Article 50.49 specifically exempts plants that have permanently ceased operations from the requirements to establish a program for the qualification of electrical equipment important to safety. This exemption applies to TMI-2 during PDMS. Thus, no exceptions are taken to the provisions of this article.

50.54(q)

Paragraph 50.54(q) requires that a licensee shall follow and maintain emergency plans which meet the requirements of paragraph 50.47(b). This paragraph also defines requirements for revising those emergency plans. Due to the existence of TMI-1 on the same site as TMI-2, emergency planning requirements for the site are dominated by TMI-1. Therefore, the limited emergency planning necessary to accommodate the existence of TMI-2 on the same site as TMI-1 has been incorporated **into one** integrated emergency plan. **The Plan encompasses both TMI-1 and TMI-2 and is under the authority of AmerGen, the TMI-1 License holder.**

50.54(r)

Paragraph 50.54(r) establishes requirements for test reactors. These requirements do not apply to TMI-2.

50.54(s)

Paragraph 50.54(s) requires each licensee who is authorized to possess and/or operate a nuclear power reactor to submit radiological emergency plans of state and local governmental entities to the NRC. All radiological emergency planning provisions necessary for TMI-2 have been incorporated in the TMI site emergency planning process, including the provisions of paragraph 50.54(s).

50.54(t)

Paragraph 50.54(t) establishes requirements for the development, revision, implementation and maintenance of the emergency preparedness program for nuclear power reactors. Emergency preparedness requirements applicable to TMI-2 are incorporated in the emergency preparedness program established for the TMI site. See Section 10.3.

50.54(u)

Paragraph 50.54(u) requires each licensee to submit emergency plans in accordance with 10 CFR 50.47(b) and Appendix E. Article 50.47 establishes requirements for the content and criteria for acceptance of emergency plans. Emergency planning requirements are based on the assumption of the potential necessity to notify the public of the existence of, or potential for significant off-site releases. Appendix E recognizes that emergency planning needs are different for facilities that present less risk to the public. Due to the non-operating and defueled status of TMI-2 during PDMS there is no potential for any significant off-site radioactive release and due to the existence of TMI-1 on the same site, emergency planning requirements for the site will be dominated by TMI-1. Therefore, the limited emergency planning necessary to accommodate the existence of TMI-2 on the same site as TMI-1 has been incorporated **into one** integrated emergency plan. **The Plan encompasses both TMI-1 and TMI-2 and is under the authority of AmerGen, the TMI-1 License holder.** See Section 3.1.1.20 regarding paragraph 50.34(b)(6)(v).

50.54(v)

Paragraph 50.54(v) requires that each licensee shall ensure that physical security, safeguards contingency and guard qualification and training plans and other related safeguards information are protected against unauthorized disclosure in accordance with the requirements of 10 CFR 73.21 as appropriate. To the extent that TMI-2 possesses the above information during PDMS, it will be protected from unauthorized disclosure in accordance with 10 CFR 73.21. See paragraphs 50.34(c), 50.34(d) and 50.34(e).

50.54(w)

Paragraph 50.54(w) requires that each electric utility licensed under this part for a production or utilization facility of the type described in paragraph 50.21(b) or paragraph 50.22 shall by June 29, 1982 take reasonable steps to obtain on-site property damage insurance available at reasonable costs and at reasonable terms from private sources. **Reference 3.1-16 exempted TMI-2 from certain requirements of this paragraph. Based on this exemption the appropriate insurance has been acquired and will be maintained for TMI-2.**

50.54(x) and 50.54(y)

Paragraph 50.54(x) allows a licensee to take action which departs from a license condition or technical specification in an emergency when this action is immediately needed to protect the health and safety of the public. Paragraph 50.54(y) requires that for plants that have permanently ceased operation, any action taken pursuant to paragraph 50.54(x) be approved, as a minimum, by a licensed senior operator or a certified fuel handler prior to taking the action. The provisions of this article have limited applicability to TMI-2 during PDMS. Due to the non-operating and defueled status of TMI-2 during PDMS, there are no postulated events which could affect public health and safety in such a manner. In addition, the technical specifications will be of limited scope and it is not anticipated that a condition will exist such that it could become necessary to take action that departs from either a license condition or a technical specification to protect public health and safety. Since TMI-2 will not have licensed senior reactor operators or certified fuel handlers during PDMS, if an extremely unlikely event were to occur necessitating deviation from the technical specifications the action would have to be approved by senior management.

50.54(z)

Paragraph 50.54(z) requires each licensee to notify the NRC Operations Center of the occurrence of any event specified in 10 CFR 50.72. Due to the non-operating and defueled status of TMI-2 during PDMS, there are very few potential events which would require reporting under 10 CFR 50.72. However, to the extent that reporting is required under 10 CFR 50.72, the requirements of this paragraph are applicable. See Section 3.1.1.57 regarding paragraph 10 CFR 50.72.

50.54(aa)

Paragraph 50.54(aa) establishes that the licensee must meet Sections 401(a)(2) and 401(d) of the Federal Water Pollution Control Act. No exceptions are taken to the provisions of this article.

50.54(bb)

Paragraph 50.54(bb) requires licensees of operating nuclear power reactors to acquire NRC approval of the program to fund, manage, and transfer irradiated fuel upon expiration of the reactor operating license. It further requires that Licensees that ceased operation prior to April 4, 1994 to submit their spent fuel management funding plan by April 4, 1996. As the irradiated fuel which comprised the TMI-2 reactor core has been transferred to the possession of the Department of Energy no funding plan is required for TMI-2. A letter documenting this position was submitted to the NRC on May 31, 1994 (C311-94-2077).

50.58(a)

Paragraph 50.58(a) establishes that each application for a construction permit, an operating license, or an amendment to the construction permit or operating license may be referred to the Advisory Committee on Reactor Safeguards. The report from the Advisory Committee on Reactor Safeguards will be made part of the public record. No exceptions are taken to the provisions of this article.

50.58(b)

Paragraph 50.58(b) establishes that the Commission may hold hearings on each application for a construction permit or an operating license for a production or utilization facility of the type described in 10 CFR 50.21(b) or 10 CFR 50.22. No exceptions are taken to the provisions of this paragraph.

3.1.1.49 10 CFR 50.59 - Changes, Tests and Experiments

Article 50.59 establishes the requirements for changes, tests or experiments that affect the facility. No exceptions are taken to the provisions of this article.

3.1.1.50 10 CFR 50.60 - Acceptance Criteria for Fracture Prevention Measures for Lightwater Nuclear Power Reactors for Normal Operation

10 CFR 50.60 specifically exempts plants that have permanently ceased operation from the requirement that all light water nuclear power reactors meet the fracture toughness and material surveillance program requirements for the reactor coolant pressure boundary as set forth in Appendices G and H to 10 CFR 50. This exemption applies to TMI-2 during PDMS. Thus, no exceptions are taken to the provisions of this article.

3.1.1.51 10 CFR 50.61 - Fracture toughness requirements for protection against pressurized thermal shock events.

Article 50.61 specifically exempts plants that have permanently ceased operations from the requirements for protection against pressurized thermal shock in pressurized water nuclear power reactors. This exemption applies to TMI-2 during PDMS. Thus, no exceptions to the provisions of this article are necessary.

3.1.1.52 10 CFR 50.62 - Requirements for reduction of risk from anticipated transients without scram (ATWS) events for light-water-cooled nuclear power reactors.

Article 50.62 specifically exempts plants that have permanently ceased operations from the requirements to have equipment to address ATWS events. This exemption applies to TMI-2 during PDMS. Thus, no exceptions to the provisions of this article are necessary.

3.1.1.53 10 CFR 50.63 - Loss of alternating current power.

Article 50.63 requires that each light-water-cooled nuclear power plant licensed to operate be able to withstand and recover from a station blackout event. Since this application eliminates the legal authority to operate the TMI-2 facility from the license, a subsequent license application would be necessary to resume operation. Therefore, during PDMS the requirements of this article are not applicable to TMI-2.

3.1.1.54 10 CFR 50.64 - Limitations on the use of highly enriched uranium (HEU) in domestic non-power reactors.

Article 50.64 establishes requirements for the issuance of licenses to use highly enriched uranium fuel in non-power reactors. No exceptions are taken to the provisions of this article.

3.1.1.54a 10CFR50.65 - Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"

Article 50.65 specifically exempts plants that have permanently ceased operations from the requirement that each holder of a license to operate and monitor the performance or conditions of structures, systems and components against licensed established goals with the exception of structures, systems and components associated with storage, control, and maintenance of spent fuel in a safe condition. TMI-2's fuel has been shipped off site; thus the requirements of this article do not apply to TMI-2.

3.1.1.54b 10 CFR 50.66 – Requirements for Thermal Annealing of the Reactor Pressure Vessel

Article 50.66 provides a consistent set of requirements for the use of thermal annealing to mitigate the effects of neutron irradiation. Due to the defueled non-operating status of TMI-2 in PDMS, the TMI-2 Reactor Vessel will not be thermally annealed. Thus the requirements of this article do not apply.

3.1.1.54c 10CFR50.67 – Accident Source Term

This article allows holders of operating licenses to replace the traditional source terms used in design basis accident analysis with alternative source terms. As TMI-2 has permanently ceased operation, this rule is not applicable to TMI-2 in PDMS.

3.1.1.54d 10CFR 50.68 - Criticality accident requirements

Article 50.68 provides an alternative method that licensees can use to meet the requirements of 10 CFR 70.24. The NRC granted TMI-2 an exemption to 10 CFR 70.24 (Reference 3.1-14). This exemption applies to TMI-2 during PDMS, thus, no exceptions to the provision of this article are necessary.

3.1.1.55 10 CFR 50.70 - Inspections.

Article 50.70 establishes requirements to permit NRC inspectors to maintain activities at each nuclear power plant site. During PDMS, TMI-2 will be required to support NRC inspection activities to the extent determined necessary by the NRC. No exceptions are taken to the provisions of this article.

3.1.1.56 10 CFR 50.71 - Maintenance of records, making of reports.

Article 50.71 establishes requirements for facility records and updating the Safety Analysis Reports. The requirements of these paragraphs apply to TMI-2 during PDMS.

3.1.1.57 10 CFR 50.72 - Immediate notification requirements for operating nuclear power reactors.

With the exception of paragraphs **50.72(b)(2)(xi) and 50.72(b)(3)(xii)**, the requirements for notification address events or situations which are related to the operation of the power plant and conditions which do, or may compromise the safe operation of the plant or cask storage of spent fuel on-site. Since TMI-2 will be specifically precluded from the operation of the plant during PDMS, the requirements of those paragraphs which relate to power plant operation will not apply. Similarly, since TMI-2's fuel has been shipped off-site, and there is no cask storage on-site, the requirements of the paragraph related to cask storage does not apply.

Paragraphs 50.72(b)(2)(xi) and 50.72(b)(3)(xii) require the reporting of any event or situation related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made, and any event requiring the transport of a radioactively contaminated person to an off-site medical facility for treatment. These requirements are also applicable to TMI-2 during PDMS. With the exception of subparagraph 50.72(a)(4) which is not applicable to TMI-2, required notifications will be made in accordance with paragraph 50.72(a).

3.1.1.58 10 CFR 50.73 - Licensee Event Report System

Article 50.73 requires that the holder of an operating license for nuclear power plant (licensee) shall submit a Licensee Event Report (LER) for any event of the type described in this paragraph within **60** days after the discovery of the event. The requirements of this article are applicable to TMI-2 during PDMS.

3.1.1.58a "Article 50.74 - Notification of Change in Operator or Senior Operator Status"

Article 50.74 requires each Licensee to notify the commission of a change in status of any licensed operator or senior operator. As the TMI-2 reactor has been defueled and the requirement to maintain licensed operators and senior operators at TMI-2 has been eliminated (Reference 3.1-3) this requirement is not applicable to TMI-2 in PDMS.

3.1.1.59 10 CFR 50.75 - Reporting and recordkeeping for decommissioning planning.

Article 50.75 establishes requirements for providing reasonable assurance to the NRC that funds will be available for decommissioning **and periodically reporting the status of these funds to the NRC.**. No exceptions are taken to the provisions of this article. Additionally, Reference 3.1-6 provided the decommissioning funding plan for TMI-2 **required by 50.75(b) and Reference 3.1-15 provided the initial decommissioning fund status required by 50.75 (f) (l).**

3.1.1.60 10 CFR 50.78 -Installation Information and Verification

Article 50.78 requires that, "Each holder of a construction permit shall, if requested by the Commission, submit installation information on Form N-71, permit verification thereof by the International Atomic Energy Agency, and take such other action as may be necessary to implement the US/IAEA Safeguards Agreement, in the manner set forth in Articles 75.6 and 75.11 through 75.14 of this chapter." No exceptions are taken to the provisions of this article.

3.1.1.61 10 CFR 50.80 - Transfer of Licenses

Article 50.80 specifies requirements for transferring a license from one entity to another. No exceptions are taken to the provisions of this article.

3.1.1.62 10 CFR 50.81 - Creditor Regulations

Article 50.81 defines the rights and restrictions applying to any creditor relative to any license issued by the Commission. No exceptions are taken to the provisions of this article.

3.1.1.63 10 CFR 50.82 - Termination of Licenses

Article 50.82 defines the requirements for terminating a license. No exceptions are taken to the provisions of this article.

3.1.1.64 10 CFR 50.90 - Application for Amendment of License or Construction Permit

Article 50.90 establishes that a holder of a license must file an application for an amendment, describing the changes desired, if the license holder wishes to amend the license. No exceptions are taken to the provisions of this article.

3.1.1.65 10 CFR 50.91 - Notice for Public Comment; State Consultation

Article 50.91 establishes requirements applying to the Commission and TMI-2 regarding the application for an amendment to a 10 CFR Part 50 license following permanent removal of the fuel. The requirements of this article apply to TMI-2.

3.1.1.66 10 CFR 50.92 - Issuance of Amendment

Article 50.92 establishes the standards by which the Commission determines if no significant hazards exist for a license amendment. The licensee must file a no significant hazards analysis with each amendment application using the standards set forth in Article 50.92 as required by Article 50.91. The requirements of this article apply to TMI-2.

REFERENCES

3.1-1 Letter, Travers, W. D. (NRC) to Standerfer, F. R. (GPUNC), "Approval of Exemption from 10 CFR 50.61," dated December 30, 1985.

3.1-2 Letter, Snyder, B. J. (NRC) to Kanga, B. K. (GPUNC), "10 CFR 50.49, 'Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants'," dated July 22, 1983.

3.1-3 Letter, Stolz, J. F. (NRC) to Standerfer, F. R. (GPUNC), "Issuance of Amendment (TAC No. 65337)," dated May 27, 1988.

3.1-4 Letter, Snyder, B. J. (NRC) to Hovey, G. K. (Met-Ed), Re: Exemption from 10 CFR 50 Appendix J, dated September 2, 1981.

3.1-5 Letter, Snyder, B. J. (NRC) to Hovey, G. K. (Met-Ed), Re: Relief from the Inservice Inspection Program Requirements of 10 CFR 50.55a, dated April 27, 1981.

3.1-6 GPU Nuclear letter, 4410-90-L-0044, "Decommissioning Financial Assurance Certification Report for ... TMI-2," dated July 26, 1990.

3.1-7 GPU Nuclear letter, 4410-90-L-0012, "Defueling Completion Report, Final Submittal," dated February 22, 1990.

3.1-8 GPU Nuclear letter, C312-91-2045, "SNM Accountability," transmitting the Auxiliary and Fuel Handling Buildings PDSR, dated June 7, 1991.

3.1-9 GPU Nuclear letter, C312-91-2052, "SNM Accountability," transmitting the Reactor Building Miscellaneous Components PDSR, dated June 18, 1991.

3.1-10 GPU Nuclear letter, C312-91-2055, "SNM Accountability," transmitting the Reactor Coolant System PDSR, dated July 3, 1991.

3.1-11 GPU Nuclear letter, C312-91-2064, "SNM Accountability," transmitting the 'A' and 'B' Once-Through Steam Generators PDSR, Revision 1, dated July 3, 1991.

3.1-12 GPU Nuclear letter, C312-93-2004, "SNM Accountability, transmitting the Reactor Vessel PDSR, dated February 1, 1993.

3.1-13 GPU Nuclear letter, C312-92-2080, "TMI-2 Reactor Vessel Criticality Safety Analysis, " dated December 18, 1992.

3.1-14 Letter, Masnik, M. T. (NRC) to Standerfer, F. R. (GPUNC) "Three Mile Island Nuclear Station Unit 2 Approval of Exemptions from 10 CFR 70.24 'Criticality Accident Requirements'," dated May 27, 1988.

3.1-15 GPU Nuclear, letter, 1920-99-20112, "Decommissioning Funding Status," dated March 31, 1999.

3.1-16 Letter, Thonus, L. H. (NRC) to Langenbach, J. W. (GPUNC) "Exemption from Insurance Coverage Limit of 10 CFR 50.54(w), " dated July 21, 1999.

existence of modified penetrations, the Containment is capable of performing its intended function of contamination isolation throughout the range of normal and postulated unanticipated events.

The Containment will remain isolated during PDMS. The Containment Atmospheric Breather and the RB Purge isolation valves will close on a High RB pressure, if in operation.

7.1.2 AUXILIARY BUILDING

7.1.2.1 PDMS Function

The Auxiliary Building will serve primarily to support operation of the liquid radwaste, Auxiliary Building sump, ventilation, and effluent monitoring systems required for PDMS activities.

7.1.2.2 Facility Description

The Auxiliary Building shares a common wall with the Fuel Handling Building on the west side and has a vertical air intake shaft attached to the east wall. The Auxiliary Building is rectangular in plan with three main floors of slab-beam and flat slab construction. At the east exterior wall, a large door opening is located at grade level. This door opening is not protected from an aircraft impact loading or external missiles (see Section 3.5). The Auxiliary Building is accessible from the Service Building, the Fuel Handling Building, and the Unit 1 - Unit 2 corridor.

During PDMS, the Auxiliary Building Ventilation System and filters will be maintained in an operational condition and operated as required. The auxiliary sump, auxiliary sump tank, and associated level indication will remain operational as well as the 480/277 VAC power to lighting, **and** sump level indication circuits. Most loads of 480 VAC and above have been deenergized at the switchgear and/or motor control centers. However, selected loads (e.g., welding receptacles, heaters, pump motors, and fan motors) will remain energized and available for use, as needed. The Auxiliary Building will be accessible for periodic surveillance entries and other limited activities.

7.1.2.3 Evaluation

System operations and activities in the Auxiliary Building during PDMS are at a reduced level, thereby substantially reducing the potential for spread of contamination. Auxiliary Building sump and liquid radwaste systems are operational to collect and process any liquids in the building to minimize uncontrolled accumulation of liquids during PDMS.

7.1.3 FUEL HANDLING BUILDING

7.1.3.1 PDMS Function

During PDMS, the Fuel Handling Building is not required for storage of new or spent fuel. However, it may be utilized for the temporary staging of site-generated radwaste or other appropriate uses.

7.1.3.2 Facility Description

The Fuel Handling Building shares a common wall on the east side with the Auxiliary Building and a common truck bay with the Unit 1 Fuel Handling Building on the north end. One bridge crane, common

to both buildings, was provided for fuel handling; no separating wall exists above the operating floor, i.e., elevation 347'-6". The Containment is located on the south side of this building Two stainless steel lined, reinforced concrete fuel storage pools are located in the building.

During PDMS, the Fuel Handling Building Ventilation System and filters will be maintained in an operational condition and will be operated as required for elevations below 347'-6". The operating floor (el. 347'-6") area is ventilated by the TMI-1 ventilation system.

Electric distribution will remain configured to power low voltage (120/208 VAC) lighting loads and fire detectors.

All fuel canisters have been removed from the spent fuel pools and shipped off-site. Both fuel pool structures will remain intact. The SDS has been deactivated. The Fuel Transfer Tubes have been isolated. Access to the fuel pool area from TMI-2 will be appropriately controlled to prevent unauthorized access to the TMI-1 fuel pool area which is classified as a vital area of TMI-1. The FHB truck bay will be accessible from and under operational control of TMI-1.

7.1.3.3 Evaluation

The Fuel Handling Building configuration for PDMS minimizes sources of contamination; therefore, the potential for spread of contamination is very low.

7.1.4 FLOOD PROTECTION

7.1.4.1 PDMS Function

The existing unit flood protection capabilities will be maintained for PDMS and are based on a maximum water elevation of 311 ft. under flood conditions. The probable maximum flood (PMF) for the Susquehanna River at Harrisburg was established by the Army Corps of Engineers as 1,600,000 cfs. The water surface profiles routed downstream to the site results in a PMF of 1,625,000 cfs, which corresponds to a site elevation of 308.7 ft. The water surface elevation at the tip of Three Mile Island is 304 ft. and 303 ft. at the intake structure for the design flood. At these locations for the PMF, the calculated surface elevations are 310 ft. and 309 ft., respectively. See Section 2.4.3.

7.1.4.2 Facility Description

Although station grade, at 304 ft., is above the water surface profile, dikes are provided around the site to protect the station from wave action for the design flood. The top elevation of the protective dike at the tip of Three Mile Island is 310 ft., which provides a freeboard of

approximately six feet above the design flood at that location. The dikes along both sides of the island descend uniformly from elevation 310 ft. to elevation 305 ft., which is sufficient to protect the entire site for the design flood. A dike with a top elevation of 304 ft. extends across the southern end of the site.

Structures are provided with complete protection at the exterior faces rather than attempting to protect individual equipment or systems. The waterstops between adjacent building walls and mats were designed to be capable of withstanding a maximum water head of 45 ft. which is in excess of the maximum head associated with the flood level. The exterior sliding doors and flood panels are provided with watertight seals. Specific design features of these structures are:

a. Containment - There are no external openings in the Containment below the 305 ft. elevation.

b. Fuel Handling Building - There are no external openings in the Unit 2 Fuel Handling Building that require flood protection. The railroad door in the Unit 1 portion of the Fuel Handling Building **utilizes an inflatable rubber seal to minimize water intrusion.**

c. Control Building - Flood panels are provided for all ground level exterior entrances.

d. Auxiliary Building - A flood panel is provided for the east roll-up door entrance.

e. Control Building Area - Access to the tendon gallery is protected by watertight enclosures and flood panels at ground level.

f. Air intake - The openings in the Air Intake Tunnel are located higher than the probable maximum flood level except for a water tight hatch located at ground level, southeast of the BWST.

g. General - Doors and entrances (not flood protected) to the Concrete Power Block Buildings are either watertight or are provided with flood panels. All openings that are potential leak paths (e.g., ducts, pipes, conduits, cable trays) are configured to minimize water intrusion.

7.1.4.3 Evaluation

In addition to specific building flood protection provisions, the entire site is protected by an early warning system provided by the Federal-State River Forecast Center and a dike with a top elevation of 310.0 ft. The probable maximum flood is calculated to reach **a site elevation of 308.7 ft. (often rounded to 309 ft.)**. Therefore, systems and facilities required to support PDMS activities are protected from flooding.

7.1.5 AIR INTAKE TUNNEL

7.1.5.1 PDMS Function

During PDMS, the Air Intake Tunnel provides a pathway for screened air to the following operational plant ventilating systems:

a. Reactor Building Ventilation

b. Auxiliary Building Ventilation

c. Fuel Handling Building Ventilation

d. Control Building Ventilation.

e. Service Building Ventilation

f. Control Building Area Ventilation

The Air Intake Tunnel protects these plant ventilating systems from airborne debris, flood water, and fire.

7.1.5.2 Facility Description

The Air Intake Tunnel consists of a cylindrical intake tower with screens and baffles, a 100,000 gallon sump, and an underground tunnel leading to the plant ventilating systems. The tunnel floor drains to the sump. The tunnel leads to a vertical air intake shaft which branches out into the individual supply ducts for the plant ventilating systems. The sump will be pumped out via a temporary pump, when required.

7.1.5.3 Evaluation

The Air Intake Tunnel is maintained during PDMS to provide an air supply pathway for operational plant ventilating systems. The structure is designed to protect the Air Intake System against projectiles and flooding. The openings in the tower are above the probable maximum flood level, and the baffled intake and screen prevent projectiles from entering the intake.
The Air Intake Tunnel, by design, also helps prevent the spread of fire into plant ventilating systems. Combustible material has been removed from the Air Intake Tunnel.

7.1.6 UNIT 1/UNIT 2 CORRIDOR

7.1.6.1 PDMS Function

During PDMS, the Unit 1/Unit 2 corridor serves as an operational facility to provide:

a. Heated weather enclosure for various operational system piping such as domestic water, Unit 1 discharge to IWTS and the Unit 1 Processed Water Storage Transfer System.

b. Access to the Auxiliary Building from the east outside yard through rollup security door 10.

c. Interconnecting corridor between Unit 1 and Unit 2.

7.1.6.2 Facility Description

The Unit 1/Unit 2 corridor is a heated passageway running north to south adjacent to the east side of the Turbine, Service and Control, and Auxiliary Buildings. It is a steel frame structure with metal siding over a concrete base floor, with a partial block wall up to the windows to the outside east yard. The roof consists of built up layers of felt and asphalt.

The airlock doors will be used during PDMS for Containment ingress and egress. The airlocks are designed as a double-door system with one of the doors always closed during routine entry into the Containment. Under these conditions, the Containment remains isolated (an enclosed volume) at all times and the amount of Containment air which could be released to or from the Containment is limited to the volume inside of an airlock assembly.

7.2.1.4.2 System Description

The Equipment Hatch is located in the southwest quadrant of the Containment. It is a 24 ft. 8 inch diameter, 20.5 ton cover for a 23 ft. diameter penetration in the Containment wall. Its design purpose is to accommodate the movement of large objects into and out of the Containment.

A removable personnel airlock assembly (airlock 1) is incorporated into the Equipment Hatch. The airlock has a 9 ft. outside diameter, a 12 ft. 6 in. length, and weighs approximately 15 tons. Both the Equipment Hatch and the airlock are double gasketed with the Equipment Hatch bolted to a steel flange on the Containment wall.

A separate personnel airlock assembly (airlock 2) is located in the southeast quadrant of the Containment. Its use is intended primarily for personnel access and is permanently mounted in the Containment wall. Both personnel airlock assemblies are manually operated and require no electric power to open or close.

7.2.1.4.3 Evaluation

There are situations when it is necessary to open both doors of an airlock assembly simultaneously, as is the case of movement of a long piece of equipment into or out of the Containment. The relevant issues associated with opening both airlock doors simultaneously during PDMS include:

a. Release of radioactivity during maintenance or surveillance activities, transient conditions, or other natural or man-made events.

b. Assurance that the airlock doors can be closed.

Typically, both airlock doors would be open only for the period of time necessary to complete the relevant activity and the Reactor Building Purge System would be operating, thereby minimizing any effluent.

Natural phenomena, such as floods and high winds, are not considered to pose a safety concern because there is adequate warning to ensure that the airlock doors could be closed prior to a significant release. From a seismic standpoint, the airlocks serve no structural function, and therefore, will not affect the seismic integrity of the Containment.

7.2.2 FIRE PROTECTION, SERVICE, AND SUPPRESSION

Fire Protection is provided during PDMS to minimize the potential for a release of radioactive material due to a fire in a contaminated area, protect systems maintained operational during PDMS, minimize the liability and property risk from potential fires, and minimize any potential risk to the operating unit on the same site.

These objectives are achieved by minimizing the potential for a fire by strict control of combustible materials and ignition sources and by providing a system of detection and suppression suitable to deal with any potential fire.

7.2.2.1 PDMS Function

The overall fire protection objectives are achieved by providing a system of fire protection features designed to ensure the following primary functional requirements:

a. Fire detection shall be provided to the extent that any credible fire will be detected.

b. Portable fire extinguishers shall be provided in areas of the facility, as necessary, to provide adequate fire suppression capability.

c. Presence of flammable and/or combustible liquids and materials shall be minimized to the maximum extent practical.

7.2.2.2 System Description

The original TMI-2 system of fire protection has been modified to address the functional requirements for fire protection for PDMS. The Fire Service, and Suppression System as configured for PDMS are shown on Drawings 302-231, Sht. 1 **and 302-234**. The measures required to provide the necessary degree of fire protection are described below.

a. The yard fire main will be maintained pressurized using the station fire pumps in Unit 1 with the altitude tank as a backup water source.

b. A heat sensitve wire fire detection system has been installed which provides detection capability in the Reactor, Auxiliary, Fuel Handling, Control, Service and Turbine Buildings. The detectors are divided into six (6) zones with the fire and trouble alarms transmitted to the control panel on the TMI Unit 1 Turbine Deck that alarms in the TMI-1 Processing Center. The detector will actuate when its temperature reaches 150 to 165 degrees Fahrenheit. The installation of this system supports the plan to remove the original plant high voltage detection system.

c. Equipment-related fire detectors, installed on various components within the plant to monitor a specific hazard and automatically trip the associated fire suppression system, have been deactivated along with the related fire suppression system.

d. The Halon systems[2] protecting the Air Intake Tunnel have been deactivated by removing the Halon cylinders and deenergizing the ultraviolet and pressure detectors. The Halon system protecting the relay room has been deactivated by removing the cylinders. The **heat sensitive wire** fire detection system will remain operational to monitor these areas.

e. Portable fire extinguishers and self-contained breathing apparatus are staged with emergency response crew equipment. Additional portable fire extinguishers are located throughout the plant as needed to support work activities.

f. Transient combustibles inside the Containment and the AFHB have been removed to the maximum extent practical.

g. The oil has been drained from the main turbine and lube oil reservoir, feedwater pump turbines, emergency feedwater pump turbine, emergency feedwater pumps, condensate pumps, condensate booster pumps, and the hydrogen seal oil unit.

h. The charcoal filters have been removed from all HVAC systems in Unit 2.

i. The 12 in. fire service loop, which runs through the Diesel Generator Building, AFHB, Control Building area and Turbine Building (east and west), has been cut and capped off. The Diesel Generator Building has been turned over to TMI-1. Fire Service Water System standpipes have been configured to the East and West side of the Turbine Building which permits connection of the local fire hydrants to the 331' elevation of the Turbine Deck by way of staged fire hoses. This will allow responsive action by the Station Fire Brigade and or local Fire Departments.

j. DELETED

k. The station fire brigade is fully trained to assure that the personnel are familiar with system configurations, plant layout, and the procedures in Unit 2.

l. The Fire Protection Program and housekeeping inspections and their frequency are addressed in plant procedures.

[2]The air intake tunnel halon system was removed because the probability of an airplane crash in the vicinity of the air intake tunnel was estimated to be less than 2E-7/year and because of the presence of heat activated detectors.

7.2.2.3 Evaluation

The scope of fire protection has been reduced for areas in which systems have been deactivated and combustibles have been significantly reduced, so that the corresponding fire hazards have been minimized.

Deluge systems in the air/intake tunnel, the Auxiliary, the Turbine, and Control Buildings have been deactivated for PDMS. There are no deluge systems in the Containment.

Detection devices provide contacts for supervisory indication that each device is operational and, in the event of detector actuation, indicates the location where the wire detector actuated the alarm.

The station fire brigade is under the supervisory control of Unit 1. Upon detection of a fire in Unit 2, the station fire brigade will respond to the specific location in Unit 2. This response in accordance with ongoing station fire brigade training and procedures will ensure mitigation of a fire in Unit 2 during PDMS. The fire protection and suppression systems are configured to provide adequate capability to extinguish any potential fire during PDMS.

7.2.3.2 Sump Pump Discharge and Miscellaneous Sumps System

7.2.3.2.1 PDMS Function

There are a number of sumps in TMI-2 that will be maintained in an operational condition during PDMS. The various sumps and their locations are listed in Table 7.2-3.

Maintaining the various building sumps operational assures that water buildup does not cause adverse localized flooding. These sumps will contain water that is either clean or slightly radioactive. Clean water is presently routed to the Industrial Waste Treatment System (IWTS). Radioactive water will be processed and discharged via approved pathways; slightly radioactive water will be pumped to the IWTS and released in accordance with 10 CFR 20, 10 CFR 50 and NPDES regulations. The discharge from the IWTS is monitored for radiation in accordance with the ODCM.

7.2.3.2.2 System Description

The designs of the various sumps are delineated in the applicable documents referenced in Section 7.3. The PDMS configuration is shown on GPUN Drawing 302-2496. The sumps have the capability of being pumped automatically with the pumps controlled by float switches; however, they will normally be operated in the manual mode with a high level alarm that annunciates in the control room and the PDMS Alarm Monitoring System. Sump level is monitored by level detectors located in the respective sumps. The exceptions are the Circulating Water Chlorinator Building, Circulating Water Pump House, and the Air Intake Tunnel Normal Sumps which will employ portable sump pumps to pump down the sumps as necessary.

Water from the floor drains that enters these sumps is generally not contaminated, although sumps within the Turbine Building, Control Building Area, Control and Service Building, and Tendon Access Gallery have recirculation and grab sample lines to permit sampling for radioactivity.

7.2.3.2.3 Evaluation

In general, the functional requirements of each sump and sump pump have been determined on an individual basis.

Monitoring of level in the various sumps by remote means and/or visual inspections ensures that accumulated leakage is transferred for processing in a timely manner. Sampling will be used to quantify radioactive content and ensure proper waste stream processing.

Therefore, operation of the sump pump discharge system ensures liquid waste streams generated during PDMS are adequately transferred for ultimate processing and do not adversely affect the PDMS plant conditions.

7.2.4 RADIATION MONITORING

7.2.4.1 PDMS Function

During PDMS, the radiation monitoring requirements for the facility are primarily those associated with assuring the stability of the radiological conditions in the facility and effluent monitoring. The off-site dose calculations for normal time periods and unanticipated events (see Chapter 8) are based on assumed and measured radiological conditions associated with the various areas of the facility. In order to assure that the off-site dose calculations for the various events remain bounding, the radiological conditions must be periodically monitored to assure they remain within acceptable bounds. In addition, all effluents must be monitored to assure all off-site releases are within acceptable bounds, as well as to meet regulatory requirements for effluent reporting.

Broader radiological conditions monitoring will be conducted throughout the facility to assure compliance with good radiological conditions practices and 10 CFR 20. These radiological monitoring activities are required to support other PDMS activities such as visual inspections, preventive maintenance or other routine tasks.

7.2.4.2 Radiological Surveys

7.2.4.2.1 AFHB Radiological Surveys

Radiological surveys will be conducted on a periodic basis to monitor radiological conditions in the Auxiliary and Fuel Handling Buildings. These radiological surveys will be conducted quarterly and will consist of air sampling, loose surface contamination, and radiation does rate surveys. In addition, TLDs may be placed in fixed locations and changed out periodically to monitor dose rates over a long-term period. Radiological survey results will be reviewed and evaluated for trends to provide early detection of deteriorating radiological conditions.

7.2.4.2.2 Containment Radiological Surveys

Periodic Containment radiological surveys are required to provide information regarding the stability of the radiological conditions inside the Containment. As stated in Section 7.2.4.1, this information is necessary to periodically validate the off-site releases as calculated in Chapter 8. Radiological surveys just outside the containment airlock doors will be conducted quarterly, as expressed in Regulatory Guide 1.86 Position 3.C. Radiological surveys inside containment will be conducted annually, as a minimum, at the approximate locations shown on Figures 7.2-11 and 7.2-12. Monthly radiological surveys in the Containment were performed after the RB was placed in its PDMS condition in order to develop an adequate data base. These surveys consisted of loose surface contamination and radiation dose rates at all survey locations and at least one air sample inside the containment.

The annual surveys will collect data from the same locations. In addition, TLDs may be placed in fixed locations and changed out periodically to monitor dose rates over a long-term period. These surveys will be reviewed and evaluated for any indicated trends. This will either provide assurance that contamination conditions inside the Containment are stable or will provide early indication of any changing conditions which may require corrective action.

7.2.4.4 General Radiological Monitoring

It is anticipated that the routine radiological surveys will only be performed in areas requiring access for visual inspection, preventive maintenance, or other routine tasks. "High radiation," "high contamination," and sealed areas will not normally be accessed for routine surveys unless access is required for some other purpose. Radiological support of work during PDMS will be conducted in accordance with Radiological Controls procedures and good radiological work practices.

7.2.4.5 Evaluation

The radiological effluent and monitoring programs described above address the principal radiological concerns for PDMS. These programs assure the radiological conditions in the facility are monitored and any significant deteriorating conditions will be identified in a timely period and appropriate correction action taken. Also, both liquid and gaseous effluents are monitored to assure all radioactive releases are within acceptable bounds. These monitoring programs, in conjunction with general radiological controls activities, assure that the radiological aspects of PDMS are appropriately addressed.

7.2.5 ELECTRICAL SYSTEMS

During PDMS, various plant systems will be required to remain operational to support the monitoring, protection, and surveillance activities associated with PDMS. Some systems require continuous operation while others require only intermittent operation. Due to the need for electrical power support for these activities the PDMS Electrical Distribution System will be maintained operational and remain energized during PDMS.

7.2.5.1 PDMS Electrical Distribution System

7.2.5.1.1 PDMS Function

During PDMS, the TMI-2 Electrical Distribution System will be maintained operational and energized to provide reliable power sources for the PDMS support systems and their associated controls and instrumentation. Power will also be available for area lighting, receptacles, heating and ventilation to support PDMS surveillance activities. In some instances, systems utilized for PDMS surveillance activities may require energization from local control stations prior to commencing the surveillance activity.

7.2.5.1.2 System Description

The TMI-2 Electrical Distribution System is powered from a 13.2 KV offsite power source. The 13.2 KV/480 VAC transformers, in Unit Substations 2-31, 2-32, 2-35, 2-45 and 2-37, provide 480 VAC power to locations in the Turbine, Service and Auxiliary Buildings. Unit Substation 2-31 provides 480 VAC to bus Unit Substation 2-22E in the Control Building. All of the PDMS electrical loads are consolidated on these six buses.

Unit Substations 2-31 and 2-32 provide 480 VAC to five (5) Motor Control Centers (MCCs), MCC 2-31H, MCC-2-33A, MCC 2-31A, MCC 2-32A and MCC 2-42C. These contain combination motor starters using molded case circuit breakers and magnetic contactors.

The low voltage 120/208-volt AC distribution system supplies control, instrumentation, and power loads requiring unregulated 120/208-volt AC power. It consists of distribution panelboards, branch breakers, and transformers located in and powered from 480-volt MCCs through 480/120-volt dry-type transformers.

A 125-volt rectifier provides DC power to a single distribution panel. The rectifier is normally fed from Unit Substation 2-22E. In the event of a power loss, an automatic transfer switch will provide backup power from the Unit 1 Station Blackout bus. All PDMS DC control have been consolidated on this panel.

The vital 120-volt AC system consists of distribution panels, 2-12R and 2-22R, fed from regulated transformers. They receive power from Unit Substation 2-22E through 480/120-volt step-down-transformers. An automatic transfer switch provides backup power to panel 2-12R from the Unit 1 Station Blackout bus in the event primary power is lost. The regulated 120-volt AC power system supplies control and instrumentation loads as well as power for communication and annunciators. Single line diagrams of the Unit 2 AC distribution system are shown on GPUN Drawings 206-201, 206-202, 206-203, 206-204, 3009, 3010, 3010, 3016, 3017 Shts. 1,2 and 3, E021, E025, E116, 2E21-011 and 2E21-012.

7.2.5.1.3 Evaluation

The Electrical Distribution System has been modified to meet the requirements of PDMS. Due to the deactivation of the reactor and its associated support systems, Class 1E emergency diesel backed power systems are no longer required. In support of this, the emergency diesel generators have been turned over to TMI-1 and the Engineered Safety Feature buses no longer have connection capability to the emergency diesel generator buses 2DG-1 and 2DG-2. The Engineered Safety Feature buses will no longer be considered Class 1E. **As a result of an effort to isolate non-PDMS support systems and components from the TMI-2 electrical distribution system, nearly all such loads have been de-activated.** Administrative controls have been developed and are in place to govern the use of PDMS support systems and prevent unauthorized use of deactivated systems. Load consolidation has been performed in order to reduce the number of energized circuits, which reduces plant maintenance and surveillance activities, thereby enhancing overall plant safety. DC power required during PDMS is supplied through a rectifier.

The Electrical Distribution System, as modified for PDMS, will provide sufficient reliable electrical power to support all PDMS activities with enhanced overall plant and personnel safety. In the event that all electrical power is lost, actions will be taken expeditiously to restore power. In the unlikely event that power cannot be restored within 14 days, a report will be submitted to the NRC within 30 days detailing the plans and schedule to restore power.

7.2.5.2 Normal and Emergency Lighting

7.2.5.2.1 PDMS Function

TMI Unit 2 is provided with normal lighting systems using mercury-vapor, fluorescent and incandescent luminaries. These systems provide illumination for PDMS support activities and for personnel safety. All lighting not required for security and monitoring activities will be turned off. Lighting will be energized as needed for maintenance activities.

Installed emergency lighting will be maintained during PDMS. One-half of the normal lighting originally designed and installed is available throughout TMI-2 except in the RB. Normal lighting within the RB is provided by strings of lights installed on the 305' and 347' elevations. The lighting is adequate to support PDMS inspection and test activities without additional illumination from permanently installed building lighting. Eight-hour portable emergency lighting will be carried by emergency personnel crews entering the buildings. This lighting will be staged with emergency response crew equipment. Routine entry crews will carry flashlights.

7.2.5.2.2 System Description

The PDMS lighting system is powered from normal AC power sources; an exception to this is the RB lighting system discussed below. This system utilizes three types of luminaries: mercury-vapor, fluorescent and incandescent. The mercury-vapor luminaries are powered from 480/277-volt systems directly from the 480-volt unit substations or from 480-volt motor control centers. The fluorescent and incandescent luminaries are powered from 208/120-volt systems utilizing 30 KVA step-down transformers which are supplied from the 480-volt sources. In general, the mercury-vapor luminaries are used in high ceiling areas, the fluorescent luminaries in almost all other areas, and the incandescent luminaries where environmental conditions require their use. Exit signs are powered from the normal lighting system; with backup battery for these signs from the emergency lights.

Emergency lighting consists of sealed beam lamps powered by batteries which initiate operation upon loss of the normal lighting system. This lighting is provided to ensure safe egress for personnel. Additional exit information will be provided by postings.

The RB normal lighting system consists of lights on the 305' and 347' elevations fed from Portable Power Distribution Centers (PPDC) or "power buggies." These power supplies were originally installed in the RB to support defueling activities. Two power buggies are located on the 305' elevation and two are located on the 347' elevation. The power feed is from either USS 2-35 or USS 2-45 and is configured such that the two power buggies on each elevation are energized from different sources, i.e., on each elevation, one-half of the lighting is fed from one source and the other half is fed from the other source. In the event one source of power is lost during an entry, adequate lighting would remain to assist in the safe evacuation of personnel.

7.2.5.2.3 Evaluation

The majority of the existing lighting systems remains operational during PDMS. Sufficient lighting capability is provided for anticipated support activities. If further needs arise, temporary lighting will be added for specific PDMS activities.

7.2.5.3 Communications System

7.2.5.3.1 PDMS Function

The TMI-2 Communications System during PDMS will provide normal communication channels throughout Unit 1 and Unit 2.

In addition, the Communications System will provide the capability to announce alarms and alert personnel to radiation and fire hazards.

7.2.5.3.2 System Description

Portions of the original system have been retained for PDMS as follows:

a. Normal Page - Party System

This system is powered from a separate 120-volt, single-phase AC power bus. The system is compatible with TMI Unit 1 and was merged with the TMI Unit 1 system through a merge-isolate switching arrangement in the control room to provide normal communication channels throughout TMI Units 1 and 2 (excluding Unit 2 RB) during PDMS.

The reactor building paging system is currently disabled. This was accomplished by disonnecting five cables and removing the handsets inside both air locks. The cables can be re-landed and the handsets reinstalled to allow the reactor building paging system to be returned to service.

The system consists of handsets, amplifiers, loudspeakers, evacuation tone generator, isolating transformer, and the necessary special equipment to provide a paging channel and three party line channels.

b. Radio-Antenna System

This system consists of antennas located at strategic points within the TMI-2 PDMS Buildings to ensure full coverage for radio communications. This system is the back-up system for a loss of the normal page-party system.

c. Commercial Telephone System

This system's trunk lines are leased from the **Telephone** Company. The handsets and switching equipment are maintained by **TMI-1** personnel. This system provides links with all on site as well as off-site locations.

greatly reduced.

7.2.6.3 Air Intake Tunnel Ventilation System

The Air Intake Tunnel will be maintained only as a supply pathway for screened air to plant ventilating systems during operation. It consists of a cylindrical intake tower with screens and baffles, a 100,000 gallon sump, and an underground tunnel leading to the plant ventilation systems. The PDMS configuration is shown on GPUN Drawing 302-2219.

During PDMS, the Air Intake Tunnel provides a supply pathway for ventilation systems operation to meet industrial and radiological requirements.

7.2.6.4 Compressed Air Supply System

7.2.6.4.1 PDMS Function

Portions of the original plant Instrument and Service Air Systems will be utilized during PDMS to provide compressed air to operational pneumatic devices in the following systems:

a. Waste Disposal - Liquid

b. Auxiliary Building Ventilation System

c. Fuel Handling Building Ventilation System

d. Control Building Ventilation System

e. Service Building Ventilation System

f. RB Purge System

g. RB Breather System

7.2.6.4.2 System Description

The Compressed Air Supply System consists of two air-cooled air compressors, receivers, and the piping and valves required to distribute compressed air to operational pneumatic devices. The major components, piping, and valves of the original plant Instrument/Service Air Systems have been incorporated as part of the Compressed Air Supply System. Two

air-cooled air compressors are used to supply air to the modified system in place of the original water-cooled compressors. The primary air compressor, SA-P-3, is located in the Service Building 280' elevation with a backup air compressor, SA-P-2, also located in the Service Building 280' elevation. The Compressed Air System will be operated continuously to support operations. The PDMS configuration is shown on GPUN Drawing 302-2014, Sht. 3.

7.2.6.4.3 Evaluation

The Compressed Air Supply System primarily utilizes the portions of the original plant Instrument/Service Air System, which are required to store and distribute air to pneumatic devices **supporting** PDMS. Since cooling water will not be available during PDMS to cool air compressors, air-cooled air compressors have been used.

7.2.6.5 Building Inleakage Waterproofing System

7.2.6.5.1 PDMS Function

During PDMS, the TMI-2 building waterproofing systems serve to direct roof rainwater into the site stormwater drainage system and prevent groundwater from entering buildings through joints, penetrations, and cracks.

7.2.6.5.2 System Description

The plant waterproofing systems consist of:

a. Building roofing systems

b. Basement waterproofing from groundwater.

c. A cork seam monitoring system (see Section 1.1.2.2.4).

The building roofs, except for the Auxiliary and Reactor Buildings, are a built-up system of asphalt, felts, and insulation on both concrete and steel decks. Rainwater is directed via roof slope to roof drains which carry the rainwater to the site stormwater drainage piping. All runoff is collected in a retention basin which can be monitored prior to discharge into the Susquehanna River.

All basement walls are poured concrete. To prevent groundwater inleakage, the following were performed:

a. All penetrations through basement walls were sealed.

b. Expansion joints between building foundations were sealed with waterstops, cork filler, and epoxy sealant.

c. Construction joints were keyed to deter water seepage through them.

7.2.6.5.3 Evaluation

In preparation for PDMS, various building seams, link seals, and major cracks have been repaired to the extent practical to minimize expected inleakage from storms and high groundwater levels. The inleakage rates and flowpaths experienced to date do not affect plant equipment required for PDMS. Additionally, the Sump Pump Discharge and WDL system are operational to transfer accumulated water to minimize potential spread of contamination due to localized flooding.

7.2.6.6 Sewers

7.2.6.6.1 PDMS Function

The basic function of the sewage collection system is to transport sewage from TMI-2 structures to the Sewage Treatment Plant. The PDMS configuration is shown on GPUN Drawing 302-151.

7.2.6.6.2 System Description

Sewage from the temporary personnel access facility (TPAF) in the Turbine Building is routed to the Sewage Treatment Plant (STP) which serves both TMI-1 and TMI-2. The major operational portion of the Sewer System is underground gravity flow piping that provides for the transport of sewage from the Unit 2 support facilities to the STP.

7.2.6.6.3 Evaluation

The Sewage Treatment Plant will process sewage from the TPAF. The majority of TMI-2 sewage piping is underground below the frost line. The original plant sanitary waste/sewage system is deactivated.

7.2.6.7 Domestic Water System

7.2.6.7.1 PDMS Function

During PDMS, portions of the existing domestic water system will remain operational to provide domestic water services required during PDMS.

7.2.6.7.2 System Description

The domestic water system is maintained as a modified operational system. Unit 2 is supplied with domestic water from Unit 1 which is then distributed to Unit 2 support facilities. Domestic water is provided to the radwaste seal water unit in the Auxiliary Building, to the TPAF in the Turbine Building, and to several outbuildings. The PDMS configuration is shown on GPUN Drawings 302-158 Sht. 4.

7.2.6.7.3 Evaluation

Since personnel access into the plant will be infrequent, only one source of domestic water is required in the Turbine Building. The Auxiliary Building header supplies domestic water to the seal water unit. Unit 1 and Unit 2 support facilities will remain operational; therefore, domestic water will continue to be supplied.

7.2.6.8 Control Room Ventilation System

7.2.6.8.1 PDMS Function

The Control Room Ventilation System will be maintained in an operational condition to support PDMS activities. This system provides fresh, filtered, heated or cooled air in sufficient quantity to support personnel occupancy and equipment protection.

7.2.6.8.2 System Description

The Control Room Ventilation System consists of one supply fan (AH-C-16B) running in a forced ventilation mode during normal year round conditions. The supply fan will primarily recirculate the control room air as it is heated/cooled. A small amount of fresh air (outside air) will be force supplied by bypass booster fan (AH-C-16X). Exhaust fan (AH-E-35) will return control room air to the suction of supply fan (AH-C-16B). A small amount of the control room air will be "exhausted" out of this recirc mode, primarily by exfiltration dampers in the control room and via the kitchen and toilet fans. This provides for a small amount of air change per day.

Heating is controlled by a thermistor located in the control room exhaust duct. It provides signals to a programmable controller in the control room chiller at either of the setpoints that activates two steps of installed duct heaters on demand. As conditions dictate, this same thermistor provides signals at either of the programmable controller setpoints to give cooling via the 10 ton control room chiller. Cooling can also be called for by a humidistat located in the supply air duct work near the supply fan (AH-C-16B). If the conditions in the control room or the makeup air cause the humidity to go above either of the two setpoints, the corresponding cooling circuit in the 10 ton chiller will operate to condense out this moisture.

Neither cooling or heating functions will operate unless supply fan (AH-C-16B) is running and satisfying a flow switch in the supply air duct.

Additional outside air can be provided by performing special operations when economizer mode is desired or the chiller malfunctions and additional cool outside air is desired.

7.2.6.8.3 Evaluation

During PDMS, Control Room ventilation and air handling equipment provides a filtered pathway for active operation to meet industrial and radiological requirements. The Control Room Ventilation System is maintained operational for the maintenance and surveillance entries into the TMI-2 Control Room and in response to off-normal conditions.

7.2.6.9 Cable Room Ventilation System

7.2.6.9.1 PDMS Function

The Cable Room Ventilation System will be maintained in an operational condition to support PDMS activities. When in operation, this system provides fresh, filtered, heated air in sufficient quantity to maintain room temperatures suitable for personnel and equipment.

7.2.6.9.2 System Description

The Cable Room Ventilation System is a forced flow heating and ventilation system consisting of a supply and exhaust-return subsystem which provides ventilation with partial recirculation.

When the ventilation system is not operating, a damper in the bypass duct will open, allowing free passage of air in the exhaust-return duct system.

7.2.6.9.3 Evaluation

During PDMS, Cable Room ventilation and air handling equipment provide a filtered pathway during system operation to meet industrial requirements and provide the appropriate environment for instrumentation and annunciator equipment.

7.2.6.10 Service Building Ventilation System

7.2.6.10.1 PDMS Function

The Service Building Ventilation System will be maintained in an operational condition to support PDMS activities. When in operation, this system performs the following functions:

a. Provides fresh, filtered, heated air in sufficient quantity to maintain room temperatures suitable for personnel and equipment.

b. Minimizes the spread of contamination by providing air flow from clean areas to potentially contaminated areas, and then to the exhaust.

c. Filters exhaust air.

7.2.6.10.2 System Description

The Service Building Ventilation System is a forced flow heating and ventilation system consisting of supply and exhaust subsystems. Exhaust HEPA filter trains, which provide once-through ventilation with partial recirculation of clean areas.

7.2.6.10.3 Evaluation

During PDMS, Service Building ventilation and air handling equipment provide a filtered pathway during system operation to meet industrial and radiological requirements. This system is maintained operational for personnel ingress and egress to the Reactor Building, Auxiliary Building, and Unit 2 Control Room, for maintenance and surveillance entries into the Service Building, and provides ventilation for the CAS backup compressor.

7.2.6.11 PDMS Alarm Monitoring System

7.2.6.11.1 PDMS Function

The function of the plant computer alarm system is to notify plant operations personnel of an abnormal plant condition which requires operator action to correct or which represents a threat to plant, personnel or equipment safety. The PDMS Alarm Monitoring System provides the means to remotely monitor select TMI-2 alarms and TMI-2 station vent monitor signals in the TMI-1 Control Room via the TMI-1 plant computer. As required by the **TMI** Emergency Plan, the PDMS Alarm Monitoring System is designed such that if the remote monitoring of the alarms in Unit 1 becomes inoperable, the TMI-2 Control Room alarms and station vent monitor signals can be monitored from the annunciators and other recorders/equipment in the TMI-2 Control Room. The alarms and functions to be monitored are listed in Operating Procedure 1105-22, Response To PDMS alarms. (Ref. 7.3-13).

7.2.6.11.2 System Description

The plant computer uses four types of alarm information display systems - alarm CRTs, alarm displays on a Utility CRT, alarm summaries on a Utility CRT and an alarm printer. The modifications that were necessary to facilitate installation/operation of the PDMS Alarm Monitoring System were as follows:

1. A fiber optics cable link was installed between the TMI-1 computer system in the OSF Building and the TMI-2 multiplexer unit located in the TMI-2 Control Room.

2. A multiplexer unit was installed in the Unit 2 Control Room to interface with all required signals from the field (i.e., sensors or annunciators) or the Unit 2 Control Room annunciators. The multiplexer performs the necessary signal processing to convert the digital and analog signals to a light signal which is transmitted back to the TMI-1 computer via the fiber optics cable link.

3. The required digital alarm inputs and analog signals were interconnected to the multiplexer unit.

4. The multiplexer receives 120VAC power from a 480/120VAC regulated transformer. This transformer receives 480VAC power from one of two sources. Normally it will be fed from the TMI-2 480VAC system or, as a backup, it can be fed from one of TMI-1's 480VAC B.O.P. power systems.

5. A Mini-Uninterruptible Power Supply (UPS) provides backup power to the multiplexer in

CHAPTER 10
ADMINISTRATIVE FUNCTIONS
TABLE OF CONTENTS

TABLE OF CONTENTS (Cont'd)

DELETED

10.2 SECURITY PLAN

The Code of Federal Regulations 10 CFR 50 and 10 CFR 73 define the security requirements for nuclear power plants. Due to the defueled and non-operating condition of TMI-2 during PDMS, the security requirements applicable to the facility are less than those that are applicable to an operating nuclear power plant. TMI-2 complies with all applicable security requirements. **TMI-2 utilizes site physical security, guard training and qualification, and safeguards contingency plans maintained by TMI-1. These plans are administered and are under the authority of AmerGen, the TMI-1 License holder.** The specific security provisions for TMI-2 are in the "TMI Modified Amended Physical Security Plan."

10.3 EMERGENCY PLAN

10 CFR 50.47 establishes requirements for the content and criteria for acceptance of emergency plans. Emergency planning requirements are based on the assumption of the potential necessity to notify the public of the existence of, or potential for significant off-site releases. 10 CFR 50 Appendix E recognizes that emergency planning needs are different for facilities that present less risk to the public. Due to the non-operating and defueled status of TMI-2 during PDMS, there is no potential for any significant off-site radioactive releases and, due to the existence of TMI-1 on the same site, emergency planning requirements for the site are dominated by TMI-1. Therefore, the limited emergency planning necessary to accommodate the existence of TMI-2 on the same site as TMI-1 has been incorporated **into one** integrated emergency plan. **There exists only one Emergency Preparedness Plan for the TMI station. The Plan encompasses both TMI-1 and TMI-2 and is under the authority of AmerGen, the TMI-1 License holder.**

The emergency plan for the TMI site incorporates all of the essential emergency planning requirements established by 10 CFR 50 Appendix E and other regulatory guidance. Since there are no events associated with TMI-2 which could result in a release approaching the levels established in the Protection Action Guide, the site emergency action levels are based on potential events which could occur at TMI-1. The site emergency facilities, such as the Emergency Control Center, the Technical Support Center, and the Operations Support Center are located in or in convenient proximity to TMI-1. All site personnel are trained and drilled to respond to any declared site emergency event

10.4 RADIATION PROTECTION PLAN

TMI-1 maintains a Radiation Protection Plan which meets or exceeds standards for protection against exposures to radiation and radioactivity **at the TMI site. There exists only one Radiation Protection Plan for the TMI station. The Plan encompasses both TMI-1 and TMI-2 and is under the authority of AmerGen, the TMI-1 License holder.** The implementation of the Radiation Protection Plan ensures that the facility will be managed and maintained during PDMS in a manner which minimizes risks to employees, contractors, visitors, and the public from exposure to radiation and radioactivity at the facility. The implementation of the plan also ensures a radiologically safe working environment for employees and visitors at TMI-2.

10.5 ORGANIZATION

The organizational elements responsible for the PDMS phase of TMI-2 are shown on Figure 10.5-1. The specific responsibilities are discussed below. Additionally, the PDMS Technical Specifications prescribe specific requirements for staff qualifications, training, and the review and audit of TMI-2 activities.

As part of the sale of TMI-1, GPU Nuclear entered into an agreement with AmerGen for TMI-2 services. Under this agreement and as a contractor subject to GPU Nuclear's ultimate direction and control, AmerGen will provide all services, materials and equipment required to maintain TMI-2 in Post-Defueling Monitored Storage (PDMS). Services provided by AmerGen will meet all the requirements of the Safety Analysis Report, Technical Specifications and Quality Assurance Program. Services include:

- **Management services;**
- **Operations, maintenance and testing;**
- **Radwaste operations;**
- **Quality Assurance;**
- **Radiation controls and health physics;**
- **Environmental controls;**
- **Security;**
- **Safety;**
- **Administrative services, including logistical support, information technology support and procurement services;**
- **Engineering and Licensing;**
- **Warehousing and housekeeping;**
- **Support services required in connection with the performance of routine corrective and preventative maintenance;**
- **Interface with the NRC as necessary in connection with inspections, audits, site visits or meetings;**
- **Maintain required NRC licensing documents for TMI-2; and**
- **Prepare regulatory correspondence for GPU Nuclear signature or file on behalf of GPU Nuclear, to the extent permitted under applicable NRC regulations, all documents required in connection with PDMS of TMI-2.**

Figure 10.5-1 also shows the AmerGen organization which will provide the above services.

10.5.1. GPU Nuclear Cognizant Officer

The GPU Nuclear Cognizant Officer has the overall responsibility for the management of TMI-2 during PDMS.

10.5..2 **GPU Nuclear Ombudsman**

An Ombudsman is provided by GPU Nuclear as part of the company's employee concern program. The Ombudsman reports to the GPU Nuclear Cognizant Officer, and if necessary has access to the GPU Nuclear Board of Directors.

This individual is accessible on a confidential basis, if desired, to anyone in the company or its contracted employees having a nuclear or radiation safety concern he or she considers is not being adequately addressed. The Ombudsman is empowered to investigate such matters, identify any needed action and seek its resolution. The Ombudsman will reply to the individual who raised the matter.

10.5..3 **TMI-2/SNEC Oversight Committee**

Independent oversight is provided by the TMI-2/SNEC Oversight Committee which serves to independently assure that the TMI-2 structures, systems and components are maintained so as to protect the health and safety of the workers, the public and the environment and to enable effective and efficient dismantlement and decommissioning in the future. The committee is advisory to the GPU Nuclear Cognizant Officer.

10.5..4 **Manager, PDMS**

The **Manager, PDMS** has the first-level management responsibility for maintaining the TMI-2 PDMS condition. The **Manager, PDMS** is directly responsible for the operations and maintenance activities associated with the TMI-2 PDMS.

10.5.5 **Organizational Commitments**

TMI-2 License Amendment and Technical Specification Change Request No. 78, submitted to the NRC on April 6, 2000, requested organizational and administrative changes that will exist following the sale of the Oyster Creek Nuclear Generating Station to AmerGen. Attachment 3 to that submittal listed a number of commitments for TMI-2 and a general commitment to list the commitments in the PDMS SAR. The listing, as issued in TMI-2 Technical Specification Amendment No. 54, is as follows:

1. **The GPU Nuclear Cognizant Officer will have overall responsibility for TMI-2. A description of responsibilities and qualifications for this position will be addressed in the PDMS Quality Assurance (QA) Plan.**

2. **A GPU Nuclear employee or third party contractor will be permanently assigned at the TMI site.**

3. **The Ombudsman will have access, if necessary, to the GPU Nuclear Board of Directors. The Ombudsman function will be described in the PDMS Quality Assurance Plan.**

4. **GPU Nuclear will periodically assess AmerGen performance with support from other GPU (owners group) organizations as needed (e.g. GPU Internal Audits, Contracts, Legal, etc.).**

5. **GPU Nuclear will establish a TMI-2/Saxton Nuclear Experimental Corporation (SNEC) Oversight Committee that will advise the GPU Nuclear Cognizant Officer. A description of responsibilities and qualifications will be addressed in the PDMS Quality Assurance Plan.**

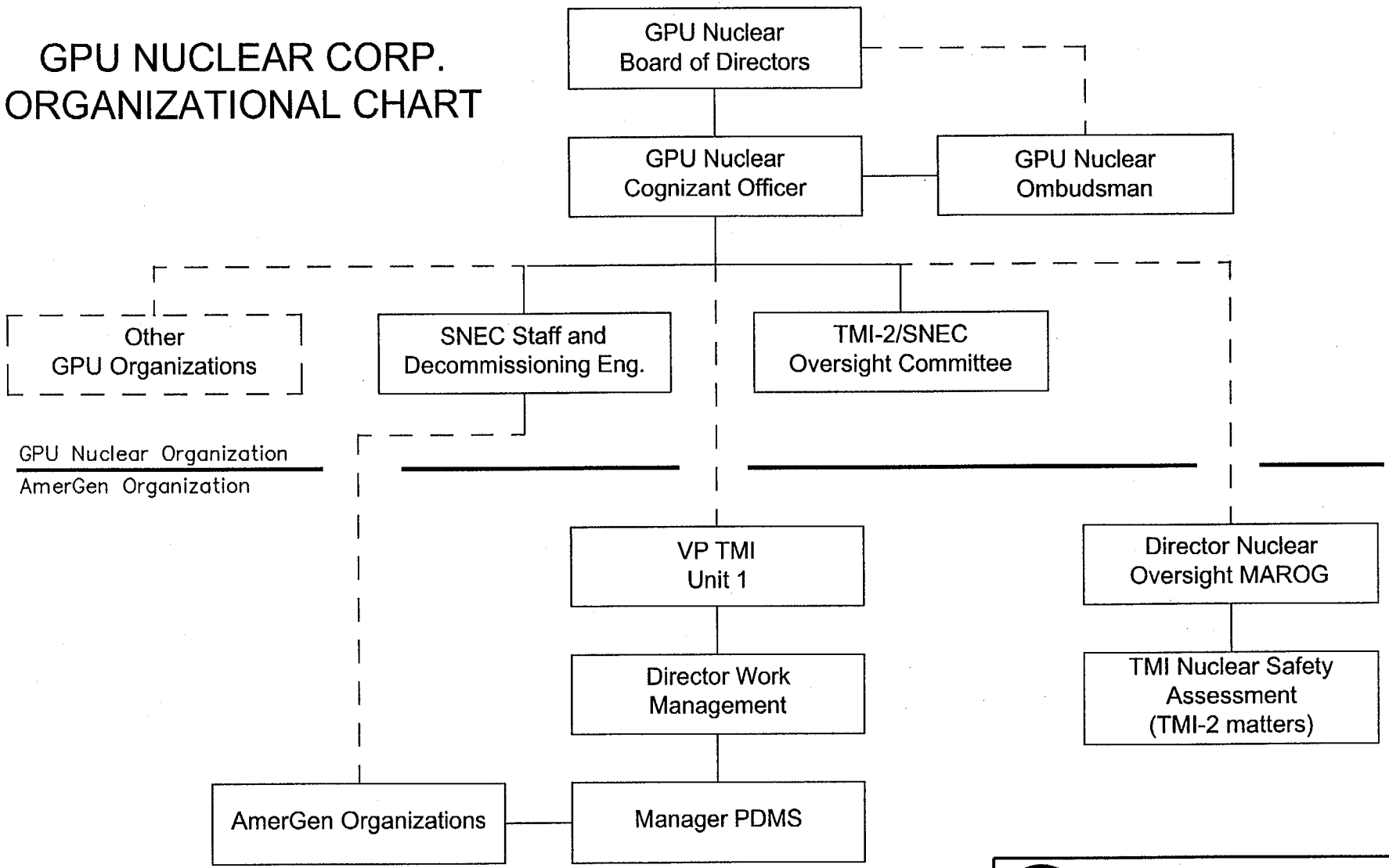
6. **All Quality Assurance audit reports prepared by AmerGen for TMI-2 will be provided to the GPU Nuclear Cognizant Officer.**

7. **GPU Nuclear will conduct a periodic QA Plan audit of AmerGen. The audit and frequency will be specified in the GPU Nuclear PDMS Quality Assurance Plan.**

8. **A GPU Nuclear employee or third party contractor (ultimately responsible to GPU Nuclear) will review and approve all 10 CFR 50.59 evaluations unique to TMI-2 and all evaluations involving a TMI-2 facility change. This will be incorporated in the TMI Review and Approval Matrix.**

9. **A GPU Nuclear employee or third party contractor (ultimately responsible to GPU Nuclear) will review and approve proposed changes to the emergency preparedness program that are unique to TMI-2.**

GPU NUCLEAR CORP. ORGANIZATIONAL CHART



CAD FILE: S1A,SKO,00,1000,001-,0202
THIS IS A COMPUTER GENERATED DRAWING, DO NOT REVISE MANUALLY

GPU NUCLEAR TMI-2

GPU NUCLEAR CORP. ORGANIZATIONAL CHART

TMI-2 POST-DEFUELING MONITORED STORAGE

SAFETY ANALYSIS REPORT

UPDATE 4
AUGUST 2001

TMI-2

POST DE-FUELING

MONITORED STORAGE

SAFETY ANALYSIS

REPORT

UPDATE 4
August 2001