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

Subject: Three Mile Island Nuclear Station, Unit 1 (TMI-1)
DPR-50/Docket No. 50-289
Three Mile Island Nuclear Station, Unit 2 (TMI-2)
DPR-73/Docket No. 50-320
Oyster Creek Nuclear Generating Station (OC)
DPR-16/Docket No. 50-219
Revised Corporate Emergency Plan - Revision 10

Dear Sirs:

Enclosed is one copy of the GPU Nuclear Emergency Plan, Revision 10.

The changes in Revision 10, which became effective January 26, 1996, are summarized in the Attachment to this letter. GPU Nuclear has determined that the changes in this revision do not decrease the effectiveness of the Emergency Plan and continue to meet the standards of 10 CFR 50.47(b) and 10 CFR 50.54(q).

Sincerely,

Robert L. Long

R. L. Long
Vice President and Director, Nuclear Services

AWM
Attachment

cc: Region I Administrator
Oyster Creek Senior Resident Inspector
TMI Senior Resident Inspector

A045
1/1

ATTACHMENT
SPECIFIC CHANGES

1. Tables 3A and 3B TMI/Oyster Creek Emergency Action levels have been deleted from the Emergency Plan. Information contained within these tables already exist in the sites Emergency Plan Implementing Procedures (EPIP's), EPIP-TMI-01 and EPIP-OC-.01. As a result of the elimination of these tables, the remaining tables were renumbered. Clarification was added to section 4.1 which identifies where the EAL's can be found.

2. Section 5.1.3.2 d,9 - Plant operations - deleted reference to the Oyster Creek EAC performing dose projections. Paragraph was revised to have consistency between the sites. The EAC at OC will review dose projections independently. At TMI, the RAC will independently review dose projections from the computer based automated dose assessment program. (Clarification)

3. Section 5.1.4 (14) Environmental Assessment Coordinator (EAC) bullets 1, 3, 4, 5, 6 and 8 have been identified as Oyster Creek only. Because of the new TMI computer based automated dose assessment program, these functions are no longer performed by the EAC.

4. Section 5.1.5 - Response to a TMI-2 Emergency - clarification was added which identifies how specific local alarms will be monitored if there is a failure of the remote monitoring system.

5. Section 5.2 - Long-Term Recovery Organization bullets (1, 4 and 7) have been revised due to the GPUN reorganization.

6. Section 5.3.1 - Medical Support Organization and Personnel -deleted reference to Radiation Management Consultants and replaced with Oak Ridge. GPUN no longer has a contract with RMC. GPU has a memo on file from Department of Energy regarding Radiation Emergency Assistance. Deleted reference to Medic 2 (Advanced Life Support). This organization has been consolidated with Lower Swatara EMS.

7. Section 6.3.1.2 - Emergency Personnel Exposure 1st paragraph - Additional wording has been added to clarify the type of personnel the licensee is talking about (i.e., offsite emergency personnel). Previous wording was not clear and could be misinterpreted. (clarification)

8. Section 6.3.3 - Medical Transportation - last sentence in the 3rd paragraph was revised to allow greater flexibility as to the location where instructions for the treatment and transportation of contaminated and injured individuals can be found.

9. Section 6.4.1 - Radiological Assessment and Offsite Monitoring - deleted reference to Oyster Creek EAC performing dose projections. Paragraph 6 was revised to have consistency at both sites. EAC will review dose projections independently at Oyster Creek. At TMI the RAC will independently review dose projections from the computer based automated dose assessment program. NOTE: The system is not available at Oyster Creek. Therefore, the RAC is responsible for the review of information from this system. Until a similar system can be incorporated at Oyster Creek, the EAC at OC will independently review the dose projections.

10. Section 7.4.1.16(2) deleted Joint Information Center Line. Since the JIC and EOF at TMI are now co-located in one building, this dedicated line is no longer required. Communications between the EOF and TMI is still maintained via tieline.

11. Section 7.5.1.1.b(5) - Main Steam Line Radiation Monitoring System. The last paragraph was revised to reflect the modification, justified by an Oyster Creek Tech Spec change allowing the removal of the auto closure function.

12. Section 7.5.1.2a - Three Mile Island - deleted the reference to TMI-2 1000-PLN-3580.02" since this plan no longer exists. The TMI-2 information is now captured under AP 1038 which provides a description of the TMI Fire Protection Program.

13. 7.5.1.4b - Oyster Creek - deleted reference to (Reference 5) of NUREG 1.23. There is no reference 5. (typo)

14. 7.6.3 - Environmental Assessment Command Center (EACC) Paragraph was revised to delete the reference to the OC EACC performing dose projections. OC EACC will provide an independent review however the RAC will perform dose projections.

15. Section 8.0 - Maintaining Emergency Preparedness - revised 2nd paragraph to be consistent with latest GPUN reorganization. (i.e., changes "Nuclear Assurance" to "Nuclear Services", Manager, Corp. Emergency Preparedness" to "Director, Radiological Health and Safety")

16. Section 8.1.4 - delete (1) from TMI

17. Section 8.1.6.2 - changes "Environmental Controls" to "Environmental Affairs".

18. Section 8.1.7 - delete "Manager Corporate Emergency Preparedness" and replaced with "Director, Radiological Health and Safety".

19. Section 8.3 - Review and updating of the Emergency Plan and Implementing Documents - changed "Quality Assurance Department" to "Nuclear Safety Assessment Department" due to GPUN reorganization. Also deleted the references to 1000-ADM-1291.02, GPU Nuclear Safety Review and Approval Procedure for TMI-2, and 1000-ADM-1218.02 Document Change Request Procedure. Information is captured in the 1000-ADM-1291.01 and 1000-ADM-1218.01, respectively.

20. Section 9.0 - Recovery - deleted references to "Director, Nuclear Assurance" and replaced with Director, Nuclear Services". GPUN reorganization.

21. Table 9B - Inventory of Oyster Creek Emergency Kits by General Category. I.A (6) and II.A (6) deleted paper, pencils, and envelopes. Routine office supplies are readily available in adjacent areas to EPF's and are easily obtainable. III Emergency Chem. Equipment deleted Petree Dish. Not used for PASS samples.

22. Old Table 12 - County, State and Federal Emergency Operations Centers - table was revised to reflect the new locations of EOC's for TMI.

23. Old Table 13A - TMI Emergency Communications Network - deleted Joint Information Center Line. Since the JIC and EOF are now co-located in one building, this dedicated line is no longer required.

24. Old Table 14 Divisional Commitment to Provide Instructions -Added CRO's Oyster Creek to Cyclic Training positions. Position was missed in previous revisions.

25. Old Table 16 - Emergency Response Organization staffing responsibilities - Table has been revised to reflect latest GPUN reorganization.

26. Figure 3 - OCNGS Site Arrangement - replace with current map.

27. New Table 14 - Periodic Training for GPUNC Emergency Response Personnel - periodic training has been revised for the Environmental Assessment Coordinators and Met-Dose Coordinators for TMI. Because of the new automated RAC dose assessment program at TMI, the RAC is now responsible for the review of information instead of the EAC. Therefore, RAC dose assessment is no longer required for TMI EAC personnel.

FOR INFORMATION ONLY

GPU Nuclear	GPUNC Corporate Emergency Plan	Number 1000-PLN-1300.01

Title
GPU Nuclear Corporation Emergency Plan for Three Mile Island and Oyster Creek Nuclear Station

Revision No.
10

Applicability/Scope	Responsible Office	Effective Date
This Plan has GPUNC-Wide Applicability	Emergency Preparedness	01/26/96

This document is within QA plan scope	X	Yes		No
Safety Reviews Required	X	Yes		No

List of Effective Pages

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7.0	8	25.0	8	43.0	10	61.0	8
8.0	10	26.0	8	44.0	8	62.0	8
9.0	8	27.0	8	45.0	8	63.0	10
10.0	8	28.0	8	46.0	8	64.0	8
11.0	8	29.0	10	47.0	10	65.0	8
12.0	8	30.0	8	48.0	8	66.0	10
13.0	8	31.0	8	49.0	9	67.0	8
14.0	8	32.0	10	50.0	9	68.0	10
15.0	8	33.0	10	51.0	10	69.0	8
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	Signature	Date
Originator: Corporate Emergency Planner	S.R. Lynch	11/9/95
Concurred by: Corporate Counsel & Secretary	/s/	12/04/95
Director, Adm. & Finance Division	/s/	11/22/95
Director, Communications	/s/	11/28/95
Director, TMI Division	/s/	12/05/95
Director, Nuclear Services Division	/s/	12/06/95
Director, Technical Functions Div.	/s/	12/05/95
Director, Oyster Creek Division	/s/	11/15/95
Corporate Procedures Coordinator	/s/	11/13/95
Approved by: Office of the President	J.J. Broughton	1/4/96

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FIGURES

FIGURE 1 TMI Site Arrangement

FIGURE 2 TMI Site Relative Location

FIGURE 3 OCNGS Site Arrangement

FIGURE 4 OCNGS Site Relative Location

FIGURE 5 TMI Site Exclusion Area and Low Population Zone

FIGURE 6 OCNGS Site Exclusion Area and Low Population Zone

FIGURE 7 TMI Site Plume Exposure Pathway (10 mile) Emergency Planning Zone

FIGURE 8 OCNGS Site Plume Exposure Pathway (10 mile) Emergency Planning Zone

FIGURE 9 TMI Site Ingestion Pathway (50 mile) Emergency Planning Zone

FIGURE 10 OCNGS Site Ingestion Pathway (50 mile) Emergency Planning Zone

FIGURE 11 TMI Normal Shift Organization

FIGURE 12 OCNGS Normal Shift Organziation

FIGURE 13 GPUNC On-Shift Emergency Organization - TMI-1 and OCNGS

FIGURE 14 GPUNC Initial Response Emergency Organization - TMI-1 and OCNGS

FIGURE 15 GPUNC Emergency Support Organization

FIGURE 16 TMI Notification Network

FIGURE 17 OCNGS Notification Network

FIGURE 18 Three Mile Island and Oyster Creek Development of Protective Action Recommendation (PAR) Logic Diagram

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1.0 GLOSSARY

1.1 Definitions

The following is a list of terms and their definitions which are used in the Emergency Plan and Implementing Documents:

1.1.1 **Access Control Point** - An access control point serves as the boundary line between the "clean" and radiologically controlled areas of the plant and serves as a processing station for access to the RWP required areas. The main access control point at TMI-1 is located in the Nuclear Services Area, 306' elevation in the TMI-1 Control Building. The main access control point at TMI-2 is located at the Radiological Controls laboratory, 305' elevation in the TMI-2 Service Building. The two main access control points at OCNGS are located on the north side of the Reactor Building. One is located at the Northeast corner and the other at the Northwest corner and both are at ground elevation.

1.1.2 **Accident** - An unintentional event which may result in an emergency.

1.1.3 **Adverse Meteorology** - (As described in NUREG/CR-2260) the short-term (0-2 hr.) atmospheric dispersion conditions represented by Pasquill "F" stability associated with a wind speed of 1 meter per second, and independent of wind direction. These conditions are exceeded an average of about 5 percent of the total time on an hourly basis (TMI). For OCNGS as defined in Reg. Guide 1.3, Figure 1A.

1.1.4 **Affected Persons** - Persons who, as the result of an accident, have been or may be radiologically exposed or physically injured to a degree requiring special attention (e.g., evacuation, decontamination, first aid or medical services, etc.).

1.1.5 **Alert** - An emergency classification where events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any release is expected to be limited to small fractions of the EPA Protection Action Guide exposure levels.

1.1.6 **Assessment Actions** - Those actions taken during or after an accident which are collectively necessary to make decisions to implement specific emergency actions.

1.1.7 **Clean Area** - The allowable levels of loose surface contamination for a clean area are less than 1000 dpm/100 cm^2 beta-gamma and 20 dpm/100 cm^2 alpha.

1.1.8 **Contaminated Area** - An area where contamination levels are in excess of those specified for a clean area.

1.1.9 **Control Room** - The location from which the reactor and its auxiliary systems are controlled. The TMI-1 Control Room is located on the 355' elevation in the TMI-1 control building. The TMI-2 Control Room is located on the 331.6' elevation of the TMI-2 control building. The OCNGS Control Room is located on the 46' elevation of the turbine building.

1.1.10 **Corrective Actions** - Those emergency actions taken to mitigate or terminate an emergency situation.

1.1.11 **Dose** - The energy imparted to matter by ionizing radiation per unit mass of irradiated material.

1.1.12 **Dose Commitment** - The dose that will be accumulated by a specific organ over a 50 year period following intake.

1.1.13 **Effluent Monitor** - An on-line or off-line instrument monitoring radiological conditions of a designed pathway to the environment (e.g., station ventilation exhaust).

1.1.14 **Emergency** - That situation or condition which may result in damage to property and/or may lead to undue risk to the health and safety of the general public and/or site personnel.

1.1.15 **Emergency Actions** - Those measures or steps taken to ensure that an emergency situation is assessed (assessment actions) and that the proper corrective and/or protective actions are taken.

1.1.16 **Emergency Action Levels (EAL)** - Predetermined conditions or values, including radiation and integrated dose; events such as natural disasters or fires; or specific instrument indications which, when reached or exceeded, require implementation of the Emergency Plan.

1.1.17 **Emergency Classifications** - The characterization of several classes of emergency situations consisting of mutually exclusive groupings including the entire spectrum of possible radiological emergencies. The four classes of emergencies are (1) Unusual Event, (2) Alert, (3) Site Area Emergency, and (4) General Emergency.

1.1.18 **Emergency Control Center (ECC)** - The location from which control and coordination of emergency actions are effected. The designated area encompasses the Shift Supervisor's Office and Control Room at TMI and OCNGS. Once the entire emergency response organization is activated, the Emergency Director retains command and control of all on-site activities from the ECC (TMI)/TSC (OCNGS).

1.1.19 **Emergency Core Cooling System** - System of pumps, piping, valves, etc., used to deliver emergency cooling water to the reactor core. At TMI, the Emergency Core Cooling System (ECCS) pertains to the pumps, piping, valves, etc., of the Decay Heat Removal System, Core Flooding System and the makeup portion of the Makeup and Purification System. At OCNGS, the ECCS includes the pertinent pumps, piping, valves, etc. of the Isolation Condenser, Core Spray and Automatic Depressurization Systems.

1.1.20 **Emergency Director (ED)** - Designated onsite individual having the responsibility and authority to implement the Emergency Plan, and who will coordinate efforts to limit consequences of, and bring under control, the emergency.

1.1.21 **Emergency Operations Center (EOC)** - Designated State, county, and Municipal Emergency Management Agency locations especially designed and equipped for the purpose of exercising effective coordination and control over disaster operations within their jurisdiction.

1.1.22 **Emergency Operations Facility (EOF)** - Designated location from which the Emergency Support Organization conducts the Corporations overall emergency response.

1.1.23 Emergency Operations Procedures - Specific plant procedures that provide step-by-step instructions to guide plant operations during potential or real emergency situations.

1.1.24 Emergency Plan - GPU Nuclear Corporation plan for dealing with emergencies at the TMI and Oyster Creek reactor sites.

1.1.25 Emergency Plan Implementing Procedures - Specific procedures in the Implementing Document which include emergency action levels and provide step-by-step emergency actions.

1.1.26 Emergency Planning Zone (EPZ) - There are two Emergency Planning Zones. The first is an area, approximately 10 miles in radius around the site, for which emergency planning consideration of the plume exposure pathway has been given in order to assure that prompt and effective actions can be taken to protect the public and property in the event of an accident. This is called the Plume Exposure Pathway EPZ. The second is an area 50 miles in radius around the site, for which emergency planning consideration of the ingestion exposure pathway has been given. This is called the Ingestion Exposure Pathway (EPZ).

1.1.27 Emergency Support Director (ESD) - Designated individual offsite having the overall responsibility for the management of the response to an accident and recovery operations.

1.1.28 Exclusion Area - As defined in 10 CFR 100.3; "that area surrounding the reactor, in which the reactor licensee has the authority to determine all activities including exclusion or removal of personnel and property from the area". At TMI, this is the area within a 2000 ft. radius from the point equidistant between the centers of the TMI-1 and TMI-2 reactor buildings. For emergency planning purposes, the TMI exclusion area boundary and the TMI site boundary are considered the same. The OCNGS exclusion area is the 1570 ft. radial area surrounding the OCNGS site, as measured from the centerline of the reactor building.

1.1.29 General Emergency - Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for large releases of radioactive material and/or loss of reactor building (containment) integrity, and other accidents that have large radioactive release potential such as fuel handling and waste gas system accidents. Releases can be reasonably expected to exceed EPA Protective Action Guide Exposure levels off-site for more than the immediate site area.

1.1.30 Implementing Document - A document containing a description of the concept of emergency operations, emergency communication system, Emergency Plan Implementing Procedures and administrative procedures.

1.1.31 Ingestion Exposure Pathway EPZ - The 50 mile Emergency Planning Zone in which a radioactive plume can cause the exposure of the population-at-risk and/or onsite personnel to internal contamination resulting from ingestion of contaminated water or foods, such as milk or fresh vegetables.

1.1.32 Joint Information Center (JIC) - Center of release of information to the news media, and the public, and for coordination of information releases with Federal and State agencies.

1.1.33 **Low Population Zone (LPZ)** - As defined in 10 CFR 100.3, the area immediately surrounding the exclusion area which contains residents, the total number and density of which are such that there is a reasonable probability that appropriate protective measures could be taken in their behalf in the event of a serious accident.

1.1.34 **Off-site** - Any area outside the owner controlled area.

1.1.35 **Operable** - A component or system is defined as operable when it is capable of performing its intended function within the required range.

1.1.36 **Operations Support Center (OSC)** - Designated location from which accident mitigation personnel are dispatched.

1.1.37 **Owner Controlled Area** - That area within the security fence that surrounds the immediate site area. At TMI, the area within the security fence that extends from the north vehicle gate along both shore lines to the south parking lot. At OCNGS, its that area located outside of the protected area fence surrounding the OCNGS.

1.1.38 **Parent County** - County in which the site is located i.e., Dauphin County for the TMI site, Ocean County for the Oyster Creek site.

1.1.39 **Personnel Monitoring Equipment** - As defined in 10 CFR 20.202, devices designed to be worn or carried by an individual for the purpose of measuring the dose received (e.g., pocket dosimeters, thermoluminescent dosimeters, etc.).

1.1.40 **Plume Exposure Pathway EPZ** - The approximate 10 mile Emergency Planning Zone in which a radioactive plume can expose the population-at-risk and/or onsite personnel to radiation. The principal modes of exposure in the EPZ are: (1) whole body external exposure to gamma radiation from the plume, and (2) dose commitments from inhalation of the radioactive material within the plume.

1.1.41 **Population-At-Risk** - Those persons for whom protective actions are being or would be taken.

1.1.42 **Population Center Distance** - The distance from the reactor to the nearest boundary of a densely populated center containing more than about 25,000 residents.

1.1.43 **Projected Dose** - A calculated estimate of dose which the population-at-risk may receive as a result of a radiological emergency in the absence of protective action.

1.1.44 **Properly Relieved** - Qualified individual/fit for duty.

1.1.45 **Protected Area** - As defined in 10 CFR 73.2, an area encompassed by physical barriers and to which access is controlled. This area includes all areas within the security fence that immediately surrounds the major site structures (i.e. Reactor, Auxiliary, Turbine, Service, Fuel Handling, and Control Buildings).

1.1.46 **Protective Actions** - Those actions taken during or after an emergency situation that are intended to minimize or eliminate the hazard to the health and safety of the general public and/or on-site personnel.

1.1.47 **Protective Action Guides** - Projected radiological dose or dose commitment values to individuals in the general population and to emergency workers that warrant protective action before or after a release of radioactive material. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety in taking the protective action. The protective action guide does not include the dose that has unavoidably occurred prior to the assessment.

1.1.48 **RAC Model** - Computer model used by the radiological assessment personnel to estimate radiological release source terms and make off-site dose projections. This model has been verified by comparison of results to those from the MIDAS Model.

1.1.49 **Radiologically Controlled Area** - All plant areas where radiation, contamination, or airborne radioactivity have a potential for existing in amounts above the limits set forth for an uncontrolled area as defined in 10CFR20; includes Radiation Area, High Radiation Area, Airborne Radioactivity Area, Radioactive Material Area, Contaminated Area or any other posting established for Radiological Controls purposes.

1.1.50 **Recovery Actions** - Those actions taken after the emergency to restore the plant as nearly as possible to its pre-emergency condition.

1.1.51 **Restricted Area** - As defined in 10 CFR 20.3, any area access to which is controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials. A restricted area shall not include any areas used as residential quarters, although a separate room or rooms in a residential building may be set apart as a restricted area.

1.1.52 **Risk County** - Any County which is within (in whole or in part) the Plume Exposure Pathway (i.e., approximate 10 mile) Emergency Planning Zone.

1.1.53 **Site Area Emergency** - An emergency classification where events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. This emergency class includes accidents which have a significant radiation release potential. Any releases are not expected to exceed EPA Protective Action Guide exposure levels except near the site boundary.

1.1.54 **State** - A term used for convenience to indicate either the State of New Jersey or Commonwealth of Pennsylvania or both.

1.1.55 **State Plan** - State developed and maintained radiological emergency response plan (RERP) which coordinates off-site response by state, county and municipal agencies.

1.1.56 **Technical Support Center (TSC)** - Emergency response facility utilized by engineering personnel to provide engineering support for emergency operations. At Oyster Creek, this facility is also used by the Emergency Director and his staff.

1.1.57 **Tornado Warning** - Meteorological conditions imminent for a tornado or a tornado sighted in the area.

1.1.58 **Unrestricted Area** - As defined in 10 CFR 20.3, any area to which access is not controlled by the licensee for the purposes of protection of individuals from exposure to radiation and radioactive materials, and any area used for residential quarters.

1.1.59 **Unusual Event** - An emergency classification where events are in progress or have occurred which indicate or allow recognition of a potential degradation of the level of safety of the plant, including contaminated injuries of plant personnel which require offsite emergency treatment. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

1.2 Abbreviations

1.2.1 AEOF - Annex to the Emergency Operations Facility

1.2.2 B&W - Babcock and Wilcox

1.2.3 BNE - Bureau of Nuclear Engineering (New Jersey)

1.2.4 BRP - Bureau of Radiation Protection (Pennsylvania)

1.2.5 CDE - Commited Dose Equivalent

1.2.6 CFR - Code of Federal Regulations

1.2.7 cpm - counts per minute

1.2.8 CRO - Control Room Operator

1.2.9 CRT - Cathode Ray Tube

1.2.10 DEPE - New Jersey Department of Environmental Protection and Energy

1.2.11 DER - Pennsylvania Department of Environmental Resources

1.2.12 DGI - Digital Graphics Incorporated

1.2.13 DOE - US Department of Energy

1.2.14 dpm - disintegrations per minute

1.2.15 EAA - Emergency Assembly Area (on-site)

1.2.16 EAC - Environmental Assessment Coordinator

1.2.17 EAAC - Emergency Assembly Area Coordinator

1.2.18 EACC - Environmental Assessment Command Center

1.2.19 EAL - Emergency Action Level

1.2.20 EBS - Emergency Broadcast System

1.2.21 ECC - Emergency Control Center

1.2.22 ED - Emergency Director

1.2.23 EMA - Emergency Management Agency

1.2.24 ENS - NRC Emergency Notification System

1.2.25 EOC - Emergency Operations Center

1.2.26 EOF - Emergency Operations Facility

1.2.27 EPA - US Environmental Protection Agency

1.2.28 EPI - Emergency Public Information

1.2.29 EPIP - Emergency Plan Implementing Procedure

1.2.30 EPZ - Emergency Planning Zone

1.2.31 ESD - Emergency Support Director

1.2.32 FEMA - Federal Emergency Management Agency

1.2.33 FRAA - Forked River Assembly Area

1.2.34 FRC - Federal Response Center

1.2.35 FRERP - Federal Radiological Emergency Response Plan

1.2.36 FRMAC - Federal Radiological Monitoring and Assessment Center

1.2.37 FRMAP - Federal Radiological Monitoring and Assessment Plan

1.2.38 FSAR - Final Safety Analysis Report

1.2.39 GM - Geiger Mueller (radiation detection tube)

1.2.40 GPU - General Public Utilities

1.2.41 GOS - Group Operating Supervisor (Oyster Creek Only)

1.2.42 GSS - Group Shift Supervisor (Oyster Creek Only)

1.2.43 HPN - NRC Health Physics Network Line

1.2.44 JIC - Joint Information Center

1.2.45 LPZ - Low Population Zone

1.2.46 NRC - US Nuclear Regulatory Commission

1.2.47 NRR - US Nuclear Regulatory Commission, Nuclear Reactor Regulation

1.2.48 NWS - US National Weather Service

1.2.49 NUREG - Nuclear Regulatory Guide

1.2.50 OCNGS - Oyster Creek Nuclear Generating Station

1.2.51 OEM - New Jersey State Police, Office of Emergency Management

1.2.52 O/P - Office of the President (GPUN)

1.2.53 OSC - Operations Support Center

1.2.54 PAG - Protective Action Guides

1.2.55 PAR - Protective Action Recommendation

1.2.56 PDMS - Post Defueling, Monitored Storage

1.2.57 PEMA - Pennsylvania Emergency Management Agency

1.2.58 PEMARS - Pennsylvania Emergency Management Agency Radio System

1.2.59 PTFC - Parsippany Technical Functions Center

1.2.60 RAA - Remote Assembly Area (off-site)

1.2.61 RAC - Radiological Assessment Coordinator

1.2.62 RAGEMS - Radioactive Gas Effluent Monitoring Systems (Oyster Creek Only)

1.2.63 RCC - Radiological Controls Coordinator

1.2.64 RERP - Radiological Emergency Response Plan

1.2.65 RMC - Radiation Management Consultants

1.2.66 RMS - Radiation Monitoring System

1.2.67 SDD - System Design Description

1.2.68 SF - Shift Foreman (TMI only)

1.2.69 SRO - Senior Reactor Operator

1.2.70 SS - Shift Supervisor (TMI only)

1.2.71 TEDE - Total Effective Dose Equivalent

1.2.72 TLD - Thermoluminescent Dosimeter

1.2.73 TMI - Three Mile Island

1.2.74 TSC - Technical Support Center

1.2.75 χ - Atmospheric Dispersion Factor (Chi/Q)

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2.0 APPLICABILITY AND SCOPE

The prime objectives of emergency planning are to: (1) develop a plan and implementing procedures that will provide the means for mitigating the consequences of emergencies (including very low probability events) in order to protect the health and safety of the general public and site personnel and to prevent damage to property and (2) ensure operational readiness of emergency preparedness capabilities.

This Emergency Plan has been developed in accordance with the provision of 10 CFR 50, Appendix E and 10 CFR 50.47, and is consistent with the guidelines given in (1) Regulatory Guide 1.70, "Standard Content and Format of Safety Analysis Reports for Nuclear Power Plants", Revision 3 and (2) "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", NUREG 0654/FEMA-REP-1, dated November, 1980. Additional references used in the development of this Emergency Plan are listed in Section 10.

2.1 General Demographic and Geographic Information

In addition to the following information, specific details concerning the Three Mile Island and Oyster Creek sites are included in the respective Final Safety Analysis Reports (FSARs).

2.1.1 General Information and Site Description

2.1.1.a Three Mile Island

The Three Mile Island site is operated by GPU Nuclear Corporation (GPUNC). The Three Mile Island Nuclear Unit #1 has a pressurized water-type nuclear steam supply system supplied by Babcock & Wilcox Company. The TMI-1 reactor uses chemical shim and control rods for reactivity control and generates steam with a small amount of superheat in once-through steam generators and is an 870 Mw plant. The TMI-2 reactor, damaged during an accident in 1979 has been defueled. Preparations are being made to place the Unit in long-term monitored storage. This condition is termed Post-Defueling Monitored Storage (PDMS). The arrangement of the major TMI-1 and TMI-2 facilities is shown in Figure 1.

Three Mile Island is located in an area of low population density about 12 miles southeast of Harrisburg, Pennsylvania.

The area is in Londonderry Township, Dauphin County, about 2.5 miles from the southern tip of Dauphin County, where the county is coterminous with York and Lancaster Counties.

The TMI site is part of an 814 acre tract consisting of Three Mile Island and several adjacent islands which were purchased by a predecessor of GPU Nuclear. The island, which is situated about 900 feet from the east bank and approximately one mile from the west bank of the Susquehanna River, is elongated parallel to the flow of the river with its longest axis oriented approximately due north and south. The north and south ends of the island have access bridges which connect the island to State Highway Route 441. The north access bridge is used daily. Route 441 is a two lane highway which runs parallel to Three Mile Island on the east bank of the Susquehanna River and is more than 2,000 feet from the TMI reactors at the closest point. A Conrail one-track line runs adjacent and parallel to Route 441 on the east bank of the river. On the west bank of the river, there is a multi-track Conrail line at the river's edge about 1.25 miles west of the site and a black top, two lane road that runs

parallel to it. There is a one-track railroad spur across the bridge on the north end of the island which is used for site-related activities. A general area map showing the relative location of the TMI sites is shown as Figure 2.

2.1.1.b Oyster Creek

The Oyster Creek Nuclear Generating Station (OCNGS) is operated by GPU Nuclear Corporation (GPUNC). OCNGS has a General Electric 670 Mw Boiling Water Reactor steam supply system. Control rods and recirculation flow are used for reactivity control. Steam generated within the reactor housing is utilized to drive a turbine coupled to the main generator. The arrangement of the major OCNGS facilities is shown in Figure 3.

The OCNGS site is located near the Atlantic Ocean within the State of New Jersey. The site, approximately 800 acres, is part of a 1,416 acre site owned by Jersey Central Power and Light Company and lies, in part, in Lacey and Ocean Townships, Ocean County. OCNGS is about two miles inland from the shore of Barnegat Bay and seven miles west-northwest of Barnegat Light on the Atlantic shorefront. The site is approximately nine miles south of Toms River, New Jersey, about fifty miles east of Philadelphia, Pennsylvania, and sixty miles south of Newark, New Jersey.

The major transportation routes include the Garden State Parkway and U.S. Highway 9, running north and south; U.S. Highway 72, State Highways 37 and 70, New Jersey Routes 532, 530, 554 and Lacey Road running east and west, which serve primarily as feeder routes to the Garden State Parkway and U.S. Route 9. U.S. Highway 9 provides the eastern most boundary with 755 acres lying east of the highway. U.S. Highway 9 provides the only access routes to the site by land. Water access to the site is provided by the Intracoastal Waterway, which runs through Barnegat Bay. A general area map showing the relative location of the OCNGS site is shown as Figure 4.

2.1.2 Owner Controlled Area, Exclusion Area and Low Population Zone

2.1.2.a Three Mile Island

The Owner Controlled Area for the Three Mile Island site includes all areas within the perimeter security fence. The minimum distance to the owner controlled area boundary is measured from the centerline of the Fuel Handling Building to the western shoreline of the island which is approximately 675 feet.

The Exclusion Area for the TMI site is a 2,000 foot radius that includes a portion of Three Mile Island, the river surface around it, and a portion of Shelly Island. The minimum distance of 2,000 feet occurs on the shore of the mainland in a due easterly direction. All land areas within the exclusion area are owned by GPU or its subsidiaries. A map showing the exclusion area boundary is included as Figure 5. For the purposes of Emergency Planning, the exclusion area boundary and the site boundary are considered the same.

The Low Population Zone has a minimum distance of 2 miles to its outer boundary. The area of the Low Population Zone is also shown in Figure 5.

2.1.2.b Oyster Creek

The Owner Controlled Area for the OCNGS includes all areas within the site perimeter security fence. At Oyster Creek, the minimum distance from the center line of the OCNGS Reactor Building to the eastern OCA fence is approximately 800 feet.

The Exclusion Area for the OCNGS is a 1570 ft. radius as measured from the center line of the Reactor Building. All land areas within the exclusion area are owned by the licensee.

The OCNGS low population zone is shown in Figure 6.

2.1.3 Population and Population Distribution

2.1.3.a Three Mile Island

As previously discussed, the low population zone has been defined with a minimum distance of 2 miles from its outer boundary to the TMI site. The nearest major population center is Harrisburg, Pennsylvania which is located approximately 12 miles northwest of TMI. This distance satisfies the requirements of 10 CFR 100 with respect to population center distance. The population of residential areas, typical enrollment in various schools, and the hospital patient capacity in the surrounding area can be found in the TMI Evacuation Time Estimate Study.

Within the two mile low population zone, there are no schools. There are several recreational areas (Falmouth Fish Commission Access Area, Tri-County Boat Club and Canal Lock Boat Launch Area). There is some seasonal shift in population within a 5 mile radius of Three Mile Island since there are over 100 summer cabins on the islands within the area. Additional transients participate in boating activities in the vicinity of Three Mile Island.

2.1.3.b Oyster Creek

The nearest population center is Toms River in Dover Township, 9.5 miles north of the site. Specific information regarding population densities within the Plume Exposure Pathway EPZ, (e.g., residential areas, typical school enrollment and typical hospital capacities) can be found in the Oyster Creek Evacuation Time Estimate Study.

An appreciable variance in population density occurs during June, July and August due to seasonal transient vacationers. The Oyster Creek area, particularly the bay and seashores, is a summer vacation area for the mid-Atlantic states. This seasonal population fluctuation occurs primarily in the eastern sectors.

2.1.4 Local Industrial and Military Facilities

2.1.4.a Three Mile Island

The Three Mile Island site is currently surrounded by farm lands within a 10 mile radius. Lands are used for dairy cattle, tobacco, poultry, vegetables, fruit, corn, wheat, and other products. A summary of land use for the risk counties is provided in Table 1 and the FSAR. The Susquehanna River is used for sport fishing and boating but is not used for commercial fishing. Manufacturing industries in the region produce clothing, wood products, shoes, electrical wiring devices, steel products, packed meat and other food. These activities, within a 10-mile radius of the site, are confined chiefly to the communities of Harrisburg, New Cumberland, Steelton, and Middletown. A listing of typical industries within 10 miles of TMI can be found in the site FSAR. There are gas and oil transmission lines located at a minimum distance of approximately 2 miles from TMI.

Approximately 3 miles downstream from the site is the York Haven hydro-electric project. The York Haven Station is operated on a "run-of-the-river" basis, and its power output is dependent primarily upon the water available. The reservoir is used for peaking operation during periods of low river flow. Brunner Island Station, a large steam-electric generating plant owned by the Pennsylvania Power & Light Company is located on the Susquehanna River approximately one mile downstream from the York Haven project. This station uses water from the river on a "once-through" basis for cooling water. Three other hydroelectric generating stations are also located downstream from TMI, with each project having a dam and reservoir on the Susquehanna River. The three stations are Safe Harbor, Holtwood, and Conowingo Hydroelectric projects, located approximately 25, 31, and 47 miles south of Three Mile Island, respectively. There is also a coal fired, steam electric plant at Holtwood, and the Muddy Run Pumped Storage Project is associated with Conowingo station. The Peach Bottom Nuclear Generating Station is located along the west bank of the Susquehanna River, about 41 miles downstream of Three Mile Island, just north of the Maryland-Pennsylvania border and is the only nuclear plant within a 50-mile radius of Three Mile Island.

There are two airports within 10 miles of the TMI sites. Harrisburg International Airport (formerly Olmsted Air Force Base) is located on the east bank of the Susquehanna River approximately 2.5 miles northwest of the site. The Capital City Airport is located approximately 8 miles west-northwest of TMI. The vital areas of the TMI sites are designed to withstand a hypothetical aircraft accident.

Conrail lines are located on both sides of the Susquehanna River, the closest being the east bank, approximately 2,000 feet from the TMI Reactor Buildings. Routine traffic in liquified petroleum gas was identified on the railroad line which passes along the east shore of the river. Analyses indicate that any missiles generated by this traffic would be less damaging than the postulated aircraft strike against which the plant is protected and that flammable gases would dissipate before reaching the TMI Nuclear Units.

The closest military installation to the sites is the Air National Guard facility at Harrisburg International Airport. There are no military firing ranges or missile facilities within a 10 mile radius of TMI. Other military facilities, however, are Army and Navy depots located at New Cumberland and Mechanicsburg, Pennsylvania, respectively.

2.1.4.b Oyster Creek

A brief summary of land use in Ocean County is included in Table 1. Typical industries within 10 miles of the OCNGS site are found in the Oyster Creek FSAR.

The area within 40 miles of the site is comprised primarily of forest, vacant, or farm land. Only about 25 percent of the land is developed. No major industry exists within a ten mile radius of the site, although several small industrial concerns exist in the Toms River area.

The nearest military installations are Fort Dix, New Jersey (approximately 35 miles northwest), McGuire Air Force Base (on the Fort Dix Military Reserve), and Lakehurst Naval Air Station (14 miles north). There is also a military reserve approximately 12 miles west along U.S. Route 72, utilized as a practice bombing range.

There is one private aviation center within the 10 mile radius; Robert J. Miller Airpark County Airport, approximately 9 miles northwest.

2.1.5 Emergency Planning Zones

GPU Nuclear Corporation has taken into consideration the information and data presented above, guidance provided by the Environmental Protection Agency, Nuclear Regulatory Commission, the Pennsylvania Emergency Management Agency and the New Jersey Office of Emergency Management, as well as other important factors such as organizational capabilities, availability of emergency facilities and equipment, and the methods for implementing the GPUNC Emergency Plan in defining the Emergency Planning Zones (EPZs) for the Three Mile Island and Oyster Creek sites. As a result, an EPZ having an approximate radial distance of 10 miles from the sites has been defined as the Plume Exposure Pathway EPZ. An EPZ having a radial distance of 50 miles from the sites has been defined as the Ingestion Exposure Pathway EPZ. Figures 7, 8, 9, and 10 illustrate the respective boundaries of these EPZs.

2.2 Scope of the Emergency Plan

In the event of an accident, a radioactive release may pose the principal threat to the workforce and population-at-large in the area around the plant site. Emergency preparedness planning accordingly then focuses on response to this release potential. Prime objectives include development of plans and procedures that provide the basis for efficient and effective radiological emergency response, ensure and maintain operational readiness and emergency preparedness and mitigate environmental impact.

The GPUNC Emergency Plan describes the methods and procedures to be used by GPU Nuclear in satisfying its onsite responsibilities. The Emergency Plan describes: (a) the organizations and facilities to be relied upon in responding to emergencies, (b) the means to be used for initial accident assessment and notification, (c) the resources available for continued monitoring, assessment and dissemination of information about the emergency, (d) the emergency measures to be taken, including onsite protective and corrective actions, and (e) the procedures to be followed for maintaining emergency preparedness.

To ensure that the response to emergencies is initiated in a timely manner and effectively controlled, the Emergency Plan is coordinated with other plans, programs, and procedures, as follows:

2.2.1 Emergency Plan Implementing Document

The GPUNC Emergency Plan has separate Implementing Documents for each of the GPUNC sites which are distributed to those individuals, agencies, organizations, and facilities where immediate availability of such information would be required in an emergency. The Implementing Documents are organized to provide:

- Detailed Emergency Plan Administrative Procedures which define all necessary actions that must be performed on a periodic basis in order to ensure readiness of the emergency preparedness program. These procedures cover such topics as training, drills, emergency equipment and administration of emergency duty rosters.

- Detailed Emergency Plan Implementing Procedures that define specific emergency action levels, requirements for implementation of the procedures, persons responsible for implementing each procedure and the detailed emergency actions (i.e., step by step instructions) necessary to implement the procedure. These procedures give detailed instructions to be used during an emergency including: emergency assessment, classification, notification, protective and corrective actions.

  The Emergency Plan Implementing Procedures have a direct relationship to the Emergency Plan and are coordinated with other corporate and site-specific plans, programs, and procedures.

2.2.2 Related Plans, Programs, and Procedures

- The site Security Plans and procedures and the Emergency Plan and Implementing Procedures have been coordinated to ensure that appropriate emergency actions can be taken. For example, the Security Plan and procedures will make provision for emergency response personnel and vehicle access when required by Emergency Plan Implementing Procedures.

- The GPU Nuclear Radiation Protection Plan sets forth the philosophies, basic policies and objectives of the Radiological Controls Programs at TMI and Oyster Creek Nuclear Generating Stations. The objectives of the radiological controls programs are to control radiation hazards to avoid accidental radiation exposures, to maintain exposures within the regulatory requirements and to maintain exposures to workers and the general population as low as is reasonably achievable. In addition, Radiological Controls Procedures provide adequate guidance and specify appropriate methods or techniques to ensure that the performance of each activity is in accordance with sound radiological controls principles, and is in compliance with applicable regulatory provisions. The pertinent information and details provided in these documents either have been incorporated into the Emergency Plan, Implementing Procedures or appropriately referenced.

- The GPU Nuclear Environmental Control Plan provides for systematic control of plant systems and materials to avoid accidental environmental discharges and thereby minimize the environmental impact of plant operation.

- A comprehensive set of Emergency Operations Procedures that are used to control plant operations during emergency and abnormal conditions have been prepared. Since there is a direct relationship between emergency operations and emergency planning, these procedures and the Emergency Plan Implementing Procedures are coordinated and complementary. As a result, specific Emergency Operations Procedures will, when appropriate, direct the onshift operations personnel to the applicable Emergency Plan Implementing Procedure(s).

- GPU Nuclear has developed Emergency Public Information Implementing Documents for the Oyster Creek and TMI site. These implementing document(s) describe the methods by which GPU Nuclear will disseminate information to the media and the public.

2.2.3 Related County and State Plans

The development of the Commonwealth of Pennsylvania and the State of New Jersey Emergency Plans and the GPUNC Emergency Plan were closely coordinated. In addition, specific State requirements for reporting of emergencies, providing information and data, and recommending protective actions, have been integrated directly into the Emergency Plan Implementing Procedures. In considering the Plume Exposure Pathway EPZ, there are also county plans that have been considered in the development of the GPUNC Emergency Plan. The State Plans designate the Pennsylvania Emergency Management Agency (PEMA) and the New Jersey State Police, Office of Emergency Management (OEM) as the lead state agencies for radiological emergency response planning and the state agencies through which the respective Governors will exercise coordination and control during emergency. The State Plans are integrated documents setting forth the resources and responsibilities of all relevant state agencies. Significant plans from the State Departments of Agriculture, Environmental Resources, Bureau of Radiation Protection PA, Bureau of Nuclear Engineering, NJ and Health are included in the State Plans.

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3.0 SUMMARY OF EMERGENCY PREPAREDNESS PROGRAM

The Emergency Preparedness Program, as defined by the GPU Nuclear Corporation, consists of separate, coordinated, documents. The Emergency Plan provides the means for performing advance planning and defining specific requirements and commitments that will be implemented by other documents and procedures (e.g., Administrative Procedures, Surveillance Procedures, and Emergency Plan Implementing Procedures). The Emergency Plan Implementing Documents provide the detailed information and procedures that will be required to implement the Emergency Plan, in the event of an emergency at the GPU Nuclear reactor sites and to ensure a high state of emergency readiness.

3.1 The GPUNC Emergency Plan

The GPUNC Emergency Plan ensures that all emergency situations, including those which involve radiation or radioactive material are handled logically and efficiently. It covers the entire spectrum of emergencies from minor, localized emergencies to major emergencies involving action by offsite emergency response agencies and organizations. The GPUNC Emergency Plan includes schemes for classifying emergencies consistent with the guidance provided by the Nuclear Regulatory Commission (NRC) in NUREG-0654. This classification system is described in detail in Section 4.0. A summary of each classification, its description, purpose and a list of the actions to be taken by GPUNC site personnel and offsite authorities is included in Tables 2A and 2B. Furthermore, this Plan incorporates response criteria (emergency action levels) which will be used in the assessment of emergency situations.

In summary, the GPUNC Emergency Plan provides:

1. Guidance for classifying emergency conditions.
2. Guidance for reclassifying such emergency conditions should the severity increase or decrease.
3. Details of emergency response organizations.
4. General guidelines, as well as specific details, as to which state, county and federal authorities and agencies, and other outside organizations are available for assistance.
5. Information pertaining to the emergency facilities and equipment available both on-site and off-site.
6. Emergency Preparedness direction necessary for the development of Emergency Plan Implementing Procedures.
7. Commitments to training, drills, reviews and audits, which will ensure a high degree of emergency preparedness and operational readiness on a continuous basis.
8. Figures and tables which display detailed information and data such as organization charts, maps, etc.
9. Site-specific Emergency Public Information Procedures.

- Site-specific plans and agreements pertaining to participating off-site organizations and agencies.

3.2 The Implementing Documents

The Emergency Plan Implementing Documents provide a "single source" of pertinent information and the procedures required by or useful to various emergency response organizations for each of the GPUNC sites. The Implementing Documents, therefore, consolidate and integrate specific material described in such documents as the Emergency Plan, the State Plans, and the various County Plans.

The TMI and OCNGS Emergency Plan Implementing Documents provide:

- . dministrative Procedures necessary to ensure a high state of readiness.
- Implementing Procedures which detail the emergency actions to be taken by appropriate plant personnel.

4.0 EMERGENCY CONDITIONS

4.1 Emergency Classification System

This Emergency Plan characterizes four classes of emergency situations which consist of mutually exclusive groupings covering the entire spectrum of possible emergency situations. Each class is associated with a particular set of immediate actions to be taken to perform: (1) accident classification, (2) notification of offsite agencies and support groups, and (3) mobilization of the applicable portion of the emergency organizations to cope with the situation and continue accident assessment functions. The various classes of emergencies represent a hierarchy of events based on potential or actual hazards presented to the general public. Emergencies may be classified in a lower category at first and then escalate to another, higher class if the situation deteriorates, as well as de-escalate as the situation improves.

Although mobilization of GPU personnel is generally keyed to a specific formal classification of emergency, declaration of an emergency is not a prerequisite for activation of GPUN emergency response organizations and facilities. However, activation and mobilization must occur if a prescribed emergency level is declared.

Each of the four emergency classes are characterized by emergency action levels. These levels consist of specific sets of plant parameters (e.g., instrument indications, system status) that will be used to initiate emergency response including (1) emergency class designation, (2) notification, and (3) emergency organization mobilization. These emergency action levels are used to facilitate rapid assessment and accident classification and to attain rapid readiness status on the part of emergency response persons and organizations. These levels have not been selected so as to infer any immediate need to implement protective actions but rather to ensure a reasonable amount of time is available to confirm in-plant readings by implementing assessment measures onsite and offsite. Once declaration of an emergency class requiring possible protective action occurs, dose assessments will be made by measurement and/or projection methods. The dose assessment values, along with other plant status assessments, will be reported to offsite agency officials as inputs for their decision on whether or not protective actions should be implemented for the public. The relationship of these dose assessment values to the Environmental Protection Agency (EPA) Protective Action Guides (PAGs), as well as the possibility of approaching or exceeding the PAGs, will be reported.

A specific methodology was used to relate Total Effective Dose Equivalent (TEDE), hereafter referred to as Total Whole Body Dose, thyroid dose (CDE) and bone dose commitment emergency action levels of the Alert, Site Area and General Emergency classes to the EPA PAGs. The radiation levels used in the Emergency Action Levels (EALs) were chosen such that an individual exposed to these levels would receive a dose equivalent to the following fraction of the EPA PAGs:

	Fraction of PAG
Alert	$\geq$ 0.01
Site Area Emergency	$\geq$ 0.05
General Emergency	$\geq$ 1.00

The applicable PAG(s) for TMI-1 and Oyster Creek Emergency Action Levels are 1 Rem total whole body dose (total effective dose equivalent) and 5 Rem thyroid dose (CDE). The corresponding limit for releases originating from TMI -2 is 1 Rem bone dose commitment due to the existing post accident radioisotope inventory (projected Strontium and Cesium exposure).

The philosophy used to classify an emergency is to promptly declare the highest class for which an emergency action level is indicated, based on plant status or projected dose. For example, a Site Area Emergency would be declared directly if a Site Area Emergency action level is exceeded, even if the lower Alert class had not been previously declared. The classification system is designed to permit rapid evaluation of plant conditions based on comparison to established emergency action levels to facilitate prompt recognition and declaration of emergencies (typically within 15 minutes of the onset of an event).

Emergency action levels and corresponding indications requiring emergency declaration are found in the site's Emergency Plan Implementing Procedures (EPIPs). The intent of the stated values is to provide absolute values which, if exceeded, will initiate the required action for the given emergency classification.

Each of the four emergency classes, and the related emergency action levels requiring declaration of each class, are described in the following subsections.

4.1.1 Unusual Event

The least severe of the four emergency classes defined by this Plan is called an Unusual Event. For the purposes of this Plan, an Unusual Event shall be defined as the occurrence of an event or events that indicate or allow recognition of a potential degradation of the level of safety of the plant.

This class shall also include contaminated injuries of plant personnel which require offsite emergency treatment. The incident shall be classified as an Unusual Event only if the event is a minor one and no releases of radioactive material requiring offsite response or monitoring are expected. Events in this class are selected based upon a potential to degrade to a more severe situation rather than an actual public hazard.

In addition the Emergency Director shall also declare an Unusual Event any time that in his judgement plant conditions exist that warrant the activation of emergency centers and precautionary public notification. The Unusual Event class may be referenced by an action statement in a specific Emergency Operating Procedure, Abnormal Transient Procedure or Abnormal Operating Procedure. Steps in these procedures state that an Unusual Event has occurred or is occurring and require that an Unusual Event class of emergency be declared in accordance with the Emergency Plan Implementing Procedures. All Emergency Plan related actions (notification, etc.) will be carried out in parallel with the remainder of the Operating Procedures.

In exercising the judgement as to the need for declaring an Unusual Event, uncertainty concerning the safety status of the plant, the length of time the uncertainty exists and the prospects for resolution of ambiguities in a reasonable time period is sufficient basis for declaring an Unusual Event.

4.1.2 Alert

The next level of emergency class designated in this Plan is called an Alert. An Alert is the occurrence of an event or series of events that indicate and allow recognition of an actual or potentially substantial degradation of the level of safety of the plant. As in the case of an Unusual Event, the Alert class includes emergency situations that are expected to be minor in nature but where it has been deemed prudent to notify more of the off-site emergency response agencies and mobilize a larger portion of the emergency organization. In addition, because of the nature of the Alert class (releases of radioactive material possible), broader assessment actions will be started. Events that will initiate an Alert shall be those with the potential of limited releases of radioactive material to the environment or events that indicate a decrease in plant safety with potentially severe consequences. As before, a situation will only be classified at the Alert level if none of the emergency action levels for a higher class have been exceeded or are expected to be exceeded in the near term. The values specified are absolute action levels requiring declaration of the Alert emergency class.

In addition, the Emergency Director shall also declare an Alert any time that in his judgement plant conditions exist that warrant the activation of emergency centers and precautionary public notification.

This class of emergency may also be referenced by arrival at an action statement in specific Emergency Operating, Abnormal Operating or Abnormal Transient Procedures. Steps in these procedures state that an Alert has occurred or is occurring and require that an Alert class of emergency be declared in accordance with Emergency Plan Implementing Procedures.

All Emergency Plan related actions (notification, etc.) will be carried out in parallel with the remainder of the Operating Procedure (s).

In exercising the judgement as to the need for declaring an Alert, uncertainty concerning the safety status of the plant, the length of time the uncertainty exists the prospects for resolution of ambiguities beyond a reasonable time period and the potential of the level of safety of the plant is sufficient basis for declaring an Alert.

4.1.3 Site Area Emergency

The next level of emergency class designated is the Site Area Emergency. The Site Area Emergency class includes accidents in which actual or likely major failures of plant functions needed for protection of the public have occurred. Although immediate protective actions are not automatically required, declaration of a Site Area Emergency will set into motion all personnel on-site and off-site that would be required to perform actions in preparation for a potential evacuation to off-site areas. Monitoring teams will be dispatched to make continuing assessments and provide officials with information necessary to make decisions concerning protective actions. The Site Area Emergency class includes accidents which have a significant radiation release potential.

In addition, the Emergency Director shall also declare a Site Area Emergency any time that in his judgement plant conditions exist that warrant the activation of emergency centers and precautionary public notification. In exercising the judgement as to the need for declaring a Site Area Emergency, uncertainty concerning the status of the plant functions needed for protection of the public, the length of time the uncertainty exists, the prospects for resolution of ambiguities beyond a reasonable time and the potential degradation of the plant functions needed for protection of the public is sufficient basis for declaring a Site Area Emergency.

This class of emergency may also be referenced by arrival at an action statement in specific Emergency Operating, Abnormal Operating or Abnormal Transient Procedures. Steps in these procedures state that a Site Area Emergency has occurred or is occurring and requires that a Site Area Emergency be declared in accordance with Emergency Plan Implementing Procedures as a minimum.

All Emergency Plan related actions (notification, etc.) will be carried out in parallel with the remainder of the Operating Procedure (s).

It should be noted that, unlike the two previously described classes of emergency, the Site Area Emergency class may likely involve some radiation exposure to the public. Many of the accidents included in the class have the potential for degradation to the General Emergency class. Although the emergency action levels for this class have been selected at values which would result in off-site exposures well below the protective action guides, off-site monitoring team reports and continuing assessment will lead to any final decision on protective actions to be recommended.

4.1.4 General Emergency

The most severe class of emergency defined by this Emergency Plan is the General Emergency. The General Emergency class includes accidents which involve actual or imminent substantial core degradation or melting with potential for loss of Reactor Building (containment) integrity (e.g. loss of two of three fission product boundaries with potential loss of the third), and other accidents that have large radioactive release potential such as fuel handling and waste gas system accidents.

In keeping with the philosophy adopted throughout this Plan, the emergency action levels are based on the EPA protective action guides and are used to (1) declare the emergency, (2) notify the appropriate authorities and support groups, and (3) mobilize the applicable portions of the emergency organizations. However, this class of emergency is somewhat different in that protective actions are typically recommended within 15 minutes of declaration of the General Emergency since the lower limits of the protective action guides may be exceeded. The emergency action levels have been selected so that time should be available to make confirmatory measurements in the field prior to implementation of any extensive (i.e., evacuation) protective actions.

This emergency class may arise from an action statement in specific Emergency Operating, Abnormal Operating or Abnormal Transient Procedures.

4.2 State, County and Local Classification System

State, county and local emergency plans incorporate the same emergency classification system as that utilized by GPUNC in this Plan. Since both the State and GPU Nuclear classification schemes include events which have significant potential for radioactive releases, it is imperative that specific guidance for initiating protective actions be available to the "decision-making" personnel in emergency response organizations and agencies. The Commonwealth of Pennsylvania and the State of New Jersey have, for planning purposes, adopted the Environmental Protection Agency (EPA) protective action guides (PAG's).

4.3 Spectrum of Postulated Accidents

Each of the discrete accidents that have been hypothesized for each GPUNC plant is encompassed within the aforementioned emergency classification scheme.

4.3.1 Classification of Hypothetical Accidents

4.3.1.a Three Mile Island

All of the events hypothesized in Chapter 14 of the TMI-1 Final Safety Analysis Report (FSAR) fall into one of the four emergency classes. Approximately half are included in the Alert, Site Area, and General Emergency categories. Table 3A lists each of these events and the related emergency class. A complete discussion of these hypothetical events may be found in Chapter 14 of the TMI-1 FSAR.

With TMI-2 in a defueled condition, many of the standard postulated accidents used as basis for emergency planning are no longer applicable. The Emergency Action Levels reflect the actual "Post Accident" condition of the plant by including protective systems and components, installed or modified since the accident, required to maintain the facility in a safe condition.

4.3.1.b Oyster Creek

All of the design basis accidents hypothesized in Chapter 15 of the updated Oyster Creek FSAR fall into one of the four emergency classes. Table 3B lists each of these design basis accidents and the related emergency classification. A complete discussion of any of these hypothetical events may be found in the FSAR.

4.4 Instrumentation Capability for Detection

The plant instrumentation that will be used to promptly detect accidents at TMI-1 and Oyster Creek is discussed in detail in the corresponding FSARs. Tables 4A and 4B lists each hypothetical accident and the important instrumentation that would be expected to detect each. Only major installed equipment is listed.

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5.0 GPUNC EMERGENCY ORGANIZATION

5.1 Mobilization

GPU Nuclear Corporation operates and provides technical support for the TMI and Oyster Creek sites. A complete description of the corporate organization is contained in the GPU Nuclear Corporation Organization Plan. GPUNC Emergency Response capabilities include On-Shift, Initial Response and Emergency Support Organizations. The On-Shift Emergency Organization includes members of the normal operating shift which assume an emergency posture to immediately respond to the emergency. The Initial Response Emergency Organization at TMI and OCNGS is comprised of rotating duty roster positions which maintain a one-hour response time, 24 hours a day, to relieve and or augment the On-shift organization as needed. The Emergency Support Organization is comprised of duty roster positions which maintain four hour and selected one hour response time, 24 hours per day, to augment the Initial Response Organization, as needed.

Emergency manpower staffing for each of the GPUNC sites is presented in Tables 5, 6 and 7. The tables include: Emergency position; minimum number of personnel required; shift position, title or expertise; emergency duties and location and person to which each emergency position reports. The Initial Response Emergency Organization shall report to the duty station within 1 hour of notification of declaration of an Alert, Site Area or General Emergency. The Emergency Support Organization shall be fully manned within 4 hours of notification of declaration of a Site Area or General Emergency; however, the Emergency Support Director and designated members of the EOF staff will respond within one (1) hour as noted in Table 7.

5.1.1 Transition from Normal Shift Organization to Emergency Shift Organization

The TMI and OCNGS Normal Shift Organizations are shown as Figures 11 and 12, respectively. Requirements for minimum shift crews are specified in the TMI-1 and OCNGS Technical Specifications. Licensed operators are provided on-site on a rotating shift basis to ensure the safe and proper operation of the plant 24 hours per day. In addition, personnel from other departments are assigned to shifts to provide additional capabilities. The Normal Shift Organizations can be augmented, in an emergency, with designated/additional personnel within 60 minutes of notification.

NOTE:

The Shift Supervisor position as described throughout this Plan includes Shift Supervisor at TMI and Group Shift Supervisor at OCNGS. The Shift Foreman position includes Shift Foreman at TMI and Group Operating Supervisor at OCNGS.

The normal operating shift organizations are generally described as follows:

- A **Shift Supervisor** is on duty at all times at TMI and OCNGS. The Shift Supervisor is the immediate position of authority and responsible for the safe and proper operation of the plant. The Shift Supervisor will be responsible for the initial evaluation of any abnormal or emergency situation and for directing the appropriate response. If it is determined that an emergency exists, those responsibilities assigned to the Emergency Director will be assumed by the Shift Supervisor.

The **Shift Supervisor** (or Senior Plant Representative) may request and direct activation of any or all emergency response organizations, or any portions there of, as he may deem appropriate, based on non-emergency plant conditions for which he perceives a need for additional support. This authority includes requesting activation of the Parsippany Technical Functions Center with the appropriate staffing to respond to a particular plant problem.

The **Emergency Director** will initiate appropriate actions, implement proper procedures, notify appropriate offsite emergency response organizations and agencies (e.g., risk county[ies], OEM, PEMA, NRC) and retain such responsibilities until relieved by the Initial Response Emergency Organization Emergency Director. During normal and emergency operations, the Shift Supervisor (GSS) shall retain responsibility for the plant safety and shall maintain control over the conduct of operations and personnel in the Control Room unless relieved by a senior reactor operator (SRO) licensed management representative.

4. The **Shift Foreman** at TMI and the **Group Operating Supervisor (GOS)** at OCNGS assist the Emergency Director. In the absence of the Shift Supervisor, the Shift Foreman/GOS will assume his responsibilities.

5. The **Control Room Operators** are responsible for the manipulation of controls as necessary to perform plant operations as directed by the Shift Foreman/GOS or Shift Supervisor. They are responsible to the Shift Foreman/GOS.

6. The **Auxiliary Operators** at TMI and Equipment Operators at OCNGS are responsible for performing component and/or system operations outside the Control Room. They are responsible to the Shift Foreman/GOS.

7. In addition to the operations personnel assigned to each shift, a **Shift Technical Advisor** will be assigned to each shift. He will serve as an advisor on plant safety to the Shift Supervisor. He shall have no duties or responsibilities for manipulation of controls or for command of operations.

8. To meet the TMI-1, TMI-2 and OCNGS Technical Specification requirements to have at least one member of the operating shift "qualified to implement radiation protection procedures", three Radiological Controls Technicians will be assigned to each shift. These technicians are qualified to determine doses received by workers during the performance of their duties and will be available during emergencies on a 24-hour-per-day basis to perform related functions.

9. To provide for round-the-clock maintenance coverage (TMI-1 and OCNGS), a maintenance crew is assigned to each shift. This crew typically consists of a foreman and several craft personnel providing capability in the mechanical, electrical, and instrumentation and controls disciplines.

10. The **Site Security Force** provides round-the-clock security services in accordance with the Security Plan and procedures.

5.1.2 On-Shift Emergency Organization

An On-Shift Emergency Organization will be maintained for each site, i.e., TMI and OCNGS. Upon declaration of an emergency, members of the Normal On-Shift Organization gain additional responsibilities by assuming roles as the On-Shift Emergency Organization. This transition is shown in Figure 13. These roles are retained until these personnel are relieved by members of the Initial Response Emergency Organization or other qualified personnel. The On-Shift Emergency Organization is described as follows:

- **Emergency Director** - The senior licensed individual in the Control Room (i.e., TMI-1 Shift Supervisor or OCNGS Group Shift Supervisor) assumes the duties of the Emergency Director. The TMI-1 Shift Supervisor assumes the duties of the Emergency Director in the event of a TMI-2 related emergency. The individual assigned to the duties of Emergency Director, will assume overall charge of the plant emergency, ensure that the GPUNC Emergency Plan is properly implemented and notify senior plant management. He shall retain his normal plant responsibilities in addition to these emergency responsibilities until properly relieved. When relieved, this individual may assume the Operations Coordinator position.

  Due to the numerous responsibilities assigned to the Shift Supervisor at the onset of an emergency, he shall prioritize his actions to (1) ensure the safe operation of the plant, (2) ensure that immediate notification requirements are met, (3) obtain an operational and radiological assessment of the emergency, and (4) perform additional emergency actions as designated in the plant procedures as time and conditions permit.

- **Shift Foreman/GOS** - The next senior licensed individual in the control room, (i.e., TMI Shift Foreman, OCNGS Group Operating Supervisor) is responsible for directing the actions of the control room operators to return the plant to a safe condition. He may assume the responsibilities of the Operations Coordinator. When relieved, he again reports to the senior licensed individual, i.e., Shift Supervisor, etc., and continues to direct plant operations through the control room operators.

- **Shift Technical Advisor** - The Shift Technical Advisor retains his normal duties to advise and assist the Emergency Director on plant conditions at TMI and OCNGS.

- **ECC Communications Coordinator** - TMI and OCNGS control room operators assume the role of ECC Communications Coordinator. This position is responsible to make notifications to offsite agencies until properly relieved. The remaining control room, equipment and auxiliary operators continue to support emergency plant operations.

- **ECC Communicator** - The ECC Communicator position is filled by maintenance personnel at TMI. This position is responsible for callout of the Initial Response Emergency Organization and Emergency Support Organizations. At OCNGS, callouts are made by security personnel.

- **Radiological Assessment Coordinator** - The Group Radiological Controls Supervisor (GRCS) at TMI and OCNGS assumes the role of Radiological Assessment

Coordinator (RAC) and becomes overall in charge of the radiological assessment effort. This position reports to and advises the Emergency Director in regards to in-plant, onsite and offsite radiological conditions. The RAC performs dose projections, directs onsite and offsite radiological/environmental survey teams and formulates Protective Action Recommendations which are then relayed to the Emergency Director. When relieved, the Group Radiological Controls Supervisor assumes the RCC position from the senior Radiological Controls technician.

- **Radiological Controls Coordinator** - The senior Radiological Controls technician at TMI and OCNGS assumes the role of Radiological Controls Coordinator (RCC), directing the dispatch of Radiological Controls technicians from the OSC. When properly relieved, he returns to his normal duties of radiological support.

- **Operations Support Center Coordinator** - The Shift Maintenance Foreman at TMI and OCNGS fills the Operations Support Center (OSC) Coordinator position. His responsibilities include chemistry, maintenance and operations support. This position reports to the Emergency Director until properly relieved. He may assume the position of Emergency Maintenance Coordinator and oversees emergency maintenance activities until properly relieved.

- **Chemistry Coordinator** - Senior Chemistry technicians at TMI and OCNGS assume the position of Chemistry Coordinator. This position reports to the OSC Coordinator and is responsible for sample procurement and analysis. When relieved, he returns to his normal duties of chemistry support.

- **Security Coordinator** - The Security Coordinator position is filled by the Site Protection Shift Supervisor/designated Senior Site Protection Officer and is responsible for directing the security force, accountability, access control and interfaces with the local law enforcement agencies/EOD.

5.1.3 Initial Response Emergency Organization

Personnel are assigned to positions on the Initial Response Emergency Organization by the Director of the applicable Division or their designees. The TMI and OCNGS Initial Response Emergency Organizations are illustrated on Figure 14. The duty roster assignments will be published to ensure that full coverage is provided. As a minimum, this organization will be manned at the Alert level.

5.1.3.1 Direction and Coordination

As previously stated, the Shift Supervisor TMI and OCNGS will initially assume the responsibilities of the Emergency Director in the event of an emergency. Until personnel can be recalled to staff the Initial Response Emergency Organization, the Shift Supervisor will assign members of the on-shift organization to carry out the appropriate prioritized actions. In addition, he will ensure notification of the duty roster Emergency Director, who will relieve the Shift Supervisor of Emergency Director responsibilities upon his arrival in the Control Room for TMI and/or the TSC for Oyster Creek. If the Shift Supervisor at TMI or OCNGS is unavailable or becomes incapacitated for any reason, the Shift Foreman/GOS has the authority to

assume the position of Emergency Director until properly relieved by a designated Emergency Director. The Operations Coordinator may assume the ED Role, if necessary, until properly relieved.

The **Emergency Director** has the authority and the responsibility to immediately and unilaterally initiate any emergency action, including providing protective action recommendations to authorities responsible for implementing offsite emergency measures.

Following notification of an existing or potential emergency, the Emergency Director will be responsible for the assessment of emergency situations, especially where the emergency presents a real or potential hazard to offsite persons or property. The Emergency Director will implement the Emergency Plan through the use of specific Emergency Plan Implementing Procedures, activate necessary and/or required portions of the emergency organizations and, as appropriate:

- Establish the necessary communications to ensure that all emergency organizations are kept informed of the status of the emergency.
- Provide direction and support in the plant emergency mitigation process.
- Ensure that notification and reports to County, State, and Federal governments, are made in a timely manner.
- Interpret radiological data in terms of real-time measurements and projected radiological doses in order to evaluate the need to recommend offsite protective actions.
- Ensure adequate protective measures for the safety of personnel involved in emergency response efforts.

The Emergency Director is vested with certain authority and responsibility that shall not be delegated to a subordinate. Included are:

- Approving and directing official notifications to offsite agencies.
- Approving information for release to the news media. ED/ESD approval is not required for public announcement of formal emergency declarations and changes of emergency classifications.
- Approving and, if possible, personally conveying appropriate Protective Action Recommendations to the State (e.g., BRP-PA, OEM-NJ)
- Brief the NRC Site Team Leader and serve as principle "point of contact" for receiving NRC directives. However, NRC will interface with other GPUN emergency response personnel in mitigating the consequences of the emergency.
- Classification of an emergency event.

⑥ Directing onsite evacuation at the Alert or lower level emergency classification based on potential hazard to non-essential personnel.

⑦ Authorizing emergency workers to exceed 10 CFR 20 Radiation Exposure Limits.

⑧ Approving and directing deviation from established procedures during plant emergencies or during a declared National Security Emergency. Procedures shall be followed unless the situation dictates a valid need to deviate and in all cases the deviation shall be documented. Emergency Operating Procedures are written to address emergency conditions and generally should be followed with no deviations.

NOTE

For National Security Emergencies the following conditions must be met: 1) When this action is immediately needed to implement National Security Objectives as designated by the National Command Authority through the NRC, and 2) No action consistent with license conditions and technical specifications that can meet National Security objectives is immediately apparent.

No one other than a licensed SRO individual or Senior Management can make the decision to depart from the Technical Specifications, the license or license conditions (required by 10 CFR 50.54). However, if a more senior manager is present (i.e., Emergency Director) even though he does not possess an SRO License the decision authority would be passed to him as a higher authority in the chain of command. The licensed SRO shall provide his best judgement to the ED for consideration. Beyond that, the SRO shall follow the orders of his supervision. For emergencies at TMI and Oyster Creek the Emergency Directors shall consult the SRO and the technical staff to the fullest extent practicable in arriving at a decision to deviate from the Technical Specifications, the license or license conditions (required by 10 CFR 50.54).

If the decision is made to depart from technical specifications, license or license conditions (required by 10 CFR 50.54), notify the NRC before taking such actions, if time permits or if time does not permit, then within one hour. Deviations from Technical Specifications, the license and license conditions (required by 10 CFR 50.54) should only be authorized in extreme cases. However, only the specific portions of those GPUN Plans and Programs that implement the requirements of 10 CFR 50.54 need be considered when reporting deviations to the NRC. As an example, this Emergency Plan is a license condition required by 10 CFR 50.54. However a deviation from this plan does not necessarily require invoking 10 CFR 50.54(x). This emergency plan is required by 10 CFR 50.54 to meet the standards in 10 CFR 50.47(b) and the requirements of 10 CFR 50 Appendix E. Only the items in these two parts are the ones that need be considered when deciding the applicability of 10 CFR 50.54(x). Specific instructions on the applicable parts of the GPUN Plans and programs required by the license and 10 CFR 50.54 will be contained in the implementing procedures.

NOTE

10 CFR 50.54(x) must be invoked when deviating from the Technical Specifications, License, license conditions (required by 10 CFR 50.54) or safeguards measures. This should only be done when such action is immediately needed for public health and safety and no other alternatives are apparent.

If the decision is made to depart from license conditions or technical specifications, notify the NRC before taking such actions, if time permits or if time does not permit, then within one hour.

When the designated Emergency Support Director (ESD) arrives at the Emergency Operations Facility (EOF) and declares himself to be ready to assume that role, he will assume overall responsibility for management of the response to the accident and recovery operations. With activation of the ESD function, the ESD specifically will assume decision authority for items 1, 2, 3 and 4, above. Decision authority for items 5, 6, 7 and 8 above will be retained by the Emergency Director (ED). Decisions on all of the listed actions normally will result from close and continuous consultation between the ESD and the ED and it is the responsibility of the ED to ensure the ESD is provided with the necessary information to arrive at timely and appropriate decisions. In the special case of event classification, the ESD shall retain the prerogative to overrule the ED if, in the judgment of the ESD, uncertainty or other considerations exist to the extent warranting classification of a higher level of emergency than that classified by the ED. Directives from the NRC must come from the Director of the executive team (typically, the NRC Chairman) or the Director of Site Operations (typically, the NRC Regional Administrator). Such advice or directive can only be communicated to the Emergency Director (the Emergency Support Director when the EOF is activated). If a directive is issued by the NRC Director or Director of Site Operations, the ED/ESD should request written confirmation which spells out the specific nature of the directive.

While the ED/ESD may challenge the advice of the NRC, the ED/ESD must comply with all directives.

With respect to protective action recommendations for the public, the NRC may either endorse the GPUNC recommendation or opt to recommend a different one. The ED/ESD is encouraged to include the NRC and State representatives in the protective action recommendation discussions in order to arrive at a mutually agreeable recommendation. In the event that the NRC opts to recommend a different recommendation, they will communicate directly with the State. Their recommendation, like the utility recommendation, will be considered by the State in the development of a Governor directive.

Upon arrival of the NRC personnel, the ED/ESD should:

- Verify who is the senior NRC person in charge (Site Team Leader)

❷ Ask the Site Team Leader to inform the ED/ESD once he assumes the role of Director Site Operations and whether this designation also includes the responsibility to issue directives.

❸ Request that the NRC keep GPUN informed of all substantive information exchanges between the NRC and the State.

❹ Request that the NRC provide all directives in writing.

As a matter of policy, when a judgement is made by the senior person in the Control Room to declare an emergency based on a discretionary emergency action level, senior management will honor this decision unless it is in error.

To ensure that proper offsite authorities are kept fully informed of the emergency status and actions in progress, the Emergency Director will ensure that follow-up messages containing the following information, if it is known and appropriate, are transmitted in a timely manner:

- Location of incident and name and telephone number (or communications channel identification) of caller
- Date/time of incident
- Class of emergency, nature of emergency, and plant status
- Type of actual or projected release and identification of potentially affected areas
- Estimate of quantity of radioactive material released or being released and height of release
- Isotopic and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
- Prevailing weather conditions (e.g., wind velocity, direction, temperature, atmospheric stability data)
- Actual or projected dose rates and integrated dose at exclusion area boundary and at about 2, 5 and 10 mile radii, including sectors affected
- Surface radioactive contamination levels
- Emergency response actions underway
- Recommended actions, including protective measures
- Request for on-site support from off-site organizations
- Prognosis for future course of event based on current plant information

5.1.3.2 Plant Staff Emergency Assignments

a. Assistance

The **ED Assistant** provides direct interface with the ECC Communications Coordinator, Emergency Assembly Area Coordinator, Security Coordinator and Public Information Representative. He then advises and assists the Emergency Director in matters pertaining to these areas.

b. Communications

The **ECC Communications Coordinator** will report to the ED Assistant at TMI and OCNGS. He will function as liaison between the ECC and GPUNC Initial Response and Emergency Support Organizations, governmental agencies and other off-site support organizations (e.g. Technical Support Center, Technical Support Representative, NRC headquarters, Babcock and Wilcox). The ECC Communications Coordinator will provide reliable and accurate communications in accordance with the appropriate Emergency Plan Implementing Procedures. In addition, he is responsible for maintaining records of outgoing and incoming communications. The **ECC Communicators** will report to the ECC Communications Coordinator and be responsible for maintaining communications with the NRC as well as assisting in the notification process and receiving incoming calls.

c. Technical Support

The **Technical Support Center Coordinator** will report to the Emergency Director. The Technical Support Center engineers will assist the Technical Support Center Coordinator in analyzing current and projected plant status and, in close communications with the Emergency Director, provide technical support and recommendations regarding emergency actions. In addition, the Technical Support Center Coordinator will, as necessary, provide a direct interface with the Technical Support Representative at the EOF and PTFC. Specifically, the Technical Support Center Coordinator and his staff will:

1. Analyze general plant conditions and develop guidance for the Emergency Director and operations personnel.
2. Analyze mechanical, electrical, and instrument and control problems; develop possible solutions; design and coordinate the installation of short-term modifications.
3. Analyze thermchydraulic and thermodynamic problems and develop solutions.
4. Resolve questions concerning Operating License requirements with NRC representatives until relieved of this responsibility by the Emergency Support Organization.

- Assist in the development of Emergency Procedures and Operating Procedures necessary for conducting emergency response operations.

- Provide technical support concerning plant operating procedures, emergency operating procedures and normal plant specific concerns and serve as liaison between the Parsippany Technical Functions Center and the plant operations staff.

d. Plant Operations

(1) The **Operations Coordinator** is responsible for coordinating operations and maintenance activities through the Shift Supervisor and the Operations Support Center Coordinator. The Operations Coordinator may not relieve the Shift Supervisor or specifically direct plant operations unless he is a licensed Senior Reactor Operator. The Operations Coordinator will report to the Emergency Director.

(2) The senior on-shift management person initially assumes the duties of the Emergency Director. Once relieved by the Emergency Director, he may assume the Operations Coordinator position and will be responsible for maintaining control over plant operations. He shall have the Shift Foreman/GOS, Shift Technical Advisor and the Operations shift personnel to assist him.

(3) The **Shift Technical Advisors** will advise their respective Shift Supervisors on activities that impact the safe and proper operation of the plant.

(4) The **Shift Foreman/GOS** will continue his normal duties; i.e., directing control room operators and assisting the Shift Supervisor. He reports directly to the Shift Supervisor and has the operations shift personnel report to him. He may assume the responsibilities of Operations Coordinator. When relieved, he again reports to the senior licensed individual, i.e., Shift Supervisor, etc. and continues to direct plant operations through the control room operators.

(5) The **Operations Shift** under the direction of the Shift Supervisor, is responsible for the safe and proper operation of the plant at all times. Therefore, the operations shift will respond to all abnormal and emergency situations and take action as necessary to mitigate the emergency.

The shift organization will be self-reliant for a sufficient period of time to allow for initial emergency response, notification of required personnel, and the assembly and integration of response personnel into the emergency organization.

The station personnel are familiar with the operation of plant systems and the location and use of emergency equipment. Some members of

each shift are trained in firefighting, first aid, and the use of radiation monitoring equipment. The duties of the operations shift during an emergency includes operating both primary and secondary plant systems, making initial notifications to off-site authorities and operational support to the emergency.

(6) The **Operations Support Center (OSC) Coordinator** is responsible for supporting operations in the areas of maintenance, first aid, search and rescue, chemistry and radiological controls. He reports to the Operations Coordinator. The Emergency Maintenance Coordinator, Chemistry Coordinator, and Medical Representative report directly to him.

(7) The **Emergency Maintenance Coordinator** is responsible for directing the activities of maintenance personnel involved in emergency maintenance repair and corrective actions.

(8) Shift maintenance personnel serve as the **Emergency Repair Teams** and shall report directly to the Emergency Maintenance Coordinator. They shall be used for emergency repair, search and rescue, drivers for radiation monitoring teams and fire brigade members (if qualified).

(9) The **Radiological Assessment Coordinator (RAC)** is responsible for all on-site radiological assessment activities. The RAC reports to the Group Leader - R&EC after the Emergency Support Organization is activated.

Initially, the Radiological Assessment Coordinator is responsible for directing the on-site and off-site Radiological/Environmental Survey Teams (after they are dispatched), Radiological Engineering Support, and the Radiological Controls Coordinator. He shall coordinate initial on-site and off-site radiological assessment activities, review results, report findings and make recommendations to the Emergency Director. In addition, he shall interface with the Environmental Assessment Coordinator to keep him current as to plant conditions and radiological source terms. The EAC will assume off-site radiological monitoring responsibilities but the RAC will retain the duty of performing dose projections. At TMI, the RAC will independently review dose projections from the computer based automated dose assessment programs. At Oyster Creek the EAC will review these dose projections independently. The RAC performs initial offsite dose assessment using the RAC software/hardware at TMI and OCNGS. Redundant power supplies, hardware and software exist at TMI and OCNGS for RAC code utilization.

(10) The **Radiological Controls Coordinator** will report to the Radiological Assessment Coordinator (RAC) and will have the Radiological Controls Technicians report to him. The senior radiological controls technician initially assumes the duties of the Radiological Controls Coordinator

until properly relieved. He will be responsible for coordinating the in-plant radiological controls activities from the OSC and initially dispatching the Radiological/Environmental survey teams until they have established communications with the RAC. His functions include supervising the radiological controls technicians in the areas of radiological access control; radiological control coverage for emergency repair, corrective actions, search and rescue, first-aid, assembly area monitors, firefighting, and personnel monitoring. He will be responsible for prioritizing the immediate radiological controls response in-plant. The Radiological Controls Coordinator must keep the OSC Coordinator advised of the jobs he is covering in order to effectively coordinate the in-plant radiological control needs with plant operational needs.

(11) The **Radiological Controls Technicians** will report directly to the Radiological Controls Coordinator. In addition to the aforementioned functions, the technicians will also be responsible to assist the Radiological Controls Coordinator in the call out of additional technicians, and for performing as radiological/environmental survey team members. Additional technicians may be obtained by calling in off-duty technicians.

(12) The **Chemistry Coordinator** will report directly to the OSC Coordinator. He shall be responsible for obtaining and analyzing all post-accident samples in accordance with procedures.

(13) **Chemistry Technicians** will report directly to the Chemistry Coordinator at the OSC. They will perform all post-accident chemistry samples and analyses.

(14) **Radiological Engineering Support** shall assist the RAC in performing dose projection calculations, source term calculations, and other calculations or determinations necessary to assess radiological hazards and to minimize personnel exposure.

(15) The **Emergency Assembly Area Coordinators** direct the muster of non-essential site personnel at the Emergency Assembly Areas. The Emergency Assembly Area Coordinators Report to the ED Assistant in the ECC.

(16) The **Public Information Representative** At the onset of an emergency, the duty Public Information representative is notified after the risk counties and PEMA or the New Jersey State Police and implements the Emergency Public Information (EPI) Document(s). Another Public Information Representative is dispatched to the control room for information gathering. This representative will remain at the control room for TMI, and the TSC for OCNGS during the emergency to provide technically accurate information to public information

personnel who will be preparing information for release to the public. This information will be approved by the Emergency Director.

(17) The **Medical Representative** is responsible for coordination of emergency medical support.

(18) The **Security Coordinator** is responsible for the overall security response during an emergency. Coordinates the activities of the Site Protection Shift Supervisor and local law enforcement agencies/EOD.

(19) The following functions will be performed by trained members of the normal shift complement:

a. Firefighting

Specific personnel on each shift (Site Fire Brigade) are trained in firefighting to ensure such capability will be available 24 hours per day. The Fire Brigade, under the direction of the Fire Brigade Team Leader or another individual designated by him, shall respond to all confirmed fire alarms or as directed by the Control Room and report to the location of the fire with assigned equipment. During the normal work week, additional qualified firefighting personnel will, as necessary, be obtained from the normal on-site organization. Assistance will be requested from local fire departments through the county dispatcher/appropriate local dispatch system if deemed necessary by the Emergency Director.

b. First Aid and Search and Rescue

Medical emergencies and search and rescue operations will be the responsibility of the First Aid and Search and Rescue Teams. Specific personnel on each shift are trained in first aid techniques to ensure such assistance will be available 24 hours per day. Assistance will be requested from outside medical support personnel or organizations as deemed necessary by the Emergency Director.

c. Radiological Monitoring

Prior to the activation of the entire Initial Response Organization, the Radiological Controls Coordinator (RCC) may dispatch offsite and/or on-site Radiological/ Environmental Survey Teams in coordination with the OSC Coordinator to perform radiological monitoring functions. Initially, the off-site and on-site Radiological/Environmental Survey Teams report directly to the Radiological Assessment Coordinator. The Environmental Assessment Coordinator (EAC) will assume command of off-site radiological and environmental assessment upon activation of the

EACC. At this point the off-site Radiological/Environmental Survey Teams will either report directly to the EAC or return to the plant as instructed. The onsite Radiological/Environmental Survey Teams will continue to report to the RAC. The various survey teams are responsible for performing radiation/contamination surveys, other radiological monitoring as directed, and for assisting in assigned decontamination activities. A complete discussion of monitoring teams and dose assessment is contained in Section 6.4.1.

d. Security and Personnel Accountability

The site Security Force will operate in accordance with the established Security Plan and Procedures. During emergencies, the Site Protection Shift Supervisor assumes the duties of the Security Coordinator. The site Security Force will report to the Security Coordinator in emergency situations. The Security Coordinator, in turn, shall report to the ED Assistant. The security force will respond and provide assistance as required for security controls. The security force will assume responsibility for personnel accountability. In addition, provisions have been made in the Security Plan for admitting off-site emergency vehicles when Security is notified by the Shift Supervisor or Emergency Director and for escorting these vehicles to the proper location.

5.1.4 Emergency Support Organization

The Emergency Support Organization will provide technical and logistic support in the event of a serious or potentially serious emergency. An illustration of the GPUNC Emergency Support Organization is included as Figure 15. This organization will be staffed by personnel from the normal station organization, the normal technical support organization, and consultants.

In general, the responsibilities of the Emergency Support Organization are to:

1. Provide liaison and communications with the Nuclear Regulatory Commission and the appropriate State and county agencies.
2. Provide for public relations activities and disseminate information to the public.
3. Provide for environmental monitoring and assessment in support of the Initial Response Organization.
4. Provide security support.
5. Support the Initial Response Organization in engineering and technical matters.
6. Coordinate the restoration and/or operation of all generation, transmission and distribution facilities.

- ⑭ Procure and dispatch transportation equipment and services.
- ⑮ Purchase materials, equipment, and services necessitated by the emergency.
- ⑯ Provide assistance for re-entry operations and post-accident planning.
- ⑰ Assign post-accident investigation and review responsibilities.

1. The **Emergency Support Director** will be responsible for activating and directing the Emergency Support Organization and for ensuring that the functional groups provide a coordinated response in support of the Initial Response Organization. The Emergency Support Director shall report to the EOF within one hour of notification of declaration of a Site Area or General Emergency or when directed and will serve as the senior corporate management representative at or in the vicinity of the site. As such, during emergency operations, the Emergency Support Director will provide overall direction and policy guidance for the emergency response; the Emergency Director will retain primary responsibility for the operation and control of the plant. As emergency situations stabilize, the Emergency Support Director may expand his involvement in the technical direction of in-plant accident management. This will provide a controlled means of shifting to a recovery organization should that type of organizational arrangement be deemed appropriate. The Initial Response Emergency Organization shall report to the Emergency Support Director through the Emergency Director. .

2. The **ESD Assistant** located at the EOF will assist the Emergency Support Director by interfacing with senior representatives of the Emergency Support Organization and providing status reports to the Emergency Support Director. The ESD Assistant assists and advises the ESD in matters pertaining to communications, technical support, implementation of the Emergency Plan and public information. In the absence of the Emergency Support Director, the ESD Assistant will not assume his emergency responsibilities. Rather, it will be the most senior (ESD qualified) operations person (e.g., Director TMI or OCNGS). Until the designated Emergency Support Director (ESD) arrives at the EOF, the person designated to coordinate the activities of the EOF is the ESD Assistant. His responsibilities are specifically limited to the activation of the EOF, coordination of activities prior to the arrival of the ESD, and communications with the Emergency Director (ED) located onsite. The ED retains decision-making authority as the senior corporate representative until the arrival of the ESD.

3. The **Group Leader-Radiological and Environmental Controls** (R&EC), also located at the EOF, functions as the "point of contact" for radiological and environmental information for the Emergency Support Director. The Group Leader - R&EC collects information from the RAC and EAC and presents that information to the ESD. This position is overall-in-charge of the radiological and environmental controls effort. This position also maintains industrial health and safety responsibilities.

4. The **EOF Communications Coordinator** and **EOF Communicators** will be responsible for the operation of the communications systems at the Emergency Operations Facility and the coordination of requests for outside assistance. The EOF Communicators report to the EOF Communications Coordinator who, in turn reports to the ESD Assistant.

   Their duties include, but are not limited to:

- The setup and operation of primary communications systems.
- The setup and operation of backup communications systems.
- Maintaining records of communications.
- Maintaining the status boards at the EOF.
- Coordinating the procurement of outside resources (e.g., technical assistance, manpower, equipment, etc.) with the Group Leader-Administrative Support.

5. The **Public Information Representative**

Once the EOF is activated, a Public Information Representative shall report to the EOF in a staff capacity and is responsible for preparation of information to be disseminated to the public. This information is to be approved by the Emergency Support Director. At TMI and at Oyster Creek a Tech Info Specialist is dispatched to the EOF.

6. The **Joint Information Center Presiding Media Center Briefer** reports to the Joint Information Center to lead and coordinate news media briefings and the release of information on an emergency. This role, filled by one of the Public Information Duty Representatives, is the key media response role at the Joint Information Center.

7. The **Emergency Preparedness Representative**, located at the EOF, will provide advice and information to the ESD Assistant relating to on-site, off-site and state emergency facilities, communication capabilities, personnel and resource availabilities and procedural requirements.

8. **Site Services Coordinator and Staff** coordinate the allocation of GPU Nuclear and non-Company transportation, facilities, maintenance equipment and manpower to support onsite operations, maintenance and radiological controls activities. He shall report to the Group Leader-Administrative Support and interface with the onsite Emergency Maintenance Coordinator.

9. The **Group Leader-Technical Support** located at the PTFC is responsible for the technical support of emergencies at TMI and OCNGS. They will provide technical leadership, guidance, and analysis to the Plant through the on-site Technical Support Center Coordinator and his staff with respect to plant conditions, reactor core status, chemistry support and subsequent plant operations. When the Parsippany Technical Functions Center is manned and functional (i.e., data link functional, communications established with Technical Support Center; proper turnover completed and the center is fully activated), the Group Leader-Technical Support will advise the TSC Coordinator and will:

- Assume the position of technical advisor for the emergency.
- Provide technical support, analysis, and guidance in matters concerning specific plant request, equipment response, exceeding normal equipment operating limits and technical specifications, varying from normal and emergency operating procedures.

- ❸ Analyze reactor core, mechanical, electrical, and instrument and control problems; develop solutions; design and assist in the coordination of the installation of short-term modifications.
- ❹ Provide recommendations to the plant that would mitigate the consequences of the emergency.
- ❺ Assist in the development of Emergency Procedures and Operating Procedures necessary for conducting emergency operations and resolve questions concerning Operating License requirements.
- ❻ Analyze conditions and develop guidance for the Emergency Support Director, the Emergency Director and operations personnel concerning core protection.
- ❼ Assess the long term implications of actions taken and provide recommendations that would minimize damage to plant equipment, loss of plant assessment/monitoring capabilities, and reduce plant radiation and contamination levels
- ❽ Provide a representative to the EOF.

Chemistry support will be provided to TMI and OCNGS from the PTFC. Such support may include, but is not limited to:

- ❶ Determination of in-plant sampling requirements based on plant conditions.
- ❷ Coordination of the use of laboratory instrumentation, sample analysis, sample storage, and the interpretation and dissemination of analysis results.
- ❸ Identification and coordination of required equipment and manpower resources.
- ❹ Establishment of a monitoring and controlling program for normally uncontaminated systems that may be, or have the potential of being, contaminated as a result of the emergency.

10. The **Technical Support Representative**, located at the EOF, shall provide technical assistance to the Emergency Support Director, shall serve as liaison with the PTFC and TSC, and shall assist in the review of news releases to ensure technical accuracy.

11. The **Group Leader-Administrative Support** and his staff will be responsible for administrative and logistic functions required to support the Initial Response and Emergency Support Organizations. He shall have the Access Center Coordinator and Site Services Coordinator, and their respective staffs report to him. The types of support services that might be required include, but are not limited to:

- ❶ General Administration
  - Word processing
  - Typing pool
  - Reproduction
- ❷ Personnel Administration and Accommodations
  - Personnel processing (Registration, Indoctrination and Training, Security badging)
  - Lodging, food
- ❸ Outside Plant Support
  - Trailer set-up
  - Janitorial service
  - Telephones
- ❹ Commissary
  - Temporary facilities
  - Meal delivery
- ❺ Human Resources
  - Manpower
  - Labor relations
  - Payroll
  - Badging

12. The **Access Center Coordinator** will be responsible for processing and badging of personnel at the AEOF for those individuals requiring site access.

13. The **Radiological Controls Support Coordinator** and his staff will be responsible for all aspects of radiological controls support for the Initial Response Organization. He shall interface with the Radiological Assessment Coordinator to determine radiological status and equipment and manpower needs. Support rendered may include, but is not limited to:

- ❶ Issuing personnel monitoring devices to emergency response personnel requiring site access.
- ❷ Personnel dosimetry (whole body and extremity) and emergency TLD control and documentation.
- ❸ Bioassay analysis and evaluation.
- ❹ Identification and coordination of required equipment and manpower resources.
- ❺ ALARA consideration of solid radioactive waste generated.

14 The Environmental Assessment Coordinator (EAC) and staff will assume responsibility for all offsite radiological and environmental monitoring. The EAC and staff will respond within one hour upon notification of an Alert, Site Area or General Emergency. The Environmental Assessment Coordinator will be located in the Environmental Assessment Command Center and will initially report directly to the Emergency Director. Following activation of the EOF, the EAC will report to the Group Leader - R&EC. He shall direct the staff's assignments which shall include, but are not limited to:

❶ Determine real time meteorology data and input into the Dose Assessment System Computer (OC Only).

❷ Track and plot release plume direction and speed.

❸ In coordination with the RAC, support and/or conduct total whole body dose (TEDE) projection, thyroid dose (CDE) and bone dose commitment, as appropriate, at all Emergency Planning Zone boundaries and other locations as needed (OC Only).

❹ Transfer vital information on plume travel and dose projections (OC Only) to the Group Leader R&EC and update the Radiological Assessment Coordinator.

❺ Serve as primary advisor to the Group Leader R&EC on matters concerning Protective Action Recommendations (OC Only).

❻ In coordination with the RAC assess the impact of liquid and gaseous effluents with respect to Technical specifications and EPA protective action guides (OC Only).

❼ Deploy and direct off-site Radiological/Environmental Monitoring Teams.

❽ In coordination with the RAC maintain communications with BNE regarding dose projection/assessment matters (OC Only).

❾ Maintain an emergency and routine Radiological Environmental Monitoring Program (REMP) which includes off-site radiological/environmental monitoring.

5.1.5 Response to a TMI-2 Emergency

TMI-2 Control Room alarms will be monitored on a 24 hour a day basis remotely from Unit 1 Control Room or by manning the TMI-2 Control Room for failure of the remote monitoring system. For failures of specific local alarm capabilities, local conditions will be monitored in accordance with the applicable procedures.

A TMI-2 related emergency will be reported to the TMI-1 Control Room. TMI-1 Control Room personnel will assess and evaluate the situation; classify the event as required; and provide the appropriate response. When direct monitoring is in effect the individual stationed in the Unit 2 Control Room may leave the Control Room area in order to provide direct assistance

to the TMI response team provided that he/she does not leave the Control Room unattended in excess of one hour for any single event.

5.2 Long-Term Recovery Organization

In those cases where post-accident conditions indicate that recovery operations will be either complicated or will extend over a relatively long period of time, GPU Nuclear will shift from the emergency response organizations (e.g., Initial Response and Emergency Support) to a long-term recovery organization. The functioning of the recovery organization will be dependent on the nature of the accident, post-accident conditions (e.g.,plant conditions, radiation/contamination levels, etc.) and other factors to be determined at the time. Prior to initiating recovery operations, a specific long-term recovery organization will be defined based on the normal GPUNC organization. A detailed discussion of recovery operations is provided in Section 9.

A typical long-term recovery organization is described as follows:

- The **Office of the President**, GPU Nuclear is responsible for overall recovery operations. This includes overseeing the operations of the various functional groups and ensuring that all activities, proposed courses of action, and contingency plans are subjected to proper analysis and coordination. Selection of senior personnel to fill the key positions in the long-term recovery organization will be based on the particular conditions. Specific functions internal to the Office of the President include Communications, Corporate Counsel & Secretary, and Nuclear Safety Assessment.

- The **Director, Administration and Finance Division**, is responsible for financial reporting, accounting, budgets, material management support.,

- The **Director, Communications** is responsible for the overall guidance and direction of the public relations and communications program to ensure distribution of information about the nuclear facilities to public officials, industry representatives, media, customers, employees and the general public.

- The **Corporate Counsel & Secretary** is responsible for nuclear security and the legal department.

- The **Director, Technical Functions Division** is responsible to TMI and Oyster Creek to provide engineering support, technical planning and analysis, procedure support, control room technical support, data reduction and management, and support relating to licensing requirements. This Division Director also assists the sites by providing chemistry and metallurgical analytical services and recommending chemistry requirements and specifications for recovery and plant lay-up activities.

- The **Plant Directors** are responsible for ensuring the safe and efficient clean-up of all radioactive waste and required decontamination of buildings for either return of the unit to full operation or decommissioning of the unit as a nuclear generating station in accordance with corporate policies, all applicable laws, regulations, licenses and technical requirements. In

addition, they provide liasons with the NRC. Manpower and commissary requirements will be coordinated with the Corporate Services Division.

- The **Director, Nuclear Services Division** is responsible for the development and implementation of the Human Resources, Planning and Regulatory Affairs, Medical Program, Training and Education, Environmental Affairs and Radiological Controls/Occupational Safety Program.

5.3 Additional Support

The nature of an emergency may require augmenting the GPUNC emergency organizations with assistance from additional personnel and organizations. In order to ensure that support from local law enforcement, fire departments, hospitals, ambulance services and other organizations will be available on relatively short notice, agreements have been established with personnel and organizations. Agreements from offsite individuals, groups and agencies that support Three Mile Island and Oyster Creek may take one of the following forms:

1. Contracts
2. Letters of Agreement
3. Memoranda of Understanding
4. Formal Emergency Plans

These typical support organizations include:

NOTE

While this list reflects letters of agreement currently in effect, it is possible that the list may change for a number of reasons. The EP Department will consider the impact that a loss of an agency will have on the emergency response process.

5.3.1 Medical Support Organizations and Personnel

1. Three Mile Island

   - Londonderry Township Fire Company (ambulance service)
   - Lower Swatara Emergency Medical Services
   - Bainbridge Fire Company (ambulance service)
   - Lancaster County Medic 5 (advanced life support)
   - Hershey Medical Center
   - Harrisburg Hospital
   - Oak Ridge

2. Oyster Creek

   - Community Medical Center
   - Southern Ocean County Hospital

- Oak Ridge
- Lacey Township First Aid Squad
- Lanoka Harbor First Aid Squad
- Waretown First Aid Squad

5.3.2 Firefighting Organizations

- Three Mile Island

NOTE

These are supplemented by Mutual Aid agreements with other firefighting as organizations.

- Bainbridge Fire Company
- Liberty Fire Company No. 1
- Londonderry Township Fire Company
- Rescue Hose Company No. 3
- Union Hose Company No. 1
- Friendship Fire and Hose Company No. 1 (Elizabethtown)
- Lower Swatara Fire Company

- Oyster Creek

- Lanoka Harbor Fire Department
- Forked River Volunteer Fire Company
- Waretown Fire Department
- Bayville Fire Department

5.3.3 Law Enforcement Agencies

1. Pennsylvania State Police
2. New Jersey State Police/Office of Emergency Management
3. Others as specified in the State Plans
4. Lacey Township Police Department

5.3.4 Other Government Agencies

1. Nuclear Regulatory Commission
2. Dept. of Commerce/NOAA
3. Dept. of Energy
4. Federal Aviation Administration
5. U.S. Coast Guard
6. Dept. of the Army
7. Dept. of the Navy (Lakehurst - OCNGS)
8. Others as specified in the State Plans
9. National Weather Service

5.3.5 Miscellaneous Organizations

1. Consolidated Rail Corporation (TMI)
2. GPU Service Corp.
3. Other utilities
4. The Institute for Nuclear Power Operations (INPO)
5. American Nuclear Insurers
6. Babcock and Wilcox (TMI)
7. General Electric (OCNGS)
8. aviation services

5.3.5.1 NEI/EPRI/INPO Coordination Agreement

In order to provide efficient and timely transfer of technical and public information regarding formal emergencies at nuclear power stations and maximize their assistance to their utility members and the industry, the Nuclear Energy Institute (NEI), the Electric Power Research Institute (EPRI), the Institute of Nuclear Power Operations (INPO) have agreed to coordinate their actions and activities. In general, support will be provided as follows:

1. NEI - Technical & Regulatory Division will maintain an emergency response capability for consultation on regulatory issues.

2. NEI - Industry Communications and Publications Division will develop and issue, in coordination with the affected utility, appropriate public statements to the news media, as necessary.

3. INPO will provide the Nuclear Network electronic communications system to its members, NEI and EPRI to facilitate the flow of media and technical information about the emergency to other INPO members and participants and coordinate the flow of technical information among the parties to the agreement.

4. EPRI will maintain an emergency response capability and be available for consultation and to conduct in-depth analysis of the emergency as appropriate. Both EPRI and INPO will be available to assist the affected utility through their analysis capabilities. EPRI and INPO will coordinate such efforts with each other.

Specific details can be obtained by consulting the NEI/EPRI/INPO Coordination Agreement which is maintained on file by the Emergency Preparedness Department.

5.4 Government Agencies

GPU Nuclear Corporation has and will continue to work closely with Federal, State and County agencies in coordinating emergency preparedness activities for the Emergency Planning Zones to ensure the health and safety of the general public. As a part of this coordination, each participating agency has been assigned specific responsibilities and authority for both emergency planning and emergency response. Also as a part of this combined effort, specific emergency-related notification

and information reporting requirements have been defined between GPU-Nuclear and the various participating agencies. Information pertaining to emergency-related offsite notification requirements that activate the emergency response organizations and the subsequent information reporting requirements is provided in Section 6.1. Additional reporting requirements, contained in 10 CFR 50.72, 10 CFR 50.73, and plant (safety) Technical Specifications, will also be met. A brief description of the key elements of the role of each of the participating Federal, State and County agencies is provided in the following subsections.

5.4.1 Federal Radiological Emergency Response Plan

The Federal Radiological Emergency Response Plan (FRERP) is to be used by Federal agencies in peacetime radiological emergencies. It primarily concerns the offsite Federal response in support of State and local governments with jurisdiction for the emergency. The FRERP: (1) Provides the Federal government's concept of operations based on specific authorities for responding to radiological emergencies; (2) outlines Federal policies and planning assumptions that underlie this concept of operations and on which Federal agency response plans (in addition to their agency-specific policies) were based; and (3) specifies authorities and responsibilities of each Federal agency that may have a significant role in such emergencies. The FRERP includes the Federal Radiological Monitoring and Assessment Plan (FRMAP) for use by Federal agencies with radiological monitoring and assessment capabilities.

5.4.1.1 Nuclear Regulatory Commission

When the licensee notifies the NRC of an incident, the initial NRC response is to ascertain the status of the plant and monitor licensee activities. The purpose of this monitoring role is to assure that the public and the environment are fully protected. The NRC (and other organizations) will measure offsite radiological effects and will develop a projection of on-site and off-site effects for use by other Federal State and local agencies.

If and when the NRC determines that there is a potential threat to the public or the environment, it will begin to monitor more intensively to develop an NRC assessment of the problems. The NRC will offer specific advice to the licensee to help solve or limit the consequences of the problem.

In addition to monitoring and advisory activities, in some unusual and very rare situations, the NRC could find it necessary to intervene in a limited fashion to direct the licensee's onsite response; however, it is not expected that NRC will be required to assume this role. In such an unlikely event, the NRC would issue formal orders to the licensee to take certain measures and then monitor implementation of the actions ordered. In this role, the licensee continues to make other key operational decisions and to operate and manage the facility with licensee personnel. Directives from the NRC must come from the Director of the Executive Team (typically, the NRC chairman) or the Director of Site Operations (typically), the NRC Regional Administrator). NRC directives would be channeled to licensee management; (ED until the ESD is available).

To ensure reports can always be made, the NRC Headquarters Operations will be called. The Headquarters Operations Officer will record the call and bridge it to the Region I Duty Officer and Manager on call.

The NRC in conjunction with FEMA whenever possible, will present any Federal recommendations to the State or other appropriate offsite authority with jurisdiction for implementing or relaxing protective actions. In the case of a fixed nuclear facility licensed by the NRC, the licensee is responsible for developing appropriate protective action recommendations and promptly providing those recommendations to State and local authorities with or without NRC's concurrence. NRC will evaluate the licensee's protective action recommendation as time permits and will either concur in them or suggest modifications, as appropriate. In the event NRC opts to recommend a different recommendation, they will communicate directly with the State. Their recommendation, like the utility recommendation, will be considered by the State in the development of the Governor's directive. FEMA is then responsible for promoting coordination among Federal agencies providing assistance to the State in implementing those recommendations if such assistance is requested by the State, and for communicating those recommendations to the responding Federal agencies.

5.4.1.2 Department of Energy

The Department of Energy (DOE), during the initial phases of the emergency, and the EPA thereafter, will work with the appropriate State and local agencies to coordinate offsite radiological monitoring and assessment activities. DOE or EPA will assess monitoring data and present them to the NRC and appropriate State agencies. The NRC will use this information, together with its assessment of the current condition and prognosis of the emergency on site, to develop or evaluate public protective action recommendations.

5.4.1.3 U.S. Coast Guard

During a radiation emergency at OCNGS which could involve exposure to offsite personnel, the U.S. Coast Guard and NJ Marine Law Enforcement Bureau will provide assistance by notifying mariners, maintaining water traffic control, and implementing protective and parallel actions as directed. The N.J. State OEM will coordinate the emergency response activities of these agencies in support of OCNGS.

5.4.1.4 Department of the Army

The local Ordinance Detachment, Department of the Army, will provide an Explosive Ordinance Disposal capability in response to requests for assistance in the event of a bomb threat.

5.4.1.5 Federal Aviation Administration

The Federal Aviation Administration will ensure air traffic is diverted in the event of an emergency situation with a potential for radioactive release.

5.4.1.6 National Weather Service

The National Weather Service will provide backup meteorological information upon request.

5.4.2 State Agencies

The planning for, and response to a radiological emergency at the GPUNC sites is the joint responsibility of GPU Nuclear and the state/county/local governmental agencies. GPU Nuclear is responsible for onsite emergency response. In order to fulfill this responsibility, GPU Nuclear relies on various offsite agencies, both governmental and private, to provide assistance beyond that available onsite. The Commonwealth of Pennsylvania and the state of New Jersey, through the various state, county and local agencies, are responsible for offsite emergency response. In order to fulfill this responsibility, the states rely on GPU Nuclear to provide necessary information on plant status and radiation releases. Recognizing the joint nature of their responsibilities, GPU Nuclear and the relevant governmental agencies have coordinated their emergency planning and have provided for adequate and redundant communication systems to coordinate their response during an emergency event.

The Pennsylvania Emergency Management Agency and the New Jersey State Police, Office of Emergency Management, are responsible to coordinate emergency services in the Commonwealth of PA and the State of New Jersey, respectively.

5.4.2.1 Three Mile Island

5.4.2.1.1 Pennsylvania Emergency Management Agency (PEMA)

Should a radiological emergency occur at the TMI site that requires the implementation of state, county, and local government radiological emergency response plans, the state agency through which the Governor will exercise coordination/control will be PEMA. However, as in all emergencies, the Governor retains directional control. The State role is further defined in the State Disaster Operations Plan - Annex E.

PEMA exercises authority over all non-licensee offsite organizations who are a part of the emergency response team in the TMI EPZs. This authority is based on the provisions of Section 7313 of the State of Pennsylvania Emergency Management Services Code 35 PA (C.S.A. Sections 7101-7707) also referred to as Pamphlet Law 1332. By law, PEMA is authorized to:

- provide emergency direction and control of Commonwealth of Pennsylvania and local disaster emergency operations.
- accept aid and coordinate assistance provided by Federal Agencies under provisions of the Federal Disaster Relief Act of 1974.

5.4.2.1.2 Department of Environmental Resources

The Department of Environmental Resources (DER), under the administration and technical direction of the Secretary, is responsible for gathering and evaluating technical information and for supplying such information and technical advice and recommendations to PEMA and the Pennsylvania Emergency Management Council.

Within the DER, the Bureau of Radiation Protection (BRP) has been delegated responsibility for radiological emergencies. Specific responsibilities assigned to the DER/BRP that are appropriate to radiological emergencies are defined in the State Plan.

To provide for emergency response capability, the BRP has made provisions for 24 hour per day interface with PEMA.

5.4.2.2 Oyster Creek

5.4.2.2.1 New Jersey Office of Emergency Management

The New Jersey Office of Emergency Management (OEM) has been assigned the responsibility for developing a statewide radiation emergency response plan. Annex B to the State of New Jersey Radiological Emergency Response Plan serves as a reference document incorporating the policy, the concept of operation, the rationale for chosen guidelines, and the relevant statutory documents. The OEM is the lead agency and coordinates the efforts of all state support agencies.

The Office of Emergency Management coordinates actions and operations involving public response and furnishes resources required to support decisions affecting exposure control.

This agency initiates communications with county and municipal authorities through the County Emergency Management Coordinator. Ocean County and each municipality has contingency plans indicating actions to be taken upon notification of an emergency condition by the Office of Emergency Management.

Primary contact with state authorities is through the New Jersey State Police Office of Emergency Management and the Headquarters Communications Bureau. This office is responsible for notifying other State and federal agencies and for providing assistance to state and local authorities in implementing emergency actions.

5.4.2.2.2 New Jersey Department of Environmental Protection, Bureau of Nuclear Engineering

The Bureau of Nuclear Engineering is responsible for responding to a radiation incident within state boundaries. They will assess the radiological

hazard and provide technical guidance and recommendations concerning the execution of protective actions for the general public.

5.4.3 County Agencies

5.4.3.1 Three Mile Island

Pamphlet Law 1332 states that "each political subdivision of this Commonwealth is directed and authorized to establish a local emergency management organization in accordance with the plan and program of the Pennsylvania Emergency Management Agency. Each local organization shall have responsibility for emergency management, response and recovery within the territorial limits of the political subdivision within which it is organized and, in addition, shall conduct such services outside of its jurisdictional limits as may be required under this part." Therefore, each County and Local Emergency Management Coordinator in the State is responsible for establishing an emergency management organization within their respective jurisdiction, developing plans and preparing for emergency operations.

With respect to the TMI Plume Exposure Pathway EPZ, Dauphin, York, Cumberland, Lancaster and Lebanon counties have prepared Radiological Emergency Response Plans that are coordinated with both the State's Disaster Operations Plan and the GPUNC Emergency Plan. Local government plans are either included directly within the respective County plan or are maintained as separate, but coordinated documents. The county Emergency Operations Centers are the location of the County dispatcher for police, fire, rescue and emergency medical services and is manned by dispatchers on a 24 hour basis. In the event of a PEMA communications breakdown, Dauphin County will act as the primary Communicator with PEMA, BRP, and the other four risk counties.

5.4.3.2 Oyster Creek

The Ocean County Office of Emergency Management (OEM) is the established emergency response organization that will serve each affected municipal OEM in a coordination and support capacity. It will assume the coordination of all intermunicipality communications and emergency operations. Upon receipt of notification of a radiological emergency at OCNGS which requires a County response, the Ocean County Emergency Operations Center (EOC) will be activated. The Ocean County EOC will serve as the focal point for County emergency operations and protective actions for the duration of the emergency. Personnel and resources of the County agencies employed in local emergency operations will be under the operational control of the Director of the Ocean County Board of Chosen Freeholders and will be coordinated by the Ocean County Emergency Management Coordinator in accordance with direction received from the State Office of Emergency Management.

6.0 EMERGENCY MEASURES

This Section describes the notifications and specific actions that will be taken for each class of emergency and is used as the basis for detailed Emergency Plan Implementing Procedures. Emergency measures all begin with (1) the recognition and declaration of an emergency class, (2) notification of the applicable agencies, and (3) mobilization of the appropriate portions of the emergency organization. Implementation of these measures are organized into emergency notification of offsite agencies, corrective actions, on-site protective actions, offsite protective actions, environmental assessment, offsite agency response and emergency public information.

6.1 Emergency Notification of Offsite Agencies

Parameters that establish emergency situations have been predetermined and specified as emergency action levels and included in procedures contained in the site Emergency Plan Implementing Documents. When conditions or criteria specified in one of these procedures are met or exceeded, an emergency classification (i.e., Unusual Event, Alert, Site Area Emergency or General Emergency) must be declared. The senior management person must classify and declare the emergency and ensure that all required notifications are made. Messages, developed in conjunction with State and local agencies, have been specified in Emergency Plan Implementing Procedures and will be used to provide information relative to the emergency class, (i.e., type and magnitude of any actual or potential release, affected populace and areas, and any recommendations to take protective actions). The PA Bureau of Radiation Protection and the NJ State Police provide verification of initial notification at TMI and OCNGS, respectively. For initial notification/escalation of Unusual Event, Alert and Site Area and General Emergencies at TMI, TMI will notify PEMA, all five risk counties directly and the NRC. For initial notification/escalation of an Unusual Event, Alert or a Site Area Emergency at OCNGS, OCNGS will notify NJ State Police (OEM) and the NRC. For General Emergencies at OCNGS, OCNGS notifies NJ State Police (OEM), Ocean County, Lacey and Ocean Townships directly and the NRC.

In addition to the initial notification and verification, communication channels will be maintained between the facility and offsite emergency response organizations to allow for any further dissemination and update of information concerning the emergency. The communications networks that have been established at each GPUNC site for notification requirements, information reporting, and decision making are presented as Figures 16 and 17.

Offsite emergency support from Federal, State and local agencies will be coordinated by the Commonwealth of PA and the State of NJ in accordance with their (state) Radiological Emergency Response Plans.

6.2 Corrective Actions

Detailed operating procedures are available to the operators for use during emergencies as well as normal operations. Specific Emergency Procedures are provided to assist the operators in placing the plant in a safe condition and taking the necessary supplemental corrective actions. In addition, operations personnel are trained in the operation of plant systems and their associated procedures and will be capable of taking appropriate corrective actions.

Selected staff personnel, including operations, radiological controls, and maintenance personnel, are trained and assigned to emergency teams. These teams will be able to respond as set forth in the

Emergency Plan Implementing Procedures in order to assess conditions and take any available corrective actions. Maintenance personnel will provide the necessary crafts expertise to affect repair and damage control functions.

Corrective actions will normally be planned events that are taken to ameliorate or terminate the emergency situation. Planned radioactive releases or corrective actions that may result in a radioactive release will be evaluated by the Emergency Director and/or Emergency Support Director and staff as far in advance of the event as possible. Such events and data pertaining to the release will be reported to the appropriate offsite emergency response organizations and agencies.

6.3 Onsite Protective Action

Protective actions are emergency measures taken during or after an emergency situation which are intended to minimize or eliminate the hazard to the health and safety of the general public and/or Site personnel. Such actions taken onsite are the responsibility of GPU Nuclear Corporation while those taken offsite fall under the jurisdiction of the State and other offsite response agencies.

6.3.1 Sheltering, Evacuation, Personnel Accountability

During an emergency, personnel may be required to temporarily relocate to prevent or minimize exposure to radiation and radioactive materials. The following subsections discuss the policies applying to sheltering, evacuation and personnel accountability during emergencies at the TMI and Oyster Creek sites.

6.3.1.1 Station Personnel

At the time an emergency is declared, an announcement is made on the site public address system to all personnel within the Owner Controlled area. The announcement will include the classifications of the event, a brief description of the event, and actions taken by site personnel. Shift personnel will proceed to their emergency assignments.

The primary protective measures for onsite personnel during an emergency is prompt evacuation from areas which are affected by significant radiation, contamination, airborne radioactivity or other personnel hazards. All persons onsite at the time an emergency is declared shall be notified by means of the plant page supplemented by designated personnel providing notification in areas that the page does not cover. Upon declaration of a Site Area Emergency or General Emergency and/or at the discretion of the Emergency Director, all essential personnel within the Protected Area will be individually accounted for at the ECC, TSC and OSC unless other factors (e.g., security events) advise against it. When directed, all non-essential personnel report to an Emergency Assembly Area. This process allows for personnel mustering, monitoring and evacuation as needed. This procedure provides the ability to initially account for all essential personnel and identify all missing persons within the Protected Area within 30 minutes. If by 60 minutes full accountability is not achieved, search and rescue should be initiated.

Non-essential personnel shall be evacuated from the site based upon:

- Declaration of a General Emergency, or
- The discretion of the ED, if emergency conditions warrant evacuation unless other factors (e.g., tornados, security events) advise against it. Consideration of protective actions (e.g., relocation, respiratory protection) for essential personnel should be done on the same basis.

Evacuation routes will be determined by the Emergency Director based on the prevailing radiological conditions. This evacuation will be accomplished using private vehicles to relocate to the Remote Assembly Areas.

Upon declaration of a General Emergency, or at the discretion of the Emergency Director, all non-essential personnel will be directed to proceed to their vehicles directly and to evacuate to the Remote Assembly Areas.

In support of these operations, a sweep of buildings, trailers, and other areas of the Owner Controlled area will commence to ensure that all persons have assembled and/or evacuated the site. Search and rescue operations will be implemented to locate any missing persons.

At the Remote Assembly Area, personnel and vehicles will be monitored for radioactive contamination. Individuals found to be contaminated will be decontaminated in accordance with applicable Radiological Controls Procedures. Vehicles found to be contaminated will be impounded until they can be decontaminated. Inclement weather will not affect the direction of the traffic flow, but may increase evacuation times.

All land areas within the exclusion area are owned by GPUNC and contamination will, thereby, be controlled. In addition, there are no areas for producing agricultural products within the exclusion area. In-plant contamination control will be in accordance with approved Radiological Controls procedures.

6.3.1.2 Emergency Personnel Exposure

Emergency personnel, including those involved in removal of injured persons, undertaking corrective actions, performing assessment actions, providing first aid, performing personnel decontamination, providing ambulance service, and providing medical treatment services, will have their dose minimized. This is accomplished through normal Radiological Controls Practices onsite. When offsite emergency personnel are called to respond to TMI/Oyster Creek, qualified Radiological Controls technicians are provided to support these teams. For example, a Radiological Controls technician is assigned to the offsite fire teams to monitor and control radiation exposures and evaluate radiological hazards.

Emergency measures may warrant the acceptance of greater than normal radiation exposure (doses). Lifesaving, measures to prevent substantial radiation exposure to the population or preservation of vital equipment may be sufficient cause for greater than normal exposures. The following are the exposure guidelines for these emergency activities:

Life saving action - No pre-established limit

Corrective action - 10 Rem total whole body dose (TEDE), 30 Rem to the lenses of the eye, or 100 Rem total organ dose to any organ.

The Emergency Director is the designated individual who can authorize emergency workers to receive doses as defined in excess of 10 CFR 20 limits. These workers must be volunteers and will be required to closely adhere to the controls specified in applicable procedures. In authorizing onsite volunteers to receive radiation exposure in the course of carrying out lifesaving activities, the Emergency Director shall balance the risks from such exposures against the benefits to be received from the lifesaving activities. Risks are determined and decisions are made to expedite lifesaving activities based upon advance radiation surveys done at the affected areas to determine stay times, shielding requirements, or the possibility of dispatching a "scouting" team to assess actual conditions. Measures will be utilized to aid in exposure reduction and the Emergency Director, in consideration of advice from the Radiological Assessment Coordinator, shall assure that all possible measurements are taken to minimize other exposures (such as internal exposures) during the activities.

All personnel who are members of the emergency response teams and who have emergency duties onsite are issued dosimetry including self-reading dosimeters. Additional provisions have been made for dosimetry issue at the site entrance gates or other locations, if required. This dosimetry will be periodically read and recorded in accordance with approved site Radiological Control Procedures.

6.3.2 First Aid and Decontamination

- First Aid

Emergency first aid and medical treatment will be given to injured personnel who may or may not be contaminated. Shift personnel, trained in first aid, will be available onsite on a 24-hour per day basis and will assist contaminated personnel at the scene of the accident. Provisions have been made, through agreements, to ensure contaminated and injured personnel will receive specialized medical treatment, if necessary. Local hospitals in the vicinity of TMI and Oyster Creek sites have agreed to accept contaminated patients for emergency medical and surgical treatment and/or observation.

A comprehensive program of radiological control for injured/contaminated personnel has been developed and will be instituted when necessary during an emergency. The primary emphasis will be to initially address traumatic or life-threatening injuries since radiation injuries may not be immediately life threatening.

Detailed instructions for treatment and transportation of contaminated and injured personnel are specified in the Implementing Document.

Decontamination

Personnel and equipment decontamination will be initially accomplished at the Radiological Controls Access Control Point where specialized equipment and supplies are available. Procedures are written with specific details for decontamination. For personnel within the Protected Area, emergency situations which require decontamination will be handled in accordance with these procedures and the Emergency Plan Implementing Document.

All personnel leaving a Radiologically Controlled Area will be monitored for contamination. Any individual found to have contamination levels in excess of 100 net cpm (above background as measured by a pancake probe at 1/2 inch) at any of the sites will be considered contaminated.

Personnel found to be contaminated will undergo decontamination by radiological controls personnel (or other designated personnel as specified in Radiological Controls or Emergency Plan Implementing Procedures). Measures will be taken to prevent the spread of contamination. Such measures may include isolating affected areas, placing contaminated personnel in "clean" protective clothing before moving, and decontaminating affected personnel, their clothing and equipment prior to release, in accordance with applicable station Radiological Controls Procedures.

In the event that a release of contaminants has occurred or is occurring, in-plant potable water systems will be secured to prevent possible contamination. If food and water supplies are brought in for emergency personnel who remain on-site these supplies will be packaged in sealed containers and will be monitored by Radiological Controls personnel (using standard Rad Con practices and procedures) prior to use or consumption and on a normal routine basis. Any food or water supplies discovered to be contaminated will immediately be disposed of as waste and will not be used.

Upon receipt of information that the emergency has entered recovery phase, in-plant facilities and areas will be surveyed, sampled, and cleared for use, or controlled as necessary, in accordance with applicable Radiological Controls practices.

If it becomes necessary to declare an onsite evacuation, personnel from outside the Protected Area will be directed to proceed to the Remote Assembly Area. Upon arrival at the Remote Assembly Area, personnel will be monitored for contamination. If anyone is found to be contaminated, showers, sinks and decontaminating supplies are available in close proximity to each plant site. Equipment for decontamination personnel will be stored in Emergency Supply Lockers. Portable survey instruments are available and routinely calibrated for use in decontamination operations. All skin contamination problems will be treated using accepted Radiological Controls practices.

For contaminated personnel inside the Protected Area, the preferred decontamination facilities will be those onsite at the TMI Radiological Controls

Laboratory and OCNGS Monitor and Control Station if accessible, otherwise offsite facilities will be used.

6.3.3 Medical Transportation

Agreements have been made with local medical support organizations to provide ambulance services to the GPUNC sites. Ambulance personnel will be certified in accordance with State regulations. GPU Nuclear will offer training to the squad members in the treatment and transportation of contaminated injured individuals. GPU Nuclear will provide radiological control technicians if available to assist the squads enroute to the hospital. Ambulance service for the facility is provided by GPU Nuclear or local first aid squads.

When affected personnel must be transported, measures will be taken to prevent the spread of contamination. Such measures will include placing affected personnel in "clean" protective clothing or wrapping in blankets. The Emergency Director will insure that the organizations who will provide the transportation and treatment are alerted.

Detailed instructions for treatment and transportation of contaminated and injured individuals are specified in appropriate procedures.

6.3.4 Medical Treatment

Arrangements for hospital and medical services for injured or contaminated/overexposed personnel are provided for by letters of agreement.

The first level of treatment can be given on-site. On-site emergency medical services will be rendered by qualified site personnel. If the severity of the injury requires more extensive or prolonged treatment, the patient will be transported for the second level of assistance. For conventional injuries (that is, non-radiation injuries), the patient will be transported to any of the local hospitals.

Arrangements for hospital and medical services for injured and/or contaminated/overexposed personnel are provided by Harrisburg Hospital, Hershey Medical Center, PA, and Community Medical Center, South Ocean County Hospital, NJ, etc. These hospitals have agreed to accept contaminated patients for emergency medical and surgical treatment or observation. Detailed plans and procedures are in place for decontamination and treatment of contaminated patients.

6.4 Environmental Assessment

6.4.1 Radiological Assessment and Offsite Monitoring

Prior to the activation of the entire Initial Response Organization, offsite radiological/environmental survey teams may be dispatched. These teams will consist of one to two persons per team, trained in the use of portable radiation monitoring equipment. When dispatched, the teams will pick up portable radios, and emergency kits containing portable monitoring equipment. Emergency kit inventory lists are included as Tables [illegible] and [illegible]. After an operational check of the equipment, including a radio operability check, they will proceed in an emergency vehicle to their first monitoring location. They will be controlled by

the Radiological Assessment Coordinator and will report directly to him. The sites have the capability to dispatch up to two radiation monitoring teams within one-half hour of the emergency declaration, if necessary.

Procedures are in place which enable monitoring teams to detect airborne radioiodine and particulates under field conditions in the presence of noble gases and background radiation.

For gaseous (TMI-1 and OCNGS) and particulate (TMI-2) releases, the first step in the initial assessment process is to estimate the radioactive source terms in microcuries per second. To do this, the radiation monitoring system readings for each monitored effluent release path are converted to a source term by applying the appropriate ventilation flow rates, meter conversion factors, containment building design leak rate, etc. using a computer program developed by GPUNC known as the RAC Model. The RAC Model prompts the user for specific entries, e.g., meter readings and release type, to estimate the radiological source terms by isotope. This model, using real time meteorological data directly from the on-site monitoring system, performs off-site dose calculations of the total whole body dose (TEDE), thyroid dose (CDE) and bone dose commitment (for TMI-2 only), as appropriate, based on the expected or a default duration.

These integrated doses are examined in the context of the EPA PAGs and an estimate of time to reach the PAGs, assuming constant release rate and source terms. After the projections are made, the radiation monitoring teams can be directed to the location of interest to take readings and confirm the projection. Radiation Monitoring team data lend credence to the dose projection process, better quantify ground receptor dose rates and alert plant personnel of any unmonitored release pathways or potential problems in the dose projection process. Dose calculations and projections are relayed to the BRP in PA and BNE in NJ.

If the instrumentation used for radiological assessment is off-scale or inoperative, the Radiological Assessment Coordinator may utilize in-plant sample data from the affected ventilation pathway. In lieu of instrumentation or in-plant sample data, the RAC must utilize contingency calculations. The contingency calculations are based on plant conditions. Concurrently, radiological/environmental survey teams are sent to these locations of interest to take actual field measurements in order to verify the projections and to correlate projected versus actual results. These detailed calculational techniques are included in the Emergency Dose Calculation Manual (EDCM) and incorporated as part of the RAC Model.

For liquid releases, the radionuclide concentration at any downstream location is determined by taking the radiation monitoring system reading on the plant liquid effluent monitor and applying the effluent flow rate, a meter conversion factor and volumetric flow rate of the receiving water. Downstream users will be notified to curtail intake if the projected concentration is above the level specified in the procedures.

When the Environmental Assessment Coordinator (EAC) is ready (typically within one hour of the declaration of an Alert or higher classification), the responsibility for offsite radiological and environmental monitoring will be transferred to the Environmental Assessment Coordinator. (NOTE: The Radiological Assessment Coordinator will maintain control of the onsite radiological/environmental survey team(s) and onsite radiological controls assessment.

The EAC will assume offsite radiological and environmental monitoring but the RAC will retain the duty of performing dose projections. At TMI, the RAC will independently review dose projections from the computer based automated dose assessment program. The EAC at Oyster Creek will review these dose projections independently. In addition, BRP/BNE liasons in the EOF make independent assessments and maintain contact with BRP/BNE headquarters.

Two field monitoring teams can be dispatched at each site during an emergency situation. This can be backed-up with two additional teams, should it become necessary. The Environmental Assessment Command Center generally communicates with the field teams using two-way radios. Field data can be relayed to both the ECC and Emergency Operations Facility using separate dedicated phone lines from the Environmental Assessment Command Center. Verification of the model projections will be accomplished by comparisons with field monitoring team results.

The Environmental Assessment Coordinator and his staff, located at the EACC, have the following capabilities:

- Obtain additional monitoring teams from the other GPUN site and corporate headquarters.
- Obtain and evaluate meteorological forecast information and evaluate effects of atmospheric releases.
- Obtain additional expertise in the areas of meteorology and dose projections from the unaffected site and corporate personnel.

Typical environmental/radiological monitoring equipment is listed in Table 10.

6.5 Offsite Protective Actions

6.5.1 General Public

The Emergency Support Director/Emergency Director shall be prepared to provide protective action recommendations, as appropriate. Initially, the Emergency Director is responsible to develop recommendations, however, this function is assumed by the Emergency Support Director in coordination with the Emergency Director after the EOF is activated. Recommendations are developed when it is apparent that a release is possible or underway and dose projections indicate protective actions may be required for the public and within approximately 15 minutes of the declaration of a General Emergency.

The responsibility for actions to protect persons in offsite areas rests with the State and is described in detail in the State Emergency Plan and implemented in conjunction with the county emergency plans.

The State Departments of Environmental Resources/Protection, Bureaus of Radiation Protection and Nuclear Engineering are the specific agencies responsible for evaluating information from the GPUNC staff and all other sources and recommending to PEMA/NJ OEM that protective actions be taken. The BRP/BNE has sheltering and evacuation as

protective action options. The most appropriate protective action for a particular situation will depend on the magnitude of the release, duration of the release, wind speed, wind direction, time of day and transportation constraints. In the case of a General Emergency, circumstances may indicate the immediate need to initiate some precautionary protective action. This judgment is the responsibility of the BRP/BNE and should be based on an evaluation of the current plant conditions, dose projections relative to the PAG's and expected subsequent plant operations/evaluations.

GPU Nuclear, through the Emergency Director (Emergency Support Director when the EOF is activated), shall remain ready throughout an emergency to provide Protective Action Recommendations to State officials. General Protective Action Recommendation methodology is shown as Figure 18.

Off-site it is the responsibility of the State Department of Agriculture, in conjunction with the Departments of Environmental Resources/Protection and Health, to issue guidance and coordinate actions to control contaminated agricultural products.

The means to warn or advise involved persons is a responsibility of the risk county. The risk county, in coordination with the State, is also responsible for the preparation and dissemination of information material for the general public on protective actions including necessary information (evacuation routes, maps, etc.) for the implementation of protective measures in the Plume Exposure Pathway.

At Oyster Creek, the principal off-site local coordinating agency for providing response to radiological emergencies in the vicinity of OCNGS is the Ocean County Office of Emergency Management. The population and land area within the Plume Exposure Pathway EPZ is wholly within Ocean County. Upon notification of a situation which may require protective actions by the offsite population, the Ocean County Emergency Management Coordinator will initiate appropriate actions in accordance with the Ocean County Radiological Emergency Response Plan and in coordination with the New Jersey OEM.

The Ocean County Office of Emergency Management and NJ OEM have prepared detailed plans for implementing protective actions including:

1. Prompt notification of the population within a 10-mile radius of OCNGS.
2. Transmitting specific instructions to potentially affected populations.
3. Providing assistance for evacuation of all specific segments of the population within the 10-mile Emergency Planning Zone.
4. Providing reception and mass care centers for evacuated individuals.

The population within the 10-mile Emergency Planning Zone will be provided, on a periodic basis, information describing the methods by which they will be notified of an emergency and specific instructions that should be followed upon receipt of such notification.

6.6 Offsite Agencies Response

6.6.1 Parent County

- The dispatcher at the Parent County shall notify the County Emergency Management Coordinator or his designated alternate.
- The County Office of Emergency Management shall notify county and municipal personnel, as appropriate.
- Dauphin County (TMI only) - Act as central communications agency in the event of a PEMA/TMI communication breakdown.

6.6.2 State Emergency Management Agency (PEMA and NJ State Police OEM)

- Upon receiving notification of an emergency from the site, the Duty Officer at the State Emergency Management Agency shall immediately notify the State Bureau of Radiation/Nuclear Engineering.
- The State Emergency Management Agency shall, notify the following personnel, organizations, and agencies as appropriate in accordance with their standard operating procedures:

  a. Parent County
  b. Other affected County Emergency Management Agencies
  c. Other affected states
  d. Selected State agencies
  e. Selected Federal agencies

6.6.3 Bureau of Radiation Protection/Nuclear Engineering

The person at the Bureau of Radiation Protection/Nuclear Engineering (i.e., Incident Manager) who receives the notification from the State Emergency Management Agency shall:

- Call the site Emergency Control Center to:
  - Verify actual origin of the emergency message.
  - Determine the classification of the emergency.
  - Obtain and assess information and data pertaining to the emergency.
- Initiate activation of the BRP/BNE emergency response organization, if appropriate.
- Advise the State EMA Duty Officer or Operations Officer of the BRP/BNE initial assessment of the emergency.
- Notify selected Federal agencies, as appropriate.

6.7 Prompt Notification System

Prompt notification and instructions to the population at risk are accomplished by the OEM-NJ/PEMA-PA and the affected county emergency management organizations. Prompt notification is the vital first link in this process. Sirens are used for prompt notification throughout the Plume Exposure Pathway EPZs.

After state authorities have been notified, the Prompt Notification (siren) System and the Emergency Broadcast System (EBS) are the primary means of notifying the population within the Plume Exposure Pathway EPZ. The risk counties can activate the sirens located in their portion of the county that falls within the same Plume Exposure Pathway EPZ. This signal is a three to five minute steady tone which alerts the population to tune their radio or television to the local EBS station.

The OEM-NJ/PEMA-PA and the risk counties have the capability to broadcast emergency information messages advising the population of what actions should be taken, if any. These EBS messages will be repeated at frequent intervals to ensure proper dissemination. In addition to the Prompt Notification System and the EBS message, state and/or municipal police and fire departments will act to supplement emergency notification through the use of route alerting procedures, as necessary.

GPUNC, in coordination with the OEM-NJ/PEMA-PA and risk counties, annually disseminates educational information concerning radiation, protective measures and other pertinent emergency information to all residents within TMI and Oyster Creek Plume Exposure Pathway EPZ's and to transient locations such as motels, hotels and parks.

The Three Mile Island and Oyster Creek Prompt Notification Systems meet the guidelines of Appendix 3 to NUREG-0654-FEMA-Rep. 1 Rev-1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants as identified in each site specific siren acoustical evaluation.

The Prompt Notification System is comprised of 79 sirens distributed throughout the 5 risk counties that fall within the TMI Plume Exposure EPZ and 42 sirens throughout portions of Ocean County that fall within the OCNGS Plume Exposure Pathway EPZ. A complete description of the siren system to include siren ratings, siren coverage, and location is located with the Emergency Preparedness Department.

The Prompt Notification System will be activated by the TMI Risk County Emergency Operations Centers and by the Ocean County Sheriff's department upon receipt of notification of an emergency situation which would require the dissemination of pertinent information to the public. The emergency situation that could require the sounding of the warning systems may be a natural catastrophe, industrial accident, or fixed nuclear facility emergency which may require protective action. The siren sounding is intended as an alerting mechanism to have the public monitor a designated Emergency Broadcast System radio station for emergency information. If an incident at the plant warrants the activation of the Prompt Notification System, the initial notification will be made to PEMA/NJ OEM. PEMA/NJ OEM will in turn notify the BRP/BNE and the risk county(ies). BRP/BNE will assess the severity of the emergency and notify the PEMA/NJ OEM of any protective actions required. If the incident is severe enough to warrant activation of the sirens within the Plume Exposure EPZ, the respective county(ies) will activate the siren system to sound a steady 3-5 minute tone. To actuate the system, signals are generated at each county siren control panel.

These signals are transmitted to the individual sirens where they are received and translated causing the siren to sound. The system deactivates in a manner analogous to that of the activation signals.

Protection and selectivity is afforded to the system through an individual carrier frequency and/or series of dedicated activation signals for each county. Varying combinations of activation signals will minimize the probability of inadvertent siren activations and permit the sounding of several different signals.

The preventive maintenance program for the system insures a high degree of reliability. The sirens are inspected and tested in accordance with NUREG 0654 guidance on a continuous schedule.

The TMI respective counties have test programs which consist of actual siren soundings. In Ocean County, sirens are sounded quarterly for short durations and annually for three minutes by GPU. GPUNC retains system ownership and maintenance responsibility.

6.8 Evacuation Time Estimates

The TMI and OCNGS Evacuation Time Estimates meet the guidelines of Appendix 4 of NUREG-0654-FEMA-Rep. 1 Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants. The analyses used various assumptions in estimating populations, automobile occupancy factors and roadway capacities. The Evacuation Time Estimates take into consideration the population within the Plume Exposure Pathway (EPZs).

Population information is contained in the site updated FSAR. However the complete set of information for evacuation planning is contained in the site's Evacuation Time Estimate Study.

The complete TMI and OCNGS Evacuation Time Estimate Reports are maintained on file by the Site Emergency Preparedness departments.

6.9 Emergency Public Information

Communications is assigned primary responsibility for providing information promptly and accurately to the media, public officials, employees and members of the public through news releases, media briefings and public official notification.

To achieve this goal, GPUNC makes the following commitment:

- Implementing guidelines establish a communications organization and enumerate responsibilities for performing organization functions. Statements are prepared by qualified communications professionals working closely with emergency response team members. The guidelines allow for quick dissemination to the news media as well as opportunities for media representatives to ask questions and gain further details on plant status during an emergency.

- The Emergency Public Information Implementing Document(s) provide for quick notification and update of emergency information to local, county and State public officials.

- Media Centers/Joint Information Centers have been established for Oyster Creek and TMI. These centers are equipped with dedicated phone lines, commmercial phone lines, telecopiers, radios, television monitors and necessary charts and maps to adequately provide media support. The Media Centers/Joint Information Centers will be the focal point for the Utility, State and Federal Public Information Officials to interact with the media and each other. As a minimum these centers will be activated at the Alert or higher emergency classification.

- On an annual basis, provide the news media with information that acquaints them with the dissemination of news information and the points of contact during times of plant emergencies.

- *Annually emergency-related information containing educational information on radiation, contact points for additional information and protective measures is disseminated to all residents, business establishments, hotels, motels and parks within the Plume Exposure Pathway EPZ. In addition, a means is provided for individuals requiring special assistance to be identified and accommodated.

- Communications (TMI) acts as the focal point for Rumor Control. Plant personnel have been instructed to refer all public inquiries related to emergency status and actions to the Plant Communications Section. This rumor control center augments the state center. Rumor Control at Oyster Creek is handled by the NJ State Police, Office of Emergency Management.

- The company will designate a chief spokesperson with support from technical personnel to facilitate the flow of accurate and timely information to the media and ultimately to the public.

- Members of the Public Information emergency response teams from Oyster Creek and Three Mile Island will be trained annually on their roles in responding to an emergency at the station.

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7.0 EMERGENCY RESPONSE FACILITIES AND EQUIPMENT

Emergency response facilities and equipment described in this section are provided to ensure the capability for prompt, efficient assessment and control of situations over the entire spectrum of probable and postulated emergency conditions. Personnel are assigned to staff the emergency response facilities on a rotating duty roster schedule to assure a proper and timely response, (not applicable to TMI).

This section describes the equipment and facilities that are utilized to:

1. Assess the extent of accident hazards.
2. Mobilize the resources required to mitigate the consequences of an accident.
3. Provide protection to plant personnel.
4. Support the accident mitigation process.
5. Provide immediate care for injured personnel.
6. Effect damage control.
7. Provide information concerning potential environmental impact offsite to appropriate governmental agencies.
8. Provide information to the news media and the general public.

Many of the GPU Nuclear facilities and much of the equipment are normally used for routine plant operations. Other items are reserved for use only on an "as needed" basis.

Site specific details pertaining to onsite and offsite emergency response facilities as well as the TMI and OCNGS related county, state and federal Emergency Operations Centers are included in Tables 10 and 11.

7.1 GPUN Onsite Emergency Response Facilities

7.1.1 Emergency Control Center (ECC)

TMI and OCNGS each have one Emergency Control Center. The Emergency Control Centers are the primary locations for the initial assessment and coordination of corrective actions for all emergency conditions. The ECCs are located in the Control Room and Shift Supervisor's Office areas. These Centers are equipped with meteorological, radiological and plant system parameter readouts integrated with assessment aids for all critical plants systems and provide access to all station communication systems.

Command and control of all initial emergency response activities originate from the ECC. When the entire emergency response organization is activated, the Emergency Director retains command and control of all onsite activities from the ECC (TMI)/TSC (OCNGS) and responsibility for offsite emergency management is transferred to the Emergency Support Director at the Emergency Operations Facility (EOF). The ECC is activated for all emergency levels.

7.1.2 Technical Support Center (TSC)

TMI and OCNGS each have one Technical Support Center. The Technical Support Centers accommodate engineering personnel that provide in-depth diagnostic and corrective engineering assistance to the Emergency Director command and control functions. The TSC's are activated during an Alert, Site Area Emergency, General Emergency or when directed by the Emergency Director. Records and drawings which describe conditions and layout of structures, systems, and components are contained in filing cabinets inside the TSC's.

7.1.3 Operations Support Center (OSC)

TMI and OCNGS each have one Operations Support Center. The Operations Support Centers serve as muster areas for shift personnel and as locations to organize and dispatch emergency response teams (i.e., onsite radiological monitoring, fire brigade, rescue operations, damage control, and maintenance). Emergency equipment and supplies, including portable radios, portable lighting, protective clothing, and respirators, are maintained in emergency lockers located in the Operations Support Centers. Additional emergency equipment, such as gamma and air monitoring equipment can be promptly available to the OSC if needed. The OSCs are activated during an Alert, Site Area Emergency, General Emergency or when directed by the Emergency Director.

7.2 GPUN Offsite Emergency Response Facility

7.2.1 Emergency Operations Facility (EOF)

The Emergency Operations Facilities serve as the primary locations for management of the Corporation's overall emergency response. These facilities are equipped for and staffed by the Emergency Support Organization to coordinate emergency response with offsite support agencies and assessment to the environmental impact of the emergency.

When activated, the EOF participates in accident assessment and transmits appropriate data and recommended protective actions to Federal, State and local agencies. The facility is equipped with data transmission links with the plant, status boards and dedicated communication links with the ECC, TSC, OSC, NRC, State and County emergency agencies, and the State Bureau of Radiation Protection, PA/Bureau of Nuclear Engineering, NJ and the JIC. Drawings which describe the as-built conditions and layout of the structures, systems, and components and applicable operating procedures are available of the plants.

7.3 County, State and Federal Emergency Operations Centers

7.3.1 County Emergency Operations Centers

Emergencies at the TMI and OCNGS sites could impact the risk counties. Each of these risk counties, therefore, has an Emergency Operations Center (EOC) that meets or exceeds the maximum federal criteria for sufficient space, communications, warning systems, self sufficiency in supplies and accommodations. All counties maintain a full time employee to coordinate emergency planning.

7.3.2 State Emergency Operations Center

The State Emergency Operations Center contains provisions and accommodations to support State emergency operations. A communications system ties all area and county emergency operations centers into this center. During an emergency, representatives from the selected State agencies assemble in the State EOC to manage and coordinate response activities.

7.3.3 Federal Response Center (FRC)

Federal Response Center - A center will be established by FEMA at a location identified in conjunction with the State that serves as a focal point for Federal response team interactions with the State. The FRC will more than likely be established at PEMA headquarters in Harrisburg, Pennsylvania. Miller Airpark in Berkeley Township, N.J., is a typical location for this center for incidents at the OCNGS.

7.4 Emergency Communications Systems

The emergency communications systems are designed to ensure the reliable, timely flow of information between all parties having an emergency response role. Reliability is provided through (1) redundancy, (2) alternate communications methods, (3) dedicated communication equipment, and (4) routine use of many of the systems which reduces the probability of undetected system failures. Timeliness of information flow is achieved by (1) prompt notification, (2) predefined lines of communication, (3) predefined emergency action levels, and (4) predefined levels of authority and responsibility, and (5) diversity.

The Control Room is the primary source of plant information. Information originating in the Control Room can be classified into two major categories: operational data and radiological data. The emergency communications networks are formulated around this basic concept and designed to channel information directly to the key parties having closely related functions. By providing well-defined and dedicated communication links, efficient and effective accident management can be achieved albeit key personnel operate from physically separated facilities. The following circuits have been installed at TMI and OCNGS sites. The specific details of these circuits and description of additional emergency communications available at each site are also included in Tables 12A and 12B.

7.4.1 Emergency Communications

7.4.1.1 NRC Emergency Notification System (ENS)

The NRC Emergency Notification System lines are part of the dedicated telephone system that connects Emergency Response Facilities at the TMI and OCNGS sites with NRC Operations Center. The ENS is used primarily to report emergencies. Commercial telephone lines are used as backup communications. Transmittal of operational data to the NRC should be accomplished using this circuit. The Emergency Director/Emergency Support Director and the Technical Support Center Coordinator will appoint a communicator from the appropriate functional group to act as an ENS line communicator.

7.4.1.2 Health Physics Network (HPN)

In the event of a radiological emergency, the HPN will be activated. These lines are circuits used to relay information to the NRC Regional and Headquarters offices. The HPN can be used for NRC notification when the ENS is out of service. This system is dedicated to transmission of radiological information to the NRC.

7.4.1.3 Bell System

The TMI and Oyster Creek sites are served by the Pennsylvania and New Jersey Bell systems, respectively. These systems are expected to function during emergencies as they do during normal plant operations.

7.4.1.4 Microwave System

The TMI and Oyster Creek sites maintain telephone communication throughout the entire GPU system using a company-owned microwave and fiber optics links (i.e., tie-lines) system. Access to this system is through the plant telephone system which bypasses potentially congested public-use circuits.

7.4.1.5 Automatic Dialing Equipment

Automatic dialing equipment provides automatic dialing of pre-selected telephone numbers, reducing callout/notification time and dialing errors.

7.4.1.6 Maintenance and Instrumentation Telephone System

The Maintenance and Instrumentation telephone system provides maintenance personnel with a direct communications circuit to the Control Room from strategic locations throughout the plant.

- Three Mile Island

  The Maintenance and Instrumentation Phone System at TMI consists of three essentially independent circuits: the Nuclear Subsystem, the Turbine Subsystem, and the Fuel Handling Subsystem. These circuits are designed for use between two or more locations during operations when direct communications between operators and/or maintenance personnel is required. Handsets and headsets are provided. The system is operable when headsets and/or handsets are plugged into the various stations of the three subsystems.

- Oyster Creek

  The Maintenance and Instrument Phone System is a one party-line maintenance circuit with jacks in the Control Room and work areas throughout the plant. Communication must be established through the public-address system since the sound-powered phone system has no signaling capability.

7.4.1.7 Notification Lines

The Notification Lines are dedicated for use by the affected unit ECC, EOF and TSC (OCNGS) to make official notifications (i.e., initial notification, reclassification, close-out of the event).

7.4.1.8 BRP/BNE Lines

The BRP/BNE lines are dedicated for use by the RAC of the affected unit to communicate plant status and radiological information to the BRP/BNE. Internal plant radiological assessment and discussions leading to the development of protective action recommendations should not occur over this circuit.

7.4.1.9 Emergency Director's Lines

The Emergency Director's lines are dedicated to communications and consultation between the Emergency Director and Emergency Support Director and are intended for their exclusive use.

7.4.1.10 Environmental Assessment Lines

The Environmental Assessment lines are the primary communication link between the RAC and Group Leader, R&EC to communicate source term, in-plant radiological conditions and dose projections. They are also the primary circuit for discussions and development of protective action recommendations.

7.4.1.11 Operations Lines

The Operations Lines are dedicated for use by the Emergency Director/Operations Coordinator to direct in-plant response and to receive status reports from the OSC.

7.4.1.12 Radiological Lines

The Radiological Lines are dedicated for use by the RAC to communicate in-plant radiological conditions and concerns to all interested parties. It may also function as a backup communication link for the EACC and in-plant Rad Con lines.

7.4.1.13 Technical Functions Lines

The Technical Functions Lines are dedicated for primary use in a conference mode for technical engineering discussions between the TSC and PTFC with monitoring and input, as appropriate, from the EOF and ECC.

7.4.1.14 Chemistry Lines

The Chemistry lines are used to coordinate plant chemistry information between plant chemistry personnel and chemistry support personel at the PTFC.

7.4.1.15 Emergency Management Lines

The Emergency Management Lines are dedicated for use by the ED and ESD for communication with all other emergency response facilities.

7.4.1.16 Additional Three Mile Island Circuits

❶ In-Plant Radiological Controls Line

The TMI In-Plant Radiological Controls Line is dedicated to the exclusive use of the RAC and RCC to discuss in-plant Radiological Controls and to coordinate the dispatch of Radiological Controls personnel for in-plant and survey team monitoring operations.

❷ NRC Intra-Communications Line

The NRC Intra-Communications Line is dedicated to the exclusive use of the site NRC staff/Director - Site Operations for communication with NRC personnel at all key emergency response facilities.

❸ TMI - B&W Lines

The TMI - B&W lines are dedicated to communication and consultation with Babcock and Wilcox in Lynchburg, VA to discuss NSSS component response and recovery. These telephones are extensions of the B&W telephone system and are located in the TMI Shift Supervisor's Office, and TMI TSC.

❹ Pennsylvania Emergency Management Agency Radio System (PEMARS).

The Control Room is equipped with a radio capable of transmitting and receiving on the Pennsylvania Emergency Management Agency Radio System Frequency. The radio provides an additional notification pathway between TMI, PEMA, and the five risk counties.

7.4.1.17 Additional Oyster Creek Circuits

❶ Joint Information Center Line

The Joint Information Center Line is a dedicated telephone system established to provide continuous, reliable communications between the Media Affairs Representative at the plant site and the media personnel at the Joint Information Center.

- Plant Status Update Line

The Plant Status Update Line is a dedicated telephone system established to provide periodic plant status update and key plant parameters to management personnel involved in emergency assessment and response. This circuit is a back-up link for the planned automated data transmission capability. It is used primarily to pass data by telefax equipment with voice back-up.

- Station Security/Accountability Line

The Station Security/Accountability Line is a dedicated telephone system established to permit reliable, direct communications between the Site Protection Shift Supervisor, Site Protection Officers at the security barriers, and the Plant Emergency Assembly Area Coordinator to facilitate personnel accountability and the Emergency Operations Facility. This system can be used by the Operations Support Center Coordinator to call for personnel locted at the Assembly Area to assist in accident response.

- State Emergency Director's Hot Line

The State Emergency Director's Hot Line provides automatic communication between the Emergency Director in the ECC or the Emergency Support Director in the EOF to the State Emergency Director at the state EOC.

- New Jersey State Police Notification and Verification Lines

The New Jersey State Police Notification and Verification Lines are two separate circuits that connect the Emergency Director/Emergency Support Director or his designee in the ECC, the Technical Support Center and the Emergency Operations Facility with the State Police Communicator at the Division Headquarters Communications Center, West Trenton, N.J. The purpose of these lines is to provide a reliable means of prompt notification and verification of an emergency at OCNGS.

- Ocean County Notification and Verification Lines

The Ocean County Notification and Verification Lines are separate and dedicated automatic ring circuits that directly connect the Emergency Director or his designee in the Control Room; the Technical Support Center and the Emergency Operations Facility with the Sheriff's representatives in the Ocean County Communications Center, Toms River, N.J. The purpose of these lines is to provide a reliable means of prompt notification and verification.

7.4.1.18 Telephone System Emergency Power Supplies

- Three Mile Island

The TMI communications equipment uses a variety of power sources, power supply back ups, and redundant signal routing which makes a complete loss of communications with off site agencies an unlikely event.

ML-8000 emergency telephones and TMI Microwave equipment are connected to TMI ES vital power with diesel generator back up.

The TMI telephone equipment is a DC powered system. Batteries recieve power through chargers which are normally fed from an AC power source. Should these sources fail, the batteries can supply power to the system for a minimum of eight hours.

USNRC telephones on the FTS 2000 system and select telephones are powered by telephone company equipment at an off site location.

- Oyster Creek

OCNGS has direct offsite AT&T/NJ Bell lines in each ERF and are supplied by phone company backup power. In plant lines in each ERF are supported by the ROLM switch power supplies as follows: 12.5KV offsite power, 19.9KV backup offsite power and backup battery power for 8 hours. In plant emergency circuits are also on the ROLM switch and have an additional 8 hour battery backup. Offsite emergency circuits are carried by both AT&T/NJ Bell and Company owned microwave. The AT&T/NJ Bell circuits have the same backup power as other such circuits. The company microwave has 8 hour battery backup at each connecting node. No emergency diesel generator power is available for the onsite circuits. Portable gasoline generators are available for the microwave nodes.

7.4.1.19 Radio Communications

Radio communication equipment used during normal plant operations will be used in an emergency to communicate with mobile units and to provide backup to the telephone system.

- Three Mile Island

At TMI, radio capabilities include the following frequencies:

- TMI Operations Frequencies (e.g. Ops-1, Ops-2, Ops-3 and Ops-4)
- TMI Security Frequency
- Environmental and Radiological System Frequency
- Maintenance and Rad Con Frequency
- Met-Ed System (Lebanon Frequency)
- PEMARS (Pennsylvania Emergency Management Agency)

⑦ Local Law Enforcement Agency Frequency

Radio transmission capabilities are follows:

① GPU Security Frequency transmits from: a) Central Alarm Station, b) Secondary Alarm Station, c) TMI OSC, d) TMI ECC, e) TSC, f) Portables.

② TMI Operations Frequencies transmit from: a) TMI ECC, b) TSC, c) TMI-OSC, d) Central Alarm Station, e) Secondary Alarm Station and f) Portables.

③ Environmental and Radiological System Frequency transmits from: a) TMI ECC, b) TMI OSC, c) TSC, d) EACC, e) AEOF, f) Central Alarm Station, g) Secondary Alarm Station and h) mobile vehicles.

④ Maintenance and Rad Con Frequency transmits from: a) TMI ECC, b) Rad Con Office, c) Portable Units, d) TSC, e) TMI OSC, f) Central Alarm Station and g) Secondary Alarm Station.

⑤ Met-Ed Frequency transmits from: a) TMI ECC, b) Central Alarm Station, c) Secondary Alarm Station, d) TSC, and e) TMI OSC.

⑥ Pennsylvania Emergency Management Agency Radio System transmits from TMI ECC and EOF.

- Oyster Creek

At OCNGS, base stations are located in the Emergency Control Center and the Emergency Operations Facility. The EOF has the capability of transmitting and receiving on the State Emergency Radio (EMRAD) Network which provides a communication path with the N.J. State and Ocean County Emergency Management Centers.

7.4.2 Station Warning System

7.4.2.1 Alarms

Audible alarms are a quick and effective means of communicating emergency warnings on the site. Alarms currently installed at TMI and Oyster Creek include:

① Station Emergency Alarm
② Fire Alarm
③ Reactor Building Evacuation Alarm

Each alarm provides a distinctive sound that all site personnel and contractors are trained to recognize and respond to. The Station Emergency Alarm will be followed by an announcement that provides emergency information such as class of emergency declared, accountability directions, radiological precautions, etc. At TMI-

1 and OCNGS, the Reactor Building evacuation alarm is supplemented with flashing lights at specific locations in the Reactor Building to provide both audible and visual warnings.

The Control Room alarm systems consist of overhead annunciators, panel annunciators and computer alarms. The overhead and panel annunciators consist of flashing translucent tiles and audible indicators (i.e., buzzer or horn). The computer alarms use annunciators and also provide specific data using the alarm printer. At TMI-1, alarm data is also provided by CRTs.

7.4.2.2 Plant Paging System

The Plant Paging System provides plant-wide paging from the Control Room and all remote stations plus private communications during normal operating conditions.

The plant paging system provides immediate warning and instructions to onsite personnel in the event of an emergency. Phone stations and speakers of this subsystem are located in vital plant areas.

7.4.2.3 Call Out Telecommunications Equipment (TMI)

The telephone system and dedicated instruments enable the Communicators to contact emergency response personnel during an emergency and receive a response from each individual responding. Through the use of this equipment, the Communicator is able to determine which individuals are responding by name, duty roster position, and estimated time of day of their arrival.

7.4.2.4 Call Out Telecommunication Equipment (OCNGS)

The Call Out telecommunication equipment enables personnel to determine who has responded to the call-out of emergency personnel. Emergency personnel notified by pocket pager during the call-out will call a number, listen to the message, enter a position identifier using a touch tone phone causing the individual's response to be documented. It will also contact personnel (e.g., alternates for unfilled positions).

7.5 Assessment Facilities

7.5.1 Onsite Systems and Equipment

7.5.1.1 Radiation Monitoring System

The onsite Radiation Monitoring System contributes to personnel protection, equipment monitoring, data gathering, and accident assessment by measuring and recording radiation levels and concentrations of radioactive material at selected locations within the plant. The Radiation Monitoring System alarms and initiates required emergency actions when radiation levels or radionuclide concentrations exceed predetermined levels. Area, liquid, and atmospheric monitoring subsystems are required to perform these functions. Specific details regarding radiation monitoring and effluent monitoring systems can be found in system design

descriptions (SDDs) and site Final Safety Analysis Reports, the TMI Emergency Dose Calculation Manual and the TMI Radiation Monitoring Setpoint Procedures.

The data from these subsystems are displayed by readout in the Control Room. Selected channels are recorded by recorders and/or the plant process computer which are also located in the Control Room.

In general the radiation monitoring equipment is designed in accordance with the following:

❶ Each monitoring station has adjustable alarm, alert, and power supply failure alarms.

❷ Solid-state circuitry is used except for primary detectors.

❸ Most AC operated radiation monitoring equipment, except for the pump assemblies, is provided with power from the battery-backed, inverter-fed vital power supply bus.

❹ Each radiation monitor is capable of being checked periodically with solenoid actuated check sources.

❺ A pulse generator or solid sources are used for electrically checking each monitor or subsystem.

❻ The modules are designed so that an alarm and/or indication is initiated when failure occurs anywhere in the channel.

7.5.1.1.a Three Mile Island

❶ Area Radiation Monitoring

The TMI-1 area radiation monitoring subsystem is comprised of channels which utilize an ion chamber detector housed in a weatherproof container.

❷ Containment Radiation Monitors

Post accident radiation levels in containment are monitored by two channels of fully qualified high range area monitors. These monitors are ion chamber detectors and are designed to withstand a LOCA.

Readout modules are located for these detectors on the radiation monitoring panel in the control room.

❸ Atmospheric Radiation Monitoring

Each installed atmospheric monitor (except the condenser off-gas ESF ventilation exhaust and waste gas monitor) is comprised of a

particulate measuring channel, iodine measuring channel, and a gaseous measuring channel. The atmospheric radiation monitor subsystem is comprised of monitors with fixed and movable particulate filters, and fixed radioiodine filters. Representative samples are obtained by means of a sampling head placed in a ventilation duct.

Movable airborne monitors are typically used in the spent fuel handling area during refueling operations and in the radiochemical laboratory during laboratory sample preparation operations. These monitors are supplemented with various other portable radiation monitors. Each monitor contains three channels for particulate, iodine, and gaseous monitoring, respectively.

❹ Liquid Radiation Monitoring

The liquid radiation monitoring subsystem is comprised of monitors, each of which has a sampler, detector, and Control Room ratemeter module (exceptions are the IWTS/IWFS discharge monitor, waste treatment system discharge monitor and the turbine building sump pump). The monitors provide visual indications in the Control Room. The TMI-1 Primary Coolant Letdown monitor also contains a high range channel.

❺ Post Accident Sampling System

The post accident sampling system at TMI-1 was designed and built by GPU Nuclear in cooperation with Babcock and Wilcox. Liquid Reactor Coolant System Post Accident Sample System (PASS) samples may be taken from the pressurizer and decay heat and reactor coolant letdown systems. Liquid samples may be analyzed for isotopic concentration, boron concentration, chloride concentration and dissolved gases. The Containment Atmosphere Post Accident Sampling System (CATPASS) is used to sampling isotopic concentration in the containment atmosphere. MAP-5 microprocessor stations sample iodine and particulates in condensor off-gas and auxiliary and reactor building exhausts.

7.5.1.1.b Oyster Creek

❶ Radiation Monitoring

Plant areas are provided with area radiation monitors in the AOG, Turbine, Reactor, old Radwaste and new Radwaste buildings. In-plant ARMs (turbine, reactor and old radwaste buildings) are the Geiger-Mueller type. The Augmented Off-Gas (AOG) building and the new Radwaste building utilize ionization chambers.

Each in-plant monitor has a remote indicator, an alarm and is recorded on one of two multi-channel recorders in the Control Room. The

monitors are provided with an upscale alarm which is set using past plant operating experience and warns of an abnormally high radiation level and each monitor is provided with a downscale alarm which warns of instrument channel failure. The individual detectors and associated instrumentation for the AOG and the new Radwaste buildings are provided with local indication and alarm, range indication on the respective AOG and new Radwaste control panels, high and high high alarm for concerned level and limit level respectively.

- Atmospheric Radiation Monitoring

Atmospheric Radiation Monitoring is provided by Reactor Building RAGEMS, Turbine Building RAGEMS, Air Ejector Off-Gas Monitoring, Reactor Building Ventilation Monitoring, and AOG Building monitoring.

RAGEMS (Radioactive Gas Effluent Monitoring System) has been installed to comply with NUREG 0737. These systems will provide for a continuous monitoring of noble gas releases, continuous particulate and iodine samplers are included in the RAGEMS. The systems are designed to detect noble gas. Iodine and particulate samples from both systems must be manually analyzed to provide isotopic concentrations of halogens and particulates. RAGEMS data is accessible from recorders in the control room and/or by accessing the RAGEMS system computers, or the plant computer system.

The Air Ejector Off-Gas Monitoring Subsystem draws a sample of the condenser off-gas downstream of the steam jet air ejectors. Here, a 2 minute delay line is provided to allow for the decay of N-16 and 0-19 before passing through the sample chamber. The sample chamber is provided with two detectors. Output is recorded on a recorder located in the Control Room. The count-rate meters have adjustable downscale trip and upscale trips. The upscale trips are set at four times the maximum allowable stack gas release rate, while the downscale trip is set to indicate instrument failure. Any combination of either two "HI HI" upscale trips or one "HI HI" upscale and one downscale trip will initiate a 15 minute timed closure of the off-gas exhaust valve at the stack or isolate the augmented Off-Gas system if in operation. The recorders have an adjustable upscale "HI" alarm set at a valve equivalent to the maximum allowable stack gas release rate.

The Reactor Building Ventilation Monitoring Subsystem provides continuous monitoring of the gaseous discharges from the Reactor Building ventilation systems through the use of two Geiger-Mueller detectors located upstream of the ventilation outlet isolation valves. The downscale alarm indicates instrument failure, while the upscale trip is set at an acceptable radiation concentration. The activation of the upscale trip will close the Reactor Building ventilation inlet and outlet isolation valves, trip the ventilation fans and energize the standby gas

treatment system. However its usefulness is limited due to its sensitivity to other external radiation sources.

- Liquid Radiation Monitoring

The Process Liquid Monitoring Subsystem provides the continuous monitoring of three process liquid streams; the radwaste discharge, the reactor building closed cooling-water system, and the reactor service-water discharge. The radwaste monitors are located in the radwaste discharge line external to the radwaste building, downstream of the flow control valves. The reactor building closed cooling-water probe is located at the discharge header of the cooling water pumps.

The reactor service-water monitor is located in the service water discharge of the closed cooling-water heat exchanger.

- The Isolation Condenser Vents and Containment Spray Heat Exchanger Service Water Effluent Monitoring Subsystem

These subsystems monitor the shell side steam discharge from the secondary side of the emergency condensers, and the cooling water discharged from the containment spray heat exchangers. The radiation monitoring system is intended primarily to detect tube leaks, which would permit reactor coolant transfer to the normally clean secondary discharge systems. However its usefulness is limited due to its sensitivity to other external radiation sources. The "A" emergency condenser atmospheric vent line has two detectors mounted next to the vent pipe. The "B" emergency condenser is outfitted with two vent lines, each of which is provided with a detector mounted next to the vent pipe. The four containment spray heat-exchanger service-water outlets each have a detector identical to those on the isolation condenser vents, except they are more sensitive. All detectors provide output to separate count-rate meters located in the Control Room.

- Main Steam Line Radiation Monitoring System

The Main Steam Line Radiation Monitoring Subsystem utilizes detectors mounted next to each of the primary steam lines. This subsystem provides continuous monitoring of the primary steam lines which gives an immediate indication of a gross release of fission products from the fuel to the reactor coolant and subsequently to the turbine.

The detectors located immediately upstream of the outer isolation valves at the drywell penetration provide an output to a meter and a recorder located in the Control Room.

Each monitor has a downscale alarm and an adjustable upscale alarm set at less than or equal to five times normal. If the indicated value on

two or more monitors reach ten times normal, station procedures direct the scramming of the reactor and the closure of all four main steam isolation valves.

❺ Augmented Off-Gas Building Ventilation Exhaust Monitoring System

The AOG Exhaust Monitoring System is designed to monitor and sample the effluent for iodine, gas, and particulates. The data from these subsystems are displayed by local readouts on the AOG control panel and are recorded by strip chart recorders displayed locally.

❼ Containment Radiation Monitors

High range containment radiation monitors have been installed at OCNGS to monitor containment radiation levels.

❽ Post Accident Sampling System

The Post-Accident Sampling System (PASS) at Oyster Creek Nuclear Generating Station was designed to sample five separate post-accident media from eight separate sampling points.

Liquid samples may be taken of the reactor water from "A" recirc loop, the liquid poison system or the shutdown cooling system and of torus water from the core spray system.

Gaseous samples may be taken of the drywell atmosphere from the hydrogen monitoring system and from the ring header. Gaseous samples may be taken of torus atmosphere and secondary containment from the TIP room.

7.5.1.2 Fire Protection Devices

Site specific details regarding Fire Protection at the TMI and OCNGS sites are as follows:

7.5.1.2.a Three Mile Island

The TMI-1 Fire Protection Program is described in Section 9.9 of the FSAR. For TMI the "Fire Protection Program Plan" is identified under AP 1035, which provides a description of the TMI Fire Protection Program Plan. For the site, these two documents provide references to the supporting, implementing documents. Together they address fire protection for the site.

7.5.1.2.b Oyster Creek

Fire Protection at OCNGS is provided by the Fire Service Water System, the Halogenated Fire Suppression Systems, the CO_2 Fire Extinguishing System, and the Fire Detection/Alarm System.

The Fire Service Water System is a full-loop, piped system that supplies water for sprinklers, deluge water spray, fire hydrants and hose connections that are located to provide fire protection for all major areas of the plant. A man-made pond containing approximately 7 million gallons of water supplies a water source for this system. This system is maintained in a pressurized condition by an electric drive pond pump. In the event a fire occurs, and either an automatic or manual system is inititated, the Fire Service Water System piping pressure will decrease which will sequentially start two diesel fire pumps to meet system flow requirements. The backup supply of Fire Service water consists of a 350,000 gallon tank and electric pump which may manually be initiated to supply the loop should the primary source of water be inoperable.

Automated Halogenated Fire Suppression Systems are provided in the Control Room panels, the station battery A and B room and the 480 volt switchgear room to quickly suppress any fires that may occur.

The $C0_2$ Fire Extinguishing System provides fire protection for the 4160 Switchgear Vault. When a manual pushbutton is depressed, the CO_2 is discharged into the 4160 Switchgear Vault after a time delay.

7.5.1.3 Seismic Monitoring

Specific details regarding the seismic monitoring systems at the TMI and Oyster Creek sites are included as follows:

7.5.1.3.a Three Mile Island

Strong motion recording systems at TMI measures ground motion and structural vibrating response caused by an earthquake occurring in the vicinity of the site. Cassette magnetic tape recorders located in the TMI-1 Control Room receive information supplied by triaxial sensor units which are firmly mounted on the Reactor Building. One triaxial sensor unit is attached immediately outside of the containment wall at the base of the Reactor Building. A second triaxial sensor is situated along the same Reactor Building axis, but is attached to the Reactor Building ring girder. The triaxial sensor units begin to supply seismic data to the magnetic tape recorder after a signal is sent to the sensors by a remote starter unit. A remote starter unit attached to the base of the Reactor Building provides a signal for its systems sensor units when the starter unit detects a ground acceleration greater than a present threshold level. The remote starter also actuates an annunciator in the TMI-1 control room labeled "Threshold Seismic Condition". If the ground acceleration exceeds the horizontal or vertical setpoints, a seismic trigger, also mounted on the base of the Reactor Building, will cause a TMI-1 annunciator labeled "Operating Basis Earthquake" to actuate. The time

history of a ground motion and resulting vibrating response can be displayed by using magnetic tape cassettes containing the recorded data, and the magnetic tape playback system in the control rooms. The magnetic tape playback system produces visual playouts of selected magnetically recorded data. This is accomplished with a strip chart recorder built into the playback system. A visual playout allows quick analysis of the earthquake. The magnetic tapes are available also for detailed analysis.

Peak reading accelerographs are anchored to Class 1 selected items. These accelerographs will produce a permanent record of the peak amplitude of the low frequency accelerations caused by seismic disturbances.

This record is in the form of magnetic erasure clips which must be developed using the magnetic developer kit. After devloping, these clips can be examined to verify seismic response which had been determined analytically.

7.5.1.3.b Oyster Creek

Although OCNGS currently does not have seismic or hydrologic instrumentation installed onsite, offsite hydrologic information can be obtained from the Hydrologic Division of the United States Geological Survey and offsite seismic information can be obtained from the LaMont Dougherty Geological Observatory, the New Jersey State Geological Survey or the United States Geological Survey.

7.5.1.4 Onsite Meteorological Monitors

Specific details regarding the onsite meteorological monitoring systems at the TMI and ONCGS sites are included as follows:

7.5.1.4.a Three Mile Island

At TMI, basic meteorological information is obtained from a weather tower maintained at the north end of the Island. Meteorological information has been collected at the site since May 1967. Real time information can be obtained from the mini-computer at the site.

The meteorological measurement system is deployed on a 150 ft. tower. It measures wind speed and wind direction at 100 ft. and 150 ft. above grade. There are redundant speed and direction sensors at the 100 ft. level. Temperature is measured at both 33 ft. and 150 ft. from two sets of platinum sensors. Temperature difference (ΔT) is also derived and recorded. Strip charts located inside the meteorological building adjacent to the weather tower record all of the above information. The Control Room is also provided with strip charts of wind speed, direction, temperature, and a measure of atmospheric stability.

Meteorological data can be remotely interrogated by telephone by NRC and Commonwealth of Pennsylvania.

Environmental Controls personnel are capable of making real-time offsite estimates of atmospheric effluent transport and diffusion following an accidental airborne radioactive release from the plant. Real time meteorological information is obtained by telephone from the personal computer at the meteorological building located at the north end of TMI. The personal computer has a storage capacity of several days worth of data. Beyond that time period the meteorological data is permanently stored in a history file. Back-up meteorological information is available from the National Weather Service directly and indirectly from other sources that collect National Weather Service information.

7.5.1.4.b Oyster Creek

Meteorological data have been collected onsite since February of 1966. The current meteorological tower is 400 ft. high and located 2529 feet (0.48 miles) west-northwest of the OCNGS stack. The tower is instrumented with complete redundant sensors at 33 feet and 380 feet. Single sensors are located at 150 feet. A back-up electrical power supply is available, if necessary. The instrumentation and meteorological variables measured at each level are as follows:

Approximate Height Above Tower Base (ft.)	Parameter
380	wind speed*, wind direction*, temperature*, ΔT 380-33 ft.*
150	wind speed, wind direction, temperature, ΔT 150-33 ft.
33	wind speed*, wind direction*, and temperature*
Ground Level	rainfall

*redundant system available.

The variables are measured every 10 seconds and are averaged for 15-minute periods before being archived using a computer.

There are redundant wind speed, wind direction, and temperature sensors at the 33- and 380- ft. levels to insure efficient data recovery and to comply with U.S. Nuclear Regulatory Commission Regulatory Guide 1.23 requirements. In addition, a processor calculates vertical temperature differentials between the 150- and 33-ft. and the 380- and 33-ft. levels. All readings are continuously recorded on strip chart recorders at the base of the tower.

The meteorological tower sensors, chart recorders, and processors are calibrated at least semi-annually as per Regulatory Guide 1.23. Periodic tower inspections are made to insure maximum data integrity. A full description of the Onsite Meteorological Measurement Program is included in the FSAR.

Meteorological data can be remotely interrogated by telephone by the NRC and New Jersey State agencies.

7.5.1.5 Process Monitors

Process monitors measure appropriate parameters that are indicative of the status of various plant systems and the reactors. These parameters are displayed and recorded in each Control Room, or at local panels in the plant.

7.5.1.6 Laboratory Facilities

The TMI and Oyster Creek laboratory facilities are equipped to provide the water chemistry and radiochemical analysis support required during normal plant operations and emergencies.

7.5.1.7 Systems and Equipment Required by NUREG-0578 (TMI-1 and OCNGS)

Onsite capability and resources to provide initial values and continuing assessment throughout the course of any accident include post-accident sampling capability, radiation and effluent monitors, in-plant iodine instrumentation and containment radiation monitoring in accordance with NUREG-0737, which has superceded NUREG-0578.

7.5.2 Facilities and Equipment for Offsite Monitoring

7.5.2.1 Reuter Stokes Sentri System

The Reuter Stokes Sentri System at TMI and OCNGS each consist of radially located monitoring stations hard-wired into a central processing center (CPC). The TMI system was installed in 1981 and the OCNGS system was installed in 1982 and upgraded in 1993. The TMI system is owned by GPUNC; the OCNGS system by the State of New Jersey.

Each monitoring station measures and records ambient radiation levels every five seconds. The central processing units interrogate each monitoring station at regular, specified time intervals. Average ambient radiation levels, station status and diagnostic information are then transmitted by telephone line to the print-out locations. The TMI system monitoring stations can measure from 0 mR/hr to 100 mR/hr; the OCNGS stations from 0 to 500 micro R/hr and 0.5 to 100 mR/hr. and 10R/hr.

Alarm setpoints for each station are set at the CPC. When a setpoint is exceeded, the CPC automatically increases print-out frequently and indicates which station(s) have exceeded the setpoint.

7.5.2.2 Radiological Environmental Monitoring Program (REMP)

Complete Radiological Environment Monitoring Programs (REMP) for the TMI and OCNGS sites have been established GPU Nuclear Corporation.

The objectives of the REMP are:

1. To fulfill the obligations of the radiological environmental surveillance sections of the Environmental Technical Specifications of the respective plant.
2. To determine whether any statistically significant increase occurs in the concentration of radionuclides in critical pathways.
3. To detect any buildup of long-lived radionuclides in the environment.
4. To detect any change in the ambient gamma radiation levels.
5. To verify that radioactive releases are within allowable limits and that plant operations have no detrimental effect on the health and safety of the public or the environment.
6. To obtain a post accident historical assessment of accumulated dose for the affected area.

Samples for the REMP are taken from the aquatic, atmospheric, and terrestrial environments. Sample types are based on: 1) established critical pathways for the transfer of radionuclides through the environment to man, and 2) experience gained during the preoperational and initial operational phases of the REMP. Sampling locations were determined from site meteorology, hydrology, local demography, and land uses.

Sampling locations are divided into two classes: indicator and control. Indicator stations are those which are expected to monitor plant effects, if any exist; control samples are collected at locations which are believed to be unaffected by plant operations. Fluctuations in the levels of radionuclides and direct radiation at indicator stations are evaluated with respect to analogous fluctuations at control stations. Indicator station data is also evaluated relative to background characteristics established prior to station operation.

The following samples are obtained: air iodine, green leafy vegetables, air particulates, immersion dose (TLD), fish, aquatic plants, precipitation, sediment, surface water, drinking water, ground water, soil, fodder crops, fruit and milk.

The TLD program used by GPU Nuclear meets the requirements set forth in the TMI and OCNGS Technical Specifications. Locations of Environmental TLDs can be

found in the most recent Radiological Environmental Monitoring Report for Three Mile Island and Oyster Creek. These reports are submitted annually to the NRC in accordance with Technical Specifications. Additional information regarding the site specific TLD program follows:

7.5.2.2a Three Mile Island

State-of-the-art thermoluminescent dosimeters are used. They contain two calcium sulfate and two lithium borate phosphor elements. This enables the evaluation of beta dose, if needed, as well as gamma dose, but during normal operations only gamma dose is evaluated. The Annual Radiological Environmental Monitoring Report describes the locations of each station. Environmental TLDs are normally collected and analyzed quarterly.

7.5.2.2.b Oyster Creek

The TLD program used by GPU Nuclear at OCNGS exceeds the requirements of the Oyster Creek Technical Specifications, as do other aspects of the REMP. Radiological and Environmental Monitoring Report contains a detailed description of the number and locations. During normal operations, accurate measurements of the environmental gamma dose are made. Following an accident, a cumulative dose estimate will be available.

7.5.2.3 National Weather Service (NWS)

The NWS can provide backup meteorological information (e.g., wind speed, temperature, wind direction) from several locations in the vicinity of the TMI and Oyster Creek sites. At TMI, information is provided by Harrisburg International Airport, Capital City Airport and the State Turnpike Authority. At OCNGS, information is available through the Atlantic City and Philadelphia NWS offices.

The NWS will also perform emergency balloon runs to collect data upon request. Air stability determinations are also provided, with information received from weather stations in Pittsburgh; Washington, D.C.; Binghamton, NY; and Atlantic City, NJ.

Back-up meteorological information from the National Weather Service is also available indirectly from other sources that collect National Weather Service data.

7.5.2.4 Federal Radiological Monitoring and Assessment Plan (FRMAP)

The Federal Radiological Monitoring and Assessment Plan was developed to coordinate Federal radiological assistance. The FRMAP establishes: (a) A means of requesting and providing Federal radiological assistance from existing Federal resources and (b) an operational framework for coordinating the radiological monitoring and assessment activities of Federal agencies during radiological emergencies occurring within the United States and its territories.

To the extent that assistance under this plan is needed, GPUNC requests for Federal assistance will be coordinated through the NRC. Requests for this assistance will be

initiated by the Emergency Director, Radiological Assessment Coordinator or Emergency Support Director. When notified of an emergency, the Federal agencies will respond with equipment and personnel, as required, to assist in the performance of assessment actions. The resources available consists of, but are not limited to:

1. Portable radiation survey instrumentation
2. Mobile laboratory facilities
3. Personnel for supporting functions
4. Special transportation activities
5. Environmental monitoring teams

7.5.2.5 State Departments of Environmental Resources/Protection

The NJ Dept. of Environmental Protection, BNE, and PA Dept. of Environmental Resources, BRP, are responsible for responding to radiological incidents within their respective state boundaries. The BRP and BNE maintain personnel, facilities and equipment to assist in assessing the hazard and provide technical guidance and recommendations regarding the implementation of protective actions for the general public. The BRP and BNE perform both routine and emergency environmental monitoring.

7.5.2.6 Offsite Emergency Radiological Assistance

Backup radiological monitors, including rate meters, sampling devices, dosimeters and laboratory facilities will be obtained through GPU Nuclear Corporation. Equipment, facilities and personnel from the GPU System will be used to support the emergency site during emergency situations.

Additional radiological emergency assistance available to the TMI and OCNGS sites from companies, utilities and governmental agencies is included in the INPO Emergency Resources Manual.

7.6 Additional Support Facilities

Personnel protective action is a function of the nature of the hazard (e.g., preparing for a hurricane is somewhat different from preparing for radiological hazards). Preplanned responses to basic hazards, high wind, flooding, earthquakes, and radiation exposure, are an integral part of the Emergency Plan. A fundamental concept in personnel protection is the evacuation of all individuals not essential to the operation, safety, security, and damage control of the plant. Obviously some hazards can occur before significant protective action can be applied (e.g., earthquake). When the situation permits positive action, the appropriate alarms are sounded and all personnel on the site either assume assigned emergency responsibilities or prepare for evacuation.

Provision has been made for adequate supplies and protective equipment for all personnel who may be required to perform emergency activities. Specific quantities of each type are detailed in station procedures and include equipment for personnel monitoring, determining the magnitude and continuously assessing the impact of the release of radioactive material, decontaminating personnel and providing emergency first aid. Additionally, a current prescription and adequate supplies of potassium iodide are maintained by the site Medical Department for issue to personnel exposed or suspected of exposure to radioactive iodine.

Onsite locations have been designated as emergency assembly points or areas where emergency teams will be assembled in accordance with the Emergency Plan Implementing Procedures or as directed by the Emergency Director. Major locations for onsite protective equipment and supplies are the Control Rooms, access control points, and processing centers. Additional information regarding protective facilities can be obtained by consulting the FSAR's.

7.6.1 Annex to the Emergency Operations Facility (AEOF)

The Annexes to the Emergency Operations Facilities (AEOFs) supplement activities at the Emergency Operations Facilities (EOFs) by providing Security badge issuance, Radiological Controls and Maintenance support. The TMI AEOF also provides personnel decontamination facility.

7.6.2 Media Center/Joint Information Center

Media Centers have been established for the GPUNC sites to provide for the dissemination of accurate and timely news information. Equipment and facilities are designed to support timely communications and information dissemination on plant conditions and emergency operations to the news media.

7.6.3 Environmental Assessment Command Center (EACC)

The Environmental Assessment Command Centers are co-located in the Emergency Operations Facility buildings for both TMI and OCNGS sites. The EACC provides for the analysis of field monitoring data and the coordination of the offsite radiological and environmental monitoring. In addition, at OC the EACC performs offsite release dispersion modeling. Computer terminals are available to display real-time meteorological data and facilitate dispersion modeling and dose projections. The EACC at Oyster Creek provides an independent review of dose projections performed by the RAC.

7.6.4 Parsippany Technical Functions Center (PTFC)

The Parsippany Technical Functions Center is located at GPU Nuclear headquarters in Parsippany, NJ and serves both TMI and Oyster Creek plant sites. The Group Leader - Technical Support and his staff report to this facility within four hours of notification of declaration of a Site Area Emergency or General Emergency at the plant sites or when directed. Representatives of this group, designated as the Technical Support Representatives, are located at the TMI and Oyster Creek plant sites and report to the EOF in the event of an emergency to provide technical support to the Emergency Support Director. This facility is equipped with dedicated phone lines to each Emergency Operations Facility and Oyster Creek and TMI Technical Support Centers. The PTFC is provided access to

Oyster Creek and TMI-1 in-plant parameters using CRT terminals. As required for plant support, PTFC will contact the NSSS vendor for emergency assistance.

7.6.5 Remote Assembly Areas (RAA)

Offsite Remote Assembly Areas have been designated at the TMI and OCNGS sites for assembly of personnel following muster and accountability at the onsite emergency assembly areas. Personnel and vehicles arriving at the RAA are monitored by qualified personnel in accordance with approved Radiological Controls Procedure. Personnel arriving at the RAA as a result of site evacuation will be mustered, monitored and given further instructions.

7.6.6 Control Room/Shift Supervisor's Office

The Control Room and Shift Supervisor's Office are designed to be habitable under accident conditions and will serve as the primary onsite Emergency Control Center (ECC).

These areas are located in seismically-rated structures and have adequate shielding to permit safe occupation for extended periods of time. The TMI-1 Control Room ventilation system has redundant fans and chillers and is provided with radiation and smoke detectors with appropriate alarms and interlocks. Provisions have been made for air from the control rooms to be recirculated through high efficiency particulate air (HEPA) and activated charcoal filters. Fresh air is drawn through underground ventilation tunnels which have been provided with protection against combustible vapors, incipient explosions or fires. The tunnels are Seismic Class I rated and also designed for a hypothetical aircraft incident.

The OCNGS control room ventilation system can be operated in an emergency mode with 100 percent outside air to prevent recirculation of smoke in the control room and to clear the areas of smoke and fumes. This system has been modified to prevent smoke from other areas from entering the control room.

Emergency lighting, power, ventilation system, and shielding walls enable operators to remain in the Control Room to ensure that the reactor will be maintained in a safe condition. In addition, the operators will be able to evaluate plant conditions and relay pertinent information to appropriate onsite and offsite personnel, organizations, and agencies during emergencies. To ensure the operations shift and other personnel assembled at the location can remain self-sufficient, emergency equipment and supplies will be stored in or near the Control Room. The exact location, type and quantity of emergency equipment and supplies available is specified in the Emergency Plan Implementing Documents.

7.6.7 Processing Center

The Processing Center will be continuously manned by Site Security Force personnel, unless otherwise directed. Emergency equipment and supplies will be maintained in this facility to support such tasks as reentry efforts, performing onsite and offsite radiation surveys or collecting samples. The exact location and the type and quantity of emergency equipment and supplies are specified in the Emergency Plan Implementing Document.

7.6.8 Emergency Assembly Areas

All TMI non-essential personnel will be directed to Warehouse 1 or 3 depending on the radiological conditions as determined by the RAC. Both structures are pre-engineered metal buildings with a conventional ventilation system. Respirators, protective clothing, and most other protective equipment for the plant are stored in these warehouses. If required, personnel assembled at these points could be issued protective equipment from stored supplies.

The OCNGS Materials Management Warehouse is designed as the Emergency Assembly Area for OCNGS site personnel. If ordered to evacuate the site, personnel will travel in company or private vehicles, at least four persons to a vehicle is recommended, to the Remote Assembly Area at the Berkeley Line Station or the Forked River Assembly Area.

7.7 First Aid and Medical Facilities

First aid facilities are designed to support a wide range of immediate care requirements ranging from simple first aid to procedures requiring a physician. The most readily available first aid is provided by small kits placed throughout the plant. These kits contain items typically needed to care for minor injuries. Typical contents can be referenced in Table 8A and 8B. The next level of first aid equipment is found at first aid stations. The medical staff can also provide Advanced Life Support and routine trauma care.

7.8 Damage Control Equipment

The GPUN plant sites are extensively equipped to conduct preventive maintenance and repairs on mechanical, structural, electrical, and instrumentation and controls equipment found in the plant. Operational policy requires that a minimum maintenance crew be assigned to the onsite shift organization at all times. Each individual assigned to the maintenance crew is qualified and certified to perform the tasks associated with his craft in the working environment of a nuclear plant.

In addition to the equipment and materials required for normal maintenance, other items are available to handle extraordinary maintenance jobs that might arise in damage control. Selection of damage control equipment inventory is based upon (a) mitigating the consequences of flooding, (b) personnel rescue, (c) checking the uncontrolled flow of fluids from process sytems, and (d) elimination of electrical hazards. Typical equipment available for damage control can be found in Tables 8A and 8B.

7.9 Radiological Controls Equipment

The GPUN plant sites maintain an inventory of protective clothing, respiratory equipment, survey instruments and supplies to provide adequate contamination control for all personnel expected to be onsite who might be affected in the event of an emergency.

The supplies are maintained, updated, inventoried and calibrated, as appropriate, on a regular basis in accordance with applicable procedures. Storage locations of emergency supplies can be found in the site implementing documents. Typical equipment available can be found in Tables 8A and 8B.

7.10 Emergency Equipment Readiness

To insure that the necessary emergency equipment is maintained and available for use during emergency situations, readiness checklists have been developed and incorporated in Administrative Procedures. These checklists facilitate detailed inventory and calibration/functional checks of equipment contained in the emergency kits/lockers. The inventory checklists will be performed on a quarterly basis and to insure interim readiness, all kits/lockers are sealed or locked as appropriate.

8.0 MAINTAINING EMERGENCY PREPAREDNESS

Although this plan is considered to be part of the Final Safety Analysis Reports (FSARs), GPU Nuclear Corporation will maintain, as separate documents, this Emergency Plan and the TMI and Oyster Creek site-specific Emergency Plan Implementing Documents.

Efforts will be made to assure continuous emergency preparedness and operational readiness among GPU Nuclear personnel and the offsite response agencies and organizations. The Director, Nuclear Services has been assigned overall responsibility for emergency planning at the GPUNC plant sites. This responsibility includes the Emergency Plan and Implementing Documents and interrelationships with Federal, State and County plans, agreement letters, corporate policy and plans, and other related plans, programs, and procedures. The Director, Radiological Health and Safety and TMI and Oyster Creek Emergency Preparedness Managers have been designated to assist the Director, Nuclear Services in his assigned responsbilities.

8.1 Responsibilities

8.1.1 All Division Directors - In accordance with the requirements of the Emergency Plan and Implementing Procedures shall:

8.1.1.1 Designate essential personnel to be assigned to positions within the On-Shift, Initial Response Emergency, and Emergency Support Organizations as specified in Table 15.

8.1.1.2 Ensure that personnel designated for assignment to emergency response organizations satisfy the prescribed prerequisites as identified in the TMI/OC Administrative Procedures.

8.1.1.3 Ensure that assigned responsibilities for maintaining emergency preparedness are accomplished in a timely and effective manner in accordance with relevant procedures and that required documentation is prepared and maintained to reflect accomplishment of such activities, i.e., surveillance, audit, inventory, calibration and corrective actions, as appropriate.

8.1.1.4 Provide technically qualified personnel to support the Emergency Preparedness department in the development of drill/exercise scenarios and review of scenarios for technical accuracy and content.

8.1.1.5 Provide technically qualified observer/controller personnel to assist in the conduct and evaluation of drills and exercises.

8.1.2 Director, Nuclear Services Division - In addition those requirements specified in Paragraph 8.1.1 above, shall:

8.1.2.1 Ensure development and implementation of a GPU Nuclear Emergency Preparedness Training Program which is in accordance with the requirements of the Emergency Plan.

8.1.2.2 Conduct the annual review of the Emergency Preparedness Program in accordance with 10 CFR 50.54(t).

8.1.2.3 Provide instructor personnel qualified to participate in the development and/or conduct of specified training courses in accordance with Table 13.

8.1.2.4 Provide for the review/concurrence of all Radiological and Environmental Controls-related Emergency Plan Implementing Procedures and training courses.

8.1.2.5 Provide for proper and timely development, implementation and maintenance of dose projection methodology including computer software with concurrence from the Emergency Preparedness Department and review for concurrence proposed changes to the methodology.

8.1.2.6 Provide and maintain the necessary portable radiation survey instruments, assigned vehicles and radios for use by both onsite and offsite survey teams and computer equipment used to run dose projection software.

8.1.2.7 Ensure development, implementation and maintenance of the GPU Nuclear Emergency Preparedness Program, including an Emergency Plan and Unit-specific Implementing Documents.

8.1.3 Director, Technical Functions Division - In addition to the requirements specified in Paragraph 8.1.1 above, shall:

8.1.3.1 Provide instructor personnel qualified to participate in the development and conduct of appropriate portions of the specified training course in accordance with Table 13.

8.1.4 Director, TMI Division - In addition to the requirements specified in Paragraph 8.1.1 above, shall:

8.1.4.1 Provide instructor personnel qualified to participate in the development and conduct of appropriate portions of the specified training courses in accordance with Table 13.

8.1.5 Director, Communications - In addition to the requirements specified in Paragraph 8.1.1 above, shall:

8.1.5.1 Provide an Emergency Public Information Implementing Procedure, and a staff to handle all public information aspects (media inquiries, news releases and briefings, public official notifications, and in Pennsylvania, rumor control) of an emergency at the company's nuclear stations.

8.1.5.2 Provide and maintain in readiness Joint Information Centers to handle, as necessary, the public information aspects of an emergency at the company's nuclear stations.

8.1.6 Training and Education Director - Shall assume overall responsibility for the development, implementation, and administration of the Emergency Preparedness Training Program. Specific responsibilities shall include:

8.1.6.1 The development, scheduling, presentation, documentation and administration of training, consistent with the training scope referenced in the Emergency Preparedness Training Program, the instructor responsibility assignments of Table 13 and the periodic training requirements of Table 14 of this plan.

8.1.6.2 The review by the cognizant Radiological and Environmental Affairs Department(s), for concurrence, of emergency preparedness training content records dealing with radiological or environmental controls, procedures and concerns.

8.1.6.3 The review by the Emergency Preparedness Department, for concurrence, of emergency preparedness training content records.

8.1.6.4 The development, coordination and publication of training schedules of supporting training facilities to satisfy program requirements.

8.1.6.5 Documentation of training, to include, as a minimum, attendance records and the status of training related to emergency preparedness. Emergency Preparedness training conducted by other than the Training Department shall be documented to the Training Department by the organizations conducting that training, in accordance with Training Department processes.

8.1.6.6 Providing qualified instructor personnel to conduct specified training consistent with Table 14.

8.1.7 Director, Radiological Health and Safety or designee - Shall assume overall responsibility for the development, implementation and maintenance of the GPU Nuclear Emergency Preparedness Program in cooperation and coordination with the Operating and Support Divisions. Specific responsibilities shall include:

8.1.7.1 Development, implementation and maintenance of the Emergency Plan and Implementing Documents.

8.1.7.2 Development, implementation and coordination of the Emergency Preparedness Surveillance Program.

8.1.7.3 Determining, in coordination with affected departments, which categories of personnel are to receive what emergency preparedness training. This includes reviewing, for concurrence, the emergency preparedness Training Content Records to ensure (1) compliance with regulatory requirements and with the provisions of the Emergency Plan, and (2) that the emergency plan-related technical content is current, correct and appropriate.

8.1.7.4 Providing qualified instructor personnel to conduct specified training in accordance with Table 13.

8.2 Organizational Preparedness

8.2.1 Training

All personnel at the Three Mile Island and Oyster Creek sites take part in a formal training program under the direction of the Manager Plant Training TMI and Manager Plant Training, Oyster Creek, respectively. In general, this training program provides for the indoctrination of GPU Nuclear employees and contractors in addition to providing specialized training for licensed operators, health physics/radiation protection personnel, and personnel assigned specific responsibilities in the emergency organization.

The Manager Plant Training TMI and Manager Plant Training Oyster Creek are responsible to ensure that personnel in each department receive the appropriate training. They may delegate specialty training responsibilities to personnel qualified to perform such training.

The training program for the GPUNC sites includes the following:

- All staff personnel are required to attend the General Employee Training Program annually. With regard to emergency planning, the objectives of these programs are to:

  a. Familiarize personnel with the scope, applicability, and the concept of implementation of the Emergency Plan.

  b. Familiarize all personnel with the station alarms and appropriate personnel response.

  c. Familiarize those personnel who do not have pre-assigned emergency response duties (i.e., non-essential personnel) with their required actions during emergencies which include paying attention to instructions, responding to alarms, assembly, accountability, and evacuation.

- GPU Nuclear station and station support organization personnel assigned to the emergency organization with specific Emergency Plan duties and responsibilities (i.e., essential personnel) are required to attend specific emergency preparedness training. The training is designed to prepare these essential personnel to perform their assigned duties in accordance with the Emergency Plan and Implementing Documents.

  a. The scope of training for essential personnel is delineated in Table 11.

  b. Essential personnel shall reverify their assigned emergency preparedness training preferably every 12 months but at least every 15 months.

- In addition to state and county sponsored training, GPU Nuclear will invite the emergency management organizations listed below on an annual basis, to participate in a training program.

  The program will also include a review of recent changes to the GPUNC Emergency Plan and Implementing Documents with particular emphasis given to the classification of emergencies; reporting requirements; assessment, protective, and corrective actions; and communications networks that may affect interface with offsite agencies.

Three Mile Island

- Pennsylvania Emergency Management Agency
- Bureau of Radiation Protection, DER

NOTE

Training for the Pennsylvania State Police and risk counties is provided by the Pennsylvania Emergency Management Agency.

Oyster Creek

- NJ Office of Emergency Management
- State Bureau of Nuclear Engineering

NOTE

Training for the Risk County is provided by the NJ Office of Emergency Management (OEM).

❹ GPU Nuclear will offer training for hospital personnel, ambulance and rescue, police and fire departments. This training shall include the procedures for notification, basic radiation protection and their expected roles for those support organizations that must enter the site. Training shall also include site access procedures and the identity (by title) of the individual in the site emergency organization who will control the organizations' support activities. While it is expected that offsite support organizations would take advantage of the training, an organization that habitually fails to participate in training programs will be dropped from the list of relied upon offsite support agencies.

8.2.2 Drills and Exercises

Periodic drills and exercises will be conducted in order to test the state of emergency preparedness. The prime objective of this form of training is to verify the emergency preparedness of all participating personnel, organizations, and agencies. Each drill or exercise will be conducted to: (1) ensure that the participants are familiar with their respective duties and responsibilities, (2) verify the adequacy of the Emergency Plan and the methods used in the Emergency Plan Implementing Documents, (3) test communications networks and systems, (4) check the availability of emergency supplies and equipment, and (5) verify the operability of emergency equipment. In addition, repair and damage control shall be included in one major drill/exercise on an annual basis.

The site Emergency Preparedness (EP) Manager is responsible for the planning, scheduling, and coordinating of all emergency planning related drills and exercises. The site EP Manager in consultation with site managment, will approve all drills and exercises. The site Manager Plant Training will assist the Emergency Preparedness Manager in carrying out these responsibilities.

When a major drill or exercise is to be conducted, the Emergency Preparedness Manager will:

- Coordinate the assignment of personnel to prepare a scenario.
- Coordinate efforts with other participating emergency personnel, organizations, and agencies.
- Obtain required approvals (refer to applicable Administrative Procedures).
- Coordinate a date for drill execution and arrange for qualified observers.
- Critique the results of the drill.
- Assign personnel to correct any deficiencies.
- Ensure that deficiencies are corrected.
- Ensure that proper documentation is retained.

Scheduled drills and exercises will be held involving appropriate offsite as well as onsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted to simulate as closely as possible actual emergency conditions and may be scheduled such that one or more drills or exercises can be conducted simultaneously. Drill scenarios will be prepared that involve participation of several emergency teams and all or specific parts of the onsite and offsite emergency organizations including varying degrees of participation of Federal, State and County agencies and organizations and local services support personnel and organizations.

The Emergency Preparedness Manager will notify the offsite emergency response organizations and agencies in advance of the scheduled date of the drill or exercise.

A critique shall be scheduled and held as soon as practical after completing a drill or exercise. Observer and participant comments will be given to the Emergency Preparedness Manager for evaluation and/or resolution by assignment to appropriate individuals. A formal report will be prepared from each drill or exercise. Appropriate action items will be generated and tracked to completion. A file will be maintained on each drill listed below.

- Medical Emergency Drill

  At least one drill every 12 months (± 3 months) shall be conducted for the TMI and OCNGS sites. The drill will involve the participation of local medical support personnel and organizations (e.g., physician, ambulance service, hospital), and will involve simulated (injured) contaminated personnel.

- Fire Emergency Drill

  Fire drills shall be conducted in accordance with the site Fire Protection Plan.

⑤ Communications Links Test

a. The communication links with state and county governments within the Plume Exposure Pathway EPZ shall be exercised at least once per month for the TMI and OCNGS sites.

b. The communication links with Federal emergency response organizations and states within the Ingestion Pathway EPZ shall be exercised in accordance with State procedures.

c. The communication links between the nuclear facility, State and local emergency operations centers and field assessment teams shall be exercised at least once every 12 months (± 3 months) for the TMI and OCNGS sites.

In addition, emergency phone numbers shall be verified and updated on a quarterly basis.

d. The communications link between the nuclear facility and the NRC shall be exercised at least once per month for the TMI and OCNGS sites.

⑧ Radiological Monitoring Drill

At least one drill every 12 months (± 3 months) shall be conducted for the TMI and OCNGS sites. The drill shall include collection and analysis of all appropriate sample media for both onsite and offsite locations.

⑨ Radiological Controls Drill

At least one drill shall be conducted semi-annually. The drill will involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements. The drill shall include analysis of inplant liquid samples with simulated elevated activity levels.

⑩ Hazardous Material Spill Drill

Hazardous Material Spill Drills shall be conducted as required by the GPUNC Environmental Control Plan.

⑪ Annual Site Exercises

a. The GPUNC Emergency Plan shall be tested annually at the TMI and OCNGS sites to include a scenario appropriate to a Site Area or General Emergency. State and local government emergency plans will be included biennially with full or partial participation by state and local governments within the Plume Exposure Pathway EPZ as required by federal regulations.

b. Conduct of the exercise shall include mobilization of onsite and offsite emergency response personnel and resources in order to verify their capability to respond to an emergency. Communications with State and

County agencies will be included. The scenario will be varied from year to year such that all major elements of these plans and preparedness organizations are tested within a five year period. Once within each six year period an annual exercise will be started in accordance with NRC and FEMA objectives.

8.2.3 Emergency Preparedness Department

The responsibilities of the Emergency Preparedness Department shall include, but are not necessarily limited to:

1. Ensuring the coordination of the GPUNC Emergency Plan with State, County and local emergency plans, the site Security Plan and the site Emergency Public Information Implementing Procedure.
2. Ensuring that the information, data, and procedures detailed in the Emergency Plan Implementing Document are consistent with the guidance provided in the Emergency Plan.
3. Ensuring that the Emergency Plan Implementing Documents are coordinated and interfaced properly with other procedures (e.g., Administrative Procedures, Emergency Operating Procedures).
4. Assisting the Training and Education Department in coordinating and/or providing emergency preparedness related specialty training.
5. Coordinating emergency planning drills and exercises as previously described.
6. Coordinating the review and updating of the Emergency Plan and Implementing Document.
7. Ensuring the maintenance and inventory of emergency equipment and supplies.
8. Maintaining current with respect to changes in federal regulations and guidance that impact emergency planning activities.

8.3 Review and Updating of the Emergency Plan and Implementing Document

The Emergency Plan and Implementing Documents will be reviewed on an annual basis.

The Nuclear Safety Assessment Department is responsible for auditing, in accordance with 10 CFR 50.54 (t) at least once every twelve (12) months, the Emergency Plan and Implementing Document to verify compliance with the Operational Quality Assurance Plan, the Fire Protection Program Plan, internal rules and procedures, federal regulations, and operating license provisions. This audit will be conducted pursuant to the procedures and methods set forth in the Operational Quality Assurance Plan. This audit will focus on the state of emergency readiness (i.e., review of emergency drills, exercises, capabilities and adequacy of interfaces). In addition, the Emergency Preparedness Manager will, by virtue of his involvement with the Emergency Preparedness Program, provide an ongoing review.

This Emergency Plan is considered a part of the TMI-1, TMI-2 and Oyster Creek SARs. Revisions to the Plan shall be administratively controlled consistent with Administrative Procedures 1000-ADM-1218.01, GPU Nuclear Corporation Policies, Plans and Procedures, 1000-ADM-1291.01, GPU Nuclear Safety Review and Approval Procedure, and Emergency Preparedness Dept. Surveillance Procedures.

The site Emergency Plan Implementing Document will be incorporated into the Emergency Preparedness procedures program. As such, the Implementing Document will be prepared, reviewed, approved, controlled, distributed, and revised in accordance with applicable corporate and division procedures. Document holders (e.g., GPU Nuclear, Federal, State and County agencies) will receive revisions to the Emergency Plan Implementing Document in a controlled manner as they are issued.

The Site Emergency Preparedness Manager is responsible for coordinating the periodic reviews and audits of the Emergency Plans and Implementing Documents. In addition, he shall, through letters, meetings, seminars, or other means available, ensure that all elements of the total emergency organization (e.g. GPU Nuclear, Federal, State and County) are informed of the Emergency Plans, the Implementing Documents and revisions thereto.

8.4 Maintenance and Inventory of Emergency Equipment and Supplies

Designated emergency equipment and supplies and their storage locations will be listed in the Emergency Plan Implementing Documents. Such equipment and supplies will be maintained, inventoried, inspected and calibrated in accordance with approved site procedures. Equipment, supplies, and parts having shelf-lives will be checked and replaced as necessary.

Any deficiencies found during the inventory and inspection will be either cleared immediately or documented for corrective action. A report of each inventory and inspection, including documented deficiencies, will be prepared and submitted to the site Emergency Preparedness Manager. He will ensure that cognizant department heads assign personnel to correct deficiencies and shall ensure that identified deficiencies are corrected in a reasonable period of time.

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9.0 RECOVERY

The Emergency Director and Emergency Support Director have the joint responsibility for determining and declaring when an emergency situation is stable and has entered the recovery phase. They will evaluate the status of the emergency by observing monitoring instrumentation and reviewing all current and pertinent data available from emergency response and/or monitoring teams. They shall consider the emergency under control and in the recovery phase only when the following general guidelines are met:

1. Radiation levels in all in-plant areas are stable or are decreasing with time.
2. Releases of radioactive materials to the environment from the plant are under control or have ceased.
3. Containment pressure is at normal levels.
4. Reactor plant is stable and in a long term safe shutdown condition.
5. Any fire, flooding, or similar emergency conditions are controlled or have ceased.

If the above conditions are met, the Emergency Director/Emergency Support Director (ED/ESD) may establish the long term Recovery Organization or close out the emergency. Information pertaining to emergency close-out is typically discussed with the State and NRC.

If all of the above criteria are not met but the plant is proceeding in an orderly fashion towards meeting the above criteria, the ESD/ED may implement a two or three section watchbill, and maintain the emergency response capability at the fully-staffed level; or implement a reduced staffing of the emergency organizations commensurate with plant conditions until recovery or close-out is appropriate. As a minimum, for an Alert all of the onsite emergency response facilities (i.e., ECC, TSC, and OSC) and EACC must remain staffed. As a minimum, for a Site Area or General Emergency all the onsite and offsite emergency response facilities must remain staffed.

Although planning for recovery will vary according to the specific nature of the emergency situation, a long-term recovery organization that is general in nature has been defined based on the normal GPUNC organization.

During recovery operations, the radiation exposure limits of 10 CFR 20 shall apply. Compliance with those limits shall be the responsibility of the Director, Nuclear Services.

At the time of declaring that an emergency has entered the recovery phase, the ED/ESD shall be responsible for providing notification to all applicable agencies (e.g., Federal, State, and County agencies) that the emergency has shifted to a recovery phase.

Recovery actions that plan for, or may result in, radioactive release will be evaluated by the Director, Nuclear Services Division and his staff as far in advance of the event as possible. Such events and data pertaining to the release will be reported to the appropriate offsite emergency response organization and agencies.

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10.0 REFERENCES

10.1 Title 10, Code of Federal Regulations

10.1.1 Part 20, Standards for Protection Against Radiation

10.1.2 Part 50, Licensing of Production and Utilization Facilities

10.1.3 Part 50, Appendix E, Emergency Plans for Production and Utilization Facilities.

10.1.4 Part 73, Physical Protection of Plants and Materials

10.1.5 Part 100, Reactor Site Criteria

10.2 US NRC Order and Notice of Hearing, Docket No. 50-289, dated August 9, 1979

10.3 Section 13.3, Emergency Planning, of Regulatory Guide 1.70, Revision 3, Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants

10.4 NUREG-75/087, Revision 1, US NRC Standard Review Plan

10.4.1 Section 9.5.1, Fire Protection Program

10.4.2 Section 13.3, Emergency Planning

10.5 Regulatory Guide 1.97, Revision 1 dated August 1977, Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident

10.6 US Environmental Protection Agency Manual EPA-400-R-92-001, October 1991, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents

10.7 NUREG-0396, EPA 520/1-78-016, November 1978, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants

10.8 Federal Radiation Council Report No. 7, May 1965, Background Material for the Development of Radiation Protection Standards

10.9 National Council on Radiation Protection Report No. 39, January 15, 1971, Basic Radiation Protection Criteria

10.10 ANS-3.2/ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operations Phase of Nuclear Power Plants

10.11 Regulatory Guide 1.120 Revision 1 dated November 1977, Fire Protection Guidelines for Nuclear Power Plants

10.12 Three Mile Island Nuclear Station Operating License No. DPR 50 (Docket No. 50-289 and 50-320), including:

10.12.1 Appendix A, Technical Specifications (Safety)

10.12.2 Appendix B, Technical Specifications (Environmental) (TMI-2)

10.13 Regulatory Guide 1.16, Revision 4 dated August 1975, Reporting of Operating Information - Appendix A, Technical Specifications

10.14 NUREG-0578 (extracts), July 1979, TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations

10.15 NUREG-0600 (extracts), Investigation into the March 28, 1979 Three Mile Island Accident by Office of Inspection and Enforcement, August 1979

10.16 Three Mile Island Nuclear Station Unit 1 Final Safety Analysis Report

10.17 US NRC Information Report SECY-79-450, dated July 23, 1979, Action Plan for Promptly Improving Emergency Preparedness

10.18 NRC Emergency Planning Review Guideline Number One - Revision One - Emergency Planning Acceptance Criteria for Licensed Nuclear Power Plants, dated September 7, 1979

10.19 Emergency Operations Plan for Ocean County, October 1, 1988

10.20 Commonwealth of Pennsylvania Emergency Operations Plan, Annex E, Radiological Response to Nuclear Power Plant Incidents, December 22, 1988 or as changed

10.21 Department of Environmental Resources, Bureau of Radiation Protection Plan for Nuclear Power Generating Station Incidents, January 1980 (updated October 1988) or as changed

10.22 Dauphin County Emergency Operations Plan, Annex E, 1989 or as changed

10.23 York County Emergency Operations Plan, Annex E, 1989 or as changed

10.24 Lancaster County Emergency Operations Plan, Annex E, 1989 or as changed

10.25 Cumberland County Emergency Operations Plan, Annex E, 1989 or as changed

10.26 NUREG-0728, NRC Incident Response Plan, Revision 1, April 1, 1983.

10.27 Lebanon County Emergency Operations Plan, Annex E, 1989 or as changed

10.28 Three Mile Island and Oyster Creek Nuclear Station Procedures

10.28.1 Administrative Procedures

10.28.2 Radiological Controls Procedures

10.28.3 Emergency Procedures

10.28.4 Security Procedures

10.28.5 Alarm Response Procedures

10.29 NUREG-0654/FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, dated November 1980.

10.30 Pennsylvania Department of Commerce, Bureau of Statistics, 1980 Population data.

10.31 TMI Siren Alert System Performance Evaluation Update and Field Verification, dated March 1982

10.32 Evacuation Time Estimates for the Plume Exposure Pathway EPZ at Three Mile Island Nuclear Generating Facilities.

10.33 Jersey Central Power and Light Company Operating License DPR-16 (Docket No. 50-219), including Technical Specifications

10.34 State of New Jersey Radiological Emergency Operations Standard Operating Procedures

10.35 State of New Jersey Radiological Emergency Response Plan for Nuclear Power Plants Annex B Oyster Creek, Rev. 4, dated August 1987

10.36 Evacuation Time Estimates for the Plume Exposure Pathway EPZ at the Oyster Creek Nuclear Generating Station, dated December, 1991.

10.37 Oyster Creek Nuclear Generating Station Final Safety Analysis Report

10.38 GPU Nuclear Corporation Organization Plan, 1000-PLN-1000.01

10.39 GPUNC Operational Quality Assurance Plan, 1000-PLN-7200.01

10.40 AIF National Environmental Studies Project Document No. AIF/NESP 022, Atmospheric Dispersion Modelling For Emergency Preparedness. October 1981

10.41 1000-POL-1319.01, Emergency Preparedness Policy

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TABLE 1

PERCENT OF LAND USE BY COUNTY

USE	OCEAN	DAUPHIN	YORK	LANCASTER	CUMBERLAND	LEBANON
Forest & Woodland	55.53	48.7	27.8	16.2	29.3	30.1
Crops	0.83	29.6	45.3	61.8	45.6	40.7
Livestock	0.27	N/A	N/A	N/A	N/A	N/A
Pasture	—	3.6	7.6	3	8.2	12.4
Urban	7.27	N/A	N/A	N/A	N/A	N/A
Business	0.89	N/A	N/A	N/A	N/A	N/A
Industrial	2.72	N/A	N/A	N/A	N/A	N/A
Public	17.8	N/A	N/A	N/A	N/A	N/A
Other	17.8	18.1	19.3	18.6	16.9	16.8

N/A Data Not Available

References: Pennsylvania County Data Books (1983, 1984)
PA Department of Commerce, Bureau of Statistics

1977 Survey for Ocean County, Ocean County Planning and Zoning Department.

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TABLE 2A
TMI EMERGENCY ACTION SUMMARY

I. UNUSUAL EVENT

State and/or Local Office Response

1) Provide fire, rescue, ambulance or security assistance if required.

FIRE

Fires of more than 10 minutes in or outside plant structures will receive the following off-site assistance as necessary.

- Londonderry Township Volunteer Fire Co. - Dauphin County
- Rescue Volunteer Fire Co. - Middletown
- Liberty Volunteer Fire Co. - Middletown
- Union Hose Co. #1
- Lower Swatara Fire Co.
- Friendship Fire and Hose Co. #1 - Elizabethtown
- Bainbridge Volunteer Fire Co - Lancaster Co.

EMERGENCY MEDICAL SERVICES

- Londonderry Township - Dauphin County
- Lower Swatara Emergency Medical Services
- Dauphin County Medic 2 (Advanced Life Support)
- Lancaster County Medic 5 (Advanced Life Support)
- Bainbridge Ambulance - Lancaster County

2) Stand by for reclassification or closeout.

GPUNC Response

1) Promptly inform NRC, State and local offsite authorities of nature of unusual condition as soon as discovered.

2) Augment on-shift personnel as needed.

3) Assess and respond.

4) Provide periodic plant status updates to offsite authorities.

- Site Security Force assisted by PA State Police

5) Provide notification for reclassification or closeout. Closeout with verbal summary to offsite authorities.

TABLE 2A (Cont'd)
TMI EMERGENCY ACTION SUMMARY

II. **ALERT**

State and/or Local Office Response	GPUNC Response
(Same Actions as Unusual Event plus actions listed below:)	
1) Notify elected officials.	1) Activate ECC, TSC, OSC, EACC, JIC and other GPUNC emergency response personnel to standby status, as necessary; notify risk counties, PEMA and (using ENS) NRC Headquarters. ♦ For incidents involving radioactive releases, the Operations Support Center Coordinator will dispatch onsite and offsite Radiological/Environmental Survey teams to monitor for possible releases. ♦ The Radiological Assessment Coordinator and the Environmental Assessment Coordinator shall provide for off-site radiation monitoring and plume or purge pathway dose projections.
2) Augment resources and bring primary response centers and Emergency Broadcast System to Standby Status.	2) Assess and respond.
3) Alert to standby status key emergency personnel including monitoring teams and associated communications. The PA Bureau of Radiation protection (BRP) will provide assistance as outlined by the State Plan.	3) Provide periodic plant status updates to offsite authorities.
4) Place route alert teams on advanced state of readiness.	4) Provide periodic radiological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases.
5) Provide confirmatory offsite radiation monitoring and ingestion pathway dose. As outlined in the State Plan, the BRP will provide independent monitoring data for comparison with TMI radiological/ environmental survey teams.	5) Provide notifications for reclassification or closeout; initiate recovery response. Closeout or recommend reduction in emergency class by verbal summary to offsite authorities.
6) Review resources and update "unmet needs" list.	
7) Maintain state of increased readiness for reclassification or closeout.	

TABLE 2A (Cont'd)
TMI EMERGENCY ACTION SUMMARY

III. SITE AREA EMERGENCY

State and/or Local Office Response	GPUNC Response
(Same Actions as previous emergency classes plus those listed below:)	
1) Provide any assistance requested.	1) All emergency response facilities are activated; notifications are made to all risk Counties, PEMA and NRC Headquarters.
2) Activate immediate public notification of emergency status and provide public with periodic updates. ♦ If sheltering near the site is desirable, activate public notification system within at least two miles of the plant. ♦ Provide public within at least about 10 miles periodic updates on emergency status. ♦ Upon receipt of report of a **Site Area Emergency** by PEMA from the TMI Emergency Control Center, the initial alert warning may be disseminated by PEMA to the five affected county EOCs. Actual activation of sirens will be performed by the affected counties. The National Weather Service will activate the tonal alerts upon receipt of instruction to do so by the PEMA duty officer. The five risk counties will prepare and disseminate public information material on protective actions and event status updates. The National Weather Service alert radio and the Emergency Broadcasting System will be used by PEMA to disseminate protection action and update bulletins, as necessary.	2) Activate Media Center and provide status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities). The GPUNC role is described in detail in the Emergency Public Information Procedure(s). 3) Make senior technical and management staff on site available for consultation with NRC and State on a periodic basis. 4) Provide Radiological and dose estimates to offsite authorities for actual releases using a dedicated individual and automated data transmission. 5) Provide release and dose projections based on available plant condition information and foreseeable contingencies. 6) Provide notifications and reclassification or closeout; initiate recovery response. ♦ Escalate to **General Emergency** class, if appropriate or closeout or recommend reduction of emergency class by briefing of offsite authorities at EOF and by phone.
3) Augment resources by activating Emergency Operations Centers.	

TABLE 2A (Cont'd)
TMI EMERGENCY ACTION SUMMARY

III. **SITE AREA EMERGENCY** (Cont'd)

State and/or Local Office Response	GPUNC Response
4) Dispatch key emergency personnel, including monitoring teams, and activate associated communications. The BRP will provide assistance as outlined in the State Plan. **NOTE**: **The Local Services Support** and the **Coordination with Government Agencies** sections of this Plan provide a detailed description of the interface of agencies providing coordinated assistance in the event of a Site Area Emergency.	No Action
5) Alert other emergency personnel (e.g., those needed for evacuation) to standby status and dispatch personnel to near-site duty stations. ◆ The five affected counties, under the direction of PEMA, will provide rapid notification in priority order to county and local government heads, key staff, emergency forces, volunteer organizations, schools, hospitals, nursing homes, business and industry of the incident and possible need for protective action. The affected counties will select locations for and dispatch emergency services to near-site duty stations, including first aid, wrecker, and fuel services. ◆ Place EBS on standby status. ◆ Issue dosimetry, KI and survey meters to emergency personnel. • Place reception and mass care center on standby status.	

TABLE 2A (Cont'd)
TMI EMERGENCY ACTION SUMMARY

III. **SITE AREA EMERGENCY** (Cont'd)

State and/or Local Office Response	GPUNC Response
6) Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already for public and mobilizing evacuation resources. ♦ The Bureau of Radiation Protection will conduct incident assessment, consider protective actions and make recommendations to GPUNC for consideration. The BRP Incident Manager will direct all response team activities, assess and document offsite federal response team data and provide for continued communication to all assessment information to licensee. Further details are available in the State Plan. ♦ The BRP responsibilities include maintaining contact with the licensee, supplementing environmental sampling and analyses and providing situation updating for appropriate state, county and local agencies. It will further be the responsibility of the BRP to alert and advise PEMA Emergency Operations Center through the Bureau representative of the need to take protective action, the actions to be taken, the geographic area at risks, and pertinent facility conditions having influence on incident income, as well as to recommend withdrawal of protective actions. These alerts and advisories will be issued by PEMA to the five affected counties. The counties will advise local agencies of any further actions to be taken. ♦ Provide offsite monitoring results to licensee, DOE and others and jointly assess them.	No Action

TABLE 2A (Cont'd)
TMI EMERGENCY ACTION SUMMARY

III. **SITE AREA EMERGENCY** (Cont'd)

State and/or Local Office Response	GPUNC Response
7) Recommend placing milk-producing animals within 2 miles of the site on stored feed and assess need to extend distance. ◆ The PA Department of Agriculture will advise PEMA, BRP and affected counties on protective actions for livestock including controlled feeding, sheltering and collection and disposal of contaminated farm products.	No Action
8) Provide press briefings, perhaps with GPUNC. ◆ The Communications Director (Press Secretary to the Governor) will establish a press office as principal point of contact in the vicinity of Emergency Operations personnel from appropriate state agencies. In addition, the Press Secretary will serve as a spokesperson who will have access to all necessary information and who will establish arrangements for timely exchange of information between PEMA, GPUNC and all other appropriate information sources.	
9) Maintain **Site Area Emergency** status until closeout or reclassification.	

TABLE 2A (Cont'd)
TMI EMERGENCY ACTION SUMMARY

IV. GENERAL EMERGENCY

State and/or Local Office Response	GPUNC Response
1) Provide any assistance requested.	1) Promptly inform State and offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of a State/Local).
2) Activate process immediate public notification of emergency status and provide public periodic update. ♦ Upon receipt of a report of a **General Emergency** by PEMA from the BRP, the initial alert warning will be disseminated by PEMA to the five affected counties. EOC's actual activation of sirens will be performed by the affected county EOC. ♦ The National Weather Service will activate the tone alerts upon instruction to do so by the PEMA duty officer. The five risk counties will prepare and disseminate public information material on protective actions and event status updates. The National Weather Service alert radio and the Emergency Broadcast System (EBS) will be used by PEMA as a medium for dissemination, protective actions, counties on protective actions and update bulletins.	2) Augment resources by activating all facilities. 3) Assess and respond. 4) Dispatch onsite and offsite monitoring teams and associated communications. 5) Activate media center and provide updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities). 6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis. 7) Provide meteorological and dose estimates to offsite authorities for actual releases using dedicated individual or automated data transmission.
3) It is the responsibility of the BRP to alert and advise PEMA of the need to take protective action, actions to be taken, the geographic area at risk and pertinent facility conditions having influence on incident outcome. Alerts and advisories will be issued by PEMA to state agencies, county and local government.	8) Provide release and dose projections based on available plant condition information and foreseeable contingencies. Recommend a minimum Protective Action Recommendation of sheltering for 2 miles radius and 5 miles downwind and affected sectors and assess need to extend distances. Consider advisability of evacuation (projected time available vs. estimated evacuation time). 9) Closeout of emergency by briefing of offsite authorities at EOF and by phone.

TABLE 2A (Cont'd)
TMI EMERGENCY ACTION SUMMARY

IV. **GENERAL EMERGENCY** (Cont'd)

State and/or Local Office Response	GPUNC Response
4) Augment resources by fully activating all emergency forces and activities. ◆ The five affected counties, under the direction of PEMA, will provide for dispatch of emergency personnel as outlined in each of the give county plans attached as apprentices to the State Plan. PEMA will act as the emergency requirements broker by satisfying unmet needs with state resources and by requesting the Federal Emergency Management Agency to assist in meeting those "unmet needs".	
5) Dispatch key emergency personnel including monitoring teams and associated communications. Dispatch other emergency personnel to duty stations within 5 mile radius and alert all others to standby status. ◆ PEMA has established the procedure for the rapid dissemination of information, the assembly of key personnel and the distribution of equipment. Upon instruction from PEMA the director of the affected county EOC will advise all patrol units of the existing condition. Secondly, the EOC communications center will activate Fire and Ambulance Alert tones and sirens and advise these personnel of the emergency condition in effect. Response of emergency personnel to designated duty stations and standby status will be as outlined in the county plans submitted to PEMA.	
6) Provide off-site monitoring results to licensee, DOE and others and jointly assess them.	

TABLE 2A (Cont'd)
TMI EMERGENCY ACTION SUMMARY

IV. GENERAL EMERGENCY (Cont'd)

State and/or Local Office Response	GPUNC Response
7) Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources.	
8) Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance. ◆ The PA Department of Agriculture will provide advice to PEMA, BRP and affected counties on protective actions for livestock including controlled feeding and sheltering and will assist in the collection and disposal of contaminated farm products.	
9) Provide press briefings, perhaps with licensee.	
10) Maintain General Emergency status until closeout.	

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TABLE 2B
OCNGS EMERGENCY ACTION SUMMARY

CLASS	DESCRIPTION	IMMEDIATE NOTIFICATIONS: ONSITE	IMMEDIATE NOTIFICATIONS: OFFSITE
UNUSUAL EVENT	Events are in process or have occurred which indicate a potential degradation of level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety occurs.	♦ Fire Brigade ♦ Damage Control Teams ♦ Surveillance Watches ♦ Search & Rescue Teams ♦ Monitoring Teams ♦ Security Force ♦ Appropriate Station Personnel	♦ Fire Units ♦ Rescue Assistance ♦ Ambulance Service ♦ Medical Service ♦ NRC ♦ State Police (1) (2)
		IMMEDIATE ACTIONS: ONSITE PERSONNEL	IMMEDIATE ACTIONS: OFFSITE PERSONNEL
		♦ Fight Fire ♦ Perform Emergency Repairs ♦ Designate Surveillance ♦ Administer First Aid ♦ Conduct Rescue Operations ♦ Perform Onsite Monitoring ♦ Suitable Security Measures ♦ Perform Continuing Assessment ♦ Effect Prompt Offsite Notifications	♦ Provide Firefighting Assistance ♦ Assist in Rescue Operations ♦ Provide Medical Transportation ♦ Provide Hospital Medical Treatment
CLASS	DESCRIPTION	IMMEDIATE NOTIFICATIONS: ONSITE	IMMEDIATE NOTIFICATIONS: OFFSITE
ALERT	Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	♦ Fire Brigade ♦ Damage Control Teams ♦ Monitoring Teams ♦ Dose Projection Personnel ♦ Appropriate Station Personnel	♦ Fire Units ♦ NRC ♦ State Police (1) (2)
		IMMEDIATE ACTIONS: ONSITE PERSONNEL	IMMEDIATE ACTIONS: OFFSITE PERSONNEL
		♦ Fight Fire ♦ Perform Emergency Repairs ♦ Onsite and Offsite Monitoring ♦ Offsite Dose Projections ♦ Suitable Security Measures ♦ Effect Prompt Offsite Notifications ♦ Mobilize Onsite Emergency Organization ♦ Perform Continuing Assessment ♦ Activate TSC and OSC	♦ Provide Onsite Assistance as Necessary ♦ Activate Primary Response Centers ♦ Alert Key Personnel to Standby ♦ Maintain Emergency Communications

(1) Notification is required within 15 minutes from declaration of the event.
(2) State Police will make notification to BNE.

TABLE 2B
OCNGS EMERGENCY ACTION SUMMARY

		IMMEDIATE NOTIFICATIONS	
CLASS	DESCRIPTION	ONSITE	OFFSITE
SITE AREA EMERGENCY	Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.	♦ Appropriate Emergency Teams ♦ Security Force ♦ All Other Station Personnel	♦ Appropriate Assistance ♦ NRC ♦ State Police (1) (2)
		IMMEDIATE ACTIONS	
		ONSITE PERSONNEL	OFFSITE PERSONNEL
		♦ Appropriate Corrective and Protection Actions ♦ Onsite and Offsite Monitoring ♦ Offsite Dose Projections ♦ Suitable Security Measures ♦ Effect Prompt Offsite Notifications ♦ Activate TSC, OSC & EOF ♦ Personnel Evacuation as Necessary ♦ Mobilize Appropriate Portions of Offsite Emergency Organizations ♦ Perform Continuing Assessment ♦ Recommend Offsite Protection Actions	♦ Provide Onsite as Necessary ♦ Activate and Man Response Centers ♦ Mobilize Emergency Response Personnel ♦ Continuously Evaluate Dose Projections ♦ Place Public Notification Systems and Procedures Standby Status ♦ Implement Appropriate Nearsite Emergency Protective Measures ♦ Maintain Continuous Emergency Communications
		IMMEDIATE NOTIFICATIONS	
CLASS	DESCRIPTION	ONSITE	OFFSITE
GENERAL EMERGENCY	Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.	♦ Appropriate Emergency Teams ♦ Security Force ♦ All Other Station Personnel	♦ Appropriate Local Assistance ♦ NRC ♦ Ocean County (1) ♦ Ocean Twp. (1) ♦ Lacey Twp. (1)

(1) Notification is required within 15 minutes from declaration of the event.
(2) State Police will make notification to BNE.

TABLE 2B
OCNGS EMERGENCY ACTION SUMMARY

		IMMEDIATE ACTIONS	
		ONSITE PERSONNEL	OFFSITE PERSONNEL
GENERAL EMERGENCY (Cont'd)		♦ Appropriate Corrective and Protective Actions ♦ Onsite and Offsite Monitoring ♦ Offsite Dose Projections ♦ Suitable Security Measures ♦ Effect Prompt Offsite Notifications ♦ Activate TSC, OSC & EOF ♦ Personnel Evacuation as Necessary ♦ Mobilize Total Emergency Organization ♦ Perform Continuing Assessment ♦ Recommend Offsite Protective Actions	♦ Provide Onsite Assistance as Necessary ♦ Fully Staff All Response Centers ♦ Mobilize Emergency Response Personnel ♦ Continuously Evaluate Dose Projections ♦ Implement Public Notification Procedure ♦ Implement Appropriate Offsite Emergency Protective Measures ♦ Maintain Continuous Emergency Communications

(1) Notification is required within 15 minutes from declaration of the event.
(2) State Police will make notification to BNE.

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TABLE 3A
EMERGENCY CLASSIFICATION OF POSTULATED ACCIDENTS (TMI)

ACCIDENT*	EMERGENCY CLASS TMI-1
1) Unanticipated Criticality	Unusual Event
2) Failure to Achieve 1% SDM	Unusual Event
3) Loss of Coolant Flow	Unusual Event
4) Stuck-Out, Control Rod Accident	Unusual Event
5) Loss of Electric Power	Unusual Event
6) Steam Line Failure	Unusual Event
7) Rod Ejection Accident	Alert
8) Small Break Loss of Coolant Accident	Alert
9) Steam Generator Tube Rupture	Alert
10) Fuel Handling Accident	Site Area Emergency
11) Large Break Loss of Coolant Accident	Site Area Emergency
12) Loss of Feedwater	Site Area Emergency
13) Fuel Cask Drop Accident	Site Area Emergency
14) Maximum Hypothetical Accident	General Emergency
15) Waste Gask Tank Rupture	General Emergency

(* Postulated Accidents for Given Conditions from TMI-1 FSAR, 1982 Updated Version)

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TABLE 3B
EMERGENCY CLASSIFICATION OF POSTULATED ACCIDENTS (OCNGS)

ACCIDENT*	EMERGENCY CLASS OCNGS
1) Decrease in Heat Removal by the Secondary System	Unusual Event
◆ Turbine Trip w/o Bypass Valves	
2) Decrease in Reactor Coolant System Flow Rate	Unusual Event
◆ Trip of All (Simultaneous) Recirc. Pumps	
3) Power Distribution Anomalies	
◆ Control Rod Maloperation (System Malfunction or Operator Error)	Unusual Event
◆ Inadvertent Loading and Operation of a Fuel Assembly in an Improper Position	Unusual Event
◆ Control Rod Drop	Unusual Event
4) Increase in Heat Removal by the Secondary System	Site Area Emergency
◆ Steam System Piping Failure Outside Containment	
5) Radioactive Release from a Subsystem or Component	
◆ Waste Gas System Rupture Accident	Site Area Emergency
◆ Radioactive Liquid Waste System Leak or Failure	Site Area Emergency
◆ Radioactive Liquid Tank Failure	Site Area Emergency
◆ Design Basis Fuel Handling Accident in Containment	Site Area Emergency
6) Decrease in Reactor Coolant Inventory	General Emergency
◆ Loss of Coolant	

(* Postulated Accidents for Given Conditions from OCNGS FSAR, 1985 Updated Version)

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TABLE 4A
PLANT INSTRUMENTATION FOR ACCIDENT DETECTION (TMI)

ACCIDENT	INSTRUMENTATION
I. TMI-1	
1. Unanticipated Criticality	♦ Equipment Status Lights (i.e., Valve Position) ♦ Reactor Average Temperature ♦ Hot Leg Temperature ♦ Cold Leg Temperature ♦ Power Range Monitor/Source Range ♦ Reactor Coolant Pressure ♦ Pressurizer Level
2. Loss of Shutdown Margin	♦ Source Range Monitor ♦ Reactor Average Temperature ♦ Reactor Coolant Pressure ♦ Hot Leg Temperature
3. Loss of Coolant Flow	♦ Total Reactor Flow ♦ Loop Flow
4. Stuck-Out, Control Rod	♦ Power Range Monitor ♦ Reactor Average Temperature ♦ Reactor Pressure ♦ Control Rod Position Indication
5. Loss of Electric Power	♦ In-Plant Bus Voltmeters ♦ Switchyard Bus Voltmeters
6. Steam Line Failure	♦ Main Steam Pressure ♦ Steam Generator Level ♦ Reactor Coolant Pressure ♦ Power Range Monitor
7. Rod Ejection Accident	♦ Power Range Monitor ♦ Reactor Coolant Pressure ♦ Pressurizer Level ♦ Reactor Building Pressure
8. Small Break Loss of Coolant	♦ Reactor Coolant Pressure ♦ Pressurizer Level ♦ Reactor Building Hi Range Radiation Monitor ♦ Reactor Building Stack Atmospheric Monitor
9. Steam Generator Tube Failure	♦ Reactor Coolant Pressure ♦ Steam Generator Level ♦ Condenser Exhaust Atmospheric Monitor

TABLE 4A
PLANT INSTRUMENTATION FOR ACCIDENT DETECTION (TMI)

ACCIDENT	INSTRUMENTATION
2. TMI-1	
10. Fuel Handling Accident	◆ Fuel Handling Bridge Aux. Radiation Monitor ◆ Fuel Handling Bridge Main Radiation Monitor ◆ Fuel Handling Building Atmospheric Monitor ◆ Aux. & Fuel Handling Building Stack
11. Large Break Loss of Coolant	◆ Reactor Building Pressure ◆ Reactor Coolant Pressure ◆ Reactor Building Hi Range Radiation Monitor ◆ Reactor Building Stack Atmospheric Monitor
12. Loss of Feedwater	◆ Reactor Coolant Pressure ◆ Reactor Average Temperature ◆ Pressurizer Level ◆ Steam Generator Pressure ◆ Steam Generator Level
13. Fuel Cask Drop	◆ Fuel Handling Building Atmospheric Monitor ◆ Aux. & Fuel Handling Building Stack
14. Maximum Hypothetical Failure	◆ Reactor Building Pressure ◆ Reactor Building Stack Atmospheric Monitor ◆ Reactor Building Hi Range Radiation Monitor
15. Waste Gas Tank Rupture	◆ Area Gamma Monitor - Aux. Building Entrance Elevation 305 Ft. ◆ Auxiliary Building Atmospheric Monitor ◆ Waste Gas System Exhaust Monitor

TABLE 4B
PLANT INSTRUMENTATION FOR ACCIDENT DETECTION (OCNGS)

ACCIDENT	INSTRUMENTATION
II. OCNGS	
1. Turbine Trip w/o Bypass Valves	♦ Reactor Pressure Indicator ♦ Reactor Level Indicator ♦ Turbine Supervisory ♦ Steam Flow Indicator ♦ Power Range Monitor
2. Trip of All Recirculating Pumps	♦ Recirc. Flow Indicators ♦ Power Range Monitors ♦ Reactor Level Indicator ♦ Steam Flow Indicator ♦ Reactor Pressure Indicators
3. Control Rod Maloperation Control Rod Drop	♦ Stack Gas Monitors ♦ Steam Line Radiation Monitors ♦ Off-Gas Monitors ♦ Power Range Monitors ♦ Reactor Level Indicators ♦ Reactor Pressure Indicators ♦ Feed Water Flow Inidcators ♦ Steam Flow Indicator ♦ MSIV Position Indicators
4. Inadvertent Loading & Operation of a Fuel Assembly in an Improper Position	♦ Area Radiation Monitors ♦ Reactor Building Ventilation Rad Monitors ♦ Standby Gas Treatment System Instrumentation ♦ Stack Gas Monitor
5. Steam System Piping Failure Outside Containment	♦ Stack Radiation Monitors ♦ Area Radiation Monitors ♦ MSIV Position Indicators ♦ Drywell Pressure/Containment ♦ Pressure Indicators ♦ ECCS Instrumentation ♦ Reactor Water Level Indicator ♦ System Pressure Indicators
6. Radioactive Release from a Subsystem or Component	♦ Area Radiation Monitors ♦ Turbine Building Ventilation Radiation Monitors ♦ Stack Gas Monitor ♦ Standby Gas Treatment System Instrumentation

TABLE [illegible]
PLANT INSTRUMENTATION FOR ACCIDENT DETECTION (OCNGS)

ACCIDENT	INSTRUMENTATION
#. OCNGS	
7. Loss of Coolant	◆ Stack Gas Monitors ◆ Area Radiation Monitors ◆ Reactor Building Ventilation Monitors ◆ Standby Gas Treatment Inst. ◆ Reactor Water Level ◆ ECCS Instrumentation ◆ Drywell Humidity Indicator ◆ Drywell Pressure/Containment Pressure Indicator ◆ Torus Water Level Indicator ◆ Drywell Monitors (CHRRMS) ◆ Containment Hydrogen Monitors

TABLE 5: ON-SHIFT EMERGENCY ORGANIZATION STAFFING
(Available Immediately)

SHIFT POSITION	NO. IN	ASSUMES DUTIES OF	EMERGENCY DUTIES	REPORT TO LOCATION/CHANGE
(1) Shift Supervisor	1	Emergency Director	Initially assumes the duties of the Emergency Director which includes the initial assessment and evaluation of any abnormal or emergency situation and for directing appropriate response in accordance with the emergency plan implementing procedures. (TMI - upon being properly relieved, he may assume the Operations Coordinator position).	ECC/Plant Management ECC/Duty Roster Operations Coordinator upon relief (TMI Only)
(2) *Shift Foreman (TMI) Group Operating Supervisor (OCNGS)	1	Operations Coordinator	Retains his normal duties of directing the Control Room Operators in maintaining control over the plant.	ECC/ED (ECC/Shift Supervisor upon relief)
*Shift Technical Advisor	1	Shift Technical Advisor	Retains his normal duties of advising and assisting the Emergency Director on plant conditions.	ECC/ED
Control Room Operator (CRO) (TMI & OCNGS)	2	Control Room Operator	Retains his normal duties of operating and controlling the Plant as directed.	ECC/Operations Coordinator
*CRO #2 (TMI) CHO (OCNGS)	1	ECC Communications Coordinator	Assumes the duties of the ECC Communications Coordinator which includes making notifications to offsite agencies. Once properly relieved, he will be used to support the emergency.	ECC/Emergency Director (CRO-ECC/Ops Coordinator upon relief) (AO/EO-OSC/OSC Coordinator upon relief)
Shift Maintenance Personnel (TMI)	1	ECC Communicator	Assumes the duties of ECC Communicator which includes callout of emergency personnel.	ECC/ED (TMI)
(3) Security Personnel (OCNGS)				Main Gate/ED (OCNGS)
Auxiliary Operators (AO) (TMI)	4	Auxiliary Operators	Will be used to support the emergency.	ECC/Shift Foreman/GOS Coordination through OSC upon activation
Equipment Operators (OCNGS)	1	Equipment Operators		
Group Radiological Controls Supervisor (TMI and OCNGS)	1	Radiological Assessment Coordinator (RAC)	Initially assumes the duties of the RAC which includes providing all radiological assessment (onsite and offsite) to the Emergency Director. Once properly relieved, he may assume the duties of the Radiological Controls Coordinator and report to the RAC.	ECC/Emergency Director (OSC/RAC - upon relief)

* Required only for Hot Operations (200°F)
(1) This position includes Shift Supervisor at TMI and Group Shift Supervisor at OCNGS.
(2) This position includes Shift Foreman at TMI and Group Operating Supervisor at OCNGS.
(3) This position calls out emergency personnel only.

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TABLE 5: ON-SHIFT EMERGENCY ORGANIZATION STAFFING
(Available Immediately)

SHIFT POSITION	MIN. NO.	ASSUMES DUTIES OF	EMERGENCY DUTIES	REPORT TO LOCATION/PERSON
Senior Radiological Controls Technician (TMI and OCNGS)	1	Radiological Controls Coordinator (RCC)	Initially assumes the duties of the SCE which includes supervising the Radiological Controls technicians and coordinating the in-plant radiological controls support for access control, emergency repair, search and rescue, firefighting, personnel monitoring and dosimetry. Once properly relieved, he will assume the duties of the Radiological Controls Technician and support emergency radiological controls functions as directed by the RCC.	OSC/RAC (OSC/RCC - upon relief)
Radiological Controls Technicians (TMI and OCNGS)	2	Radiological Controls Technicians	Retain their duties for radiological controls support in the areas of access control, emergency repair, search and rescue, first aid, firefighting, personnel monitoring and radiological monitoring as directed.	OSC/RCC
Chemistry Technician (TMI and OCNGS)	1	Chemistry Coordinator	Responsible for providing chemistry sampling and analysis to support the existing plant conditions and if appropriate to initiate activities to obtain and analyze post accident samples. Assumes the duties of Chemistry Coordinator until properly relieved.	OSC/OSC Coordinator (OSC/Chemistry Coordinator - upon relief)
Shift Maintenance Foreman (TMI)	1	Operations Support Center (OSC) Coordinator	Initially assumes the duties of the OSC Coordinator which includes supporting emergency operations in the areas of emergency repair, search and rescue, chemistry, firefighting and maintenance. Once properly relieved, he may assume the duties of the Emergency Maintenance Coordinator and direct the maintenance technicians in plant repair and corrective actions.	OSC/Operations Coordinator (OSC/OSC Coordinator - upon relief)
Shift Maintenance Foreman or Radwaste Supervisor (OCNGS)	1			
Senior Maintenance Technician	1	Senior Maintenance Person	Assumes the duties of the Senior Maintenance Person. Provides support to the OSC Coordinator for emergency maintenance repair and corrective actions.	OSC/OSC Coordinator
Maintenance Personnel (TMI)	3	Emergency Maintenance Team	Retain their duties of performing all emergency maintenance repair and corrective actions. May be called on for search and rescue and as drivers for Radiation Monitoring teams. In addition maintenance personnel at TMI, will be used to make callouts of emergency response personnel.	OSC/Emergency Maintenance Coordinator
Maintenance Personnel (OCNGS) or Equipment Operator (OCNGS)	1			

* Required only for Hot Operations (200°F)
(1) This position includes Shift Supervisor at TMI and Group Shift Supervisor at OCNGS.
(2) This position includes Shift Foreman at TMI and Group Operating Supervisor at OCNGS.
(3) This position calls out emergency personnel only.

TABLE 5
ON-SHIFT EMERGENCY ORGANIZATION STAFFING
(Available Immediately)

SHIFT POSITION	NUMBER	ASSUMES DUTIES OF	EMERGENCY DUTIES	REPORT TO LOCATION/PERSON
Site Protection Shift Supervisor/Designated Senior site Protection Officer	1	Security Coordinator	Assumes the duties of the Security Coordinator which includes directing the security force accountability, access control and interfaces with the Local Law Enforcement Agencies/EOD.	Central Alarm Station (TMI) Processing Center (Main Gate OC)/Operations Coordinator.
Site Security Force	Per Sec. Plan	Security Personnel	Retain their duties of maintaining site security and implementing accountability, site evacuation and support search and rescue functions. At OCNGS, are responsible for mobilizing GPUN emergency response personnel.	As Directed/Security Coordinator
**Fire Brigade	Per T.S.		Respond to all fire alarms and report to fire locations with assigned equipment to combat the fire and assess the need for offsite firefighting support.	Fire Scene/Fire Brigade Leader
**First Aid and Rescue Team (TMI and OCNGS)	2		Provide emergency first aid and assist in rescue operations.	OSC/OSC Coordinator
**Emergency Maintenance Team (TMI and OCNGS)			(As stated Above)	
**Radiological/ Environmental Survey Teams TMI and OCNGS)	2		Obtain emergency equipment and vehicle and proceed to areas designated by the RAC/EAC to perform radiological and environmental surveys.	Onsite - OSC/RAC Offsite - EACC/EAC

** These personnel may be assigned other functions.

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TABLE 5: ON-SHIFT EMERGENCY ORGANIZATION STAFFING
(Available Immediately)

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TABLE 8: INITIAL RESPONSE EMERGENCY ORGANIZATION STAFFING
(Available Within One Hour)

EMERGENCY POSITION	MIN. NO.	MINIMUM LEVEL OF EXPERTISE	EMERGENCY DUTIES	REPORT TO LOCATION/PERSON
** Emergency Director	1	Senior Management Personnel	Responsible for initial assessment and evaluation of any abnormal or emergency situation and for directing appropriate response in accordance with the Emergency Plan Implementing Procedures.	ECC/Emergency Support Director (TMI) TSC/Emergency Support Director (OCNGS)
** ED Assistant	1	Engineer or individual with equivalent combination experience/education.	Advises and assists the Emergency Director in matters pertaining to communications, onsite personnel assembly, security and public information.	ECC/Emergency Director (TMI) TSC/Emergency Director (OCNGS)
Operations Coordinator	1	Current or previously qualified Senior Reactor Operator	Coordinates plant operations, maintenance and chemistry through the Shift Foreman* and Operations Support Center Coordinator.	ECC/Emergency Director
Technical Support Center Coordinator	1	Engineer or individual with equivalent combination engineering experience/ education.	Directors the TSC engineers in plant technical assistance and acts as liaison between Parsippany Technical Functions and the Emergency Director.	TSC/Emergency Director
** Radiological Assessment Coordinator	1	Senior Radiological Controls experienced person.	Coordinates and directs all Rad Con support and operations.	ECC (TMI), Emergency Director TSC/Emergency Director (OCNGS)
** Radiological Engineering Support	1	Radiological Controls Experienced Personnel	Assist the Radiological Assessment Coordinator in performing his duties. Insure communications with the BRP (TMI)/BNE (OC) until the EOF staff assumes that function.	ECC (TMI)/RAC TSC/RAC (OCNGS)
ECC Communications Coordinator	1	Site Personnel	Provides current information and direction to the ECC Communicators; ensures proper records and logs are maintained.	ECC/ED Assistant (TMI and OCNGS)
ECC Communicators	2	Site Personnel	Responsible for maintaining communications with the NRC on the ENS line; makes follow-up notifications to offsite agencies; maintains primary emergency communications using the Operations Line; monitors other emergency circuits as directed by the ECC Communications Coordinator.	ECC (TMI and OCNGS) ECC Communications Coordinator
Technical Support Center Engineer	3	Assorted Discipline Engineer or equivalent engineering experience/ education (e.g., I&C, Mechanical, Electrical)	Activate TSC, assess plant status, recommend mitigation actions, and provide technical support in the areas of core, electrical, mechanical, and I&C.	TSC/TSC Coordinator

* "Shift Foreman" includes Shift Foreman at TMI, Group Operating Supervisor at OCNGS).
** This position reports to the TSC for Oyster Creek.

TABLE 8: INITIAL RESPONSE EMERGENCY ORGANIZATION STAFFING
(Available Within One Hour)

EMERGENCY FUNCTIONS	#	MINIMUM LEVEL OF EXPERTISE	RESPONSIBILITIES	REPORTS TO LOCATION/FUNCTIONAL
Operations Support Center Coordinator	1	Senior Maintenance or Operations Experienced Person.	Coordinates and directs emergency logistic activities to support Operations in the area of Chemistry, Rad Con and Maintenance.	OSC/Operations Coordinator
Emergency Maintenance Coordinator	1	Senior Maintenance Tech. Maint. Supv./Foreman (OCNGS)	Assigns personnel and directs emergency maintenance repair and corrective actions.	OSC/OSC Coordinator
Radiological Controls Coordinator	1	Radiological Controls Technician	Responsible for supervising Radiological Controls Technicians and coordinating the on-site and in-plant radiological controls support for activities such as access control, emergency repair, search and rescue.	OSC/RAC
Chemistry Coordinator	1	Chemistry Technician	Responsible for coordinating chemistry activities to support the existing plant conditions, and, if appropriate, for ensuring that all post-accident samples are obtained and analyzed.	OSC/OSC Coordinator
Emergency Assembly Area Coordinator	1	Site Personnel	Directs assembly and sign-in of site personnel at the onsite emergency assembly area.	Emergency Assembly Area (EAA)/ED Assistant
Security Coordinator	1	Site Protection Shift Supervisor/designated Senior Site Protection Officer	Responsible for the overall security response during an emergency. Coordinates the activities of the Site Protection Shift Supervisor and Local Law Enforcement Agencies/EOD.	Command Center (TMI)/ED Assistant Processing Center (Main Gate OCNGS)/ED Assistant
Medical Representative	1	Medical Personnel/EMT	Responsible for providing first aid support.	OSC/OSC Coordinator (OCNGS) Medical Facility/OSC Coordinator (TMI)
** Public Information Representative	1	Media Trained Personnel	Responsible for getting emergency information from the ECC personnel for ultimate dissemination to the public in coordination with public information personnel assigned to other locations.	ECC/ED Assistant (TMI) TSC/ED Assistant (OCNGS)

* 'Shift Foreman' includes Shift Foreman at TMI, Group Operating Supervisor at OCNGS).

** This position reports to the TSC for Oyster Creek.

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TABLE 7
EMERGENCY SUPPORT ORGANIZATION STAFFING

EMERGENCY POSITION	MIN. NO.	MINIMUM LEVEL OF EXPERTISE	EMERGENCY DUTIES	REPORT TO LOCATION/ROOM
+ Emergency Support Director (ESD)	1	Senior Management Representative	Responsible for overall management of emergency response and directs the response of the offsite organization functional groups in support of the onsite emergency organization.	EOF/Office of President
+ ESD Assistant	1	Management or Senior Staff Personnel	Advises and assists the Emergency Support Director in matters pertaining to communications, technical support, implementation of the Emergency Plan and public information.	EOF/ESD
+ Group Leader-Radiological and Environmental Controls (R&EC)	1	Radiological and Environmental Controls Management Personnel	Functions as the "point of contact" for radiological and environmental controls information for the ESD; collects information from the RAC and EAC and, presents that information to ESD; overall-in-charge of R&EC effort.	EOF/ESD
Group Leader-Technical Support	1	Technical Functions Management Person	Responsible to provide technical support to the plant when the PTFC is activated; advises the TSC Coordinator with respect to plant conditions through the TSC.	PTFC/ESD
Group Leader Administrative Support	1	Management Personnel	Responsible for administrative and logistic functions required to support the emergency organization. These services include: General Administration, Communications, Security, Accommodations, Commissary, Safety and Human Resources.	EOF/ESD
+ Emergency Preparedness Representative	1	Management or Staff Personnel	Provides ESD with information relating to onsite, offsite and state emergency facilities, communications, personnel and resources availabilities and procedure requirements.	EOF/ESD Assistant
+ EOF Communications Coordinator	1	Site Personnel	Responsible for the operation of the communications systems at the EOF and the coordination of requests for outside assistance. Ensure that the primary and back-up communications systems are activated and operational. Maintains records of communication and status boards.	EOF/ESD Assistant
+ EOF Communicators	2	Site Personnel	Responsible to maintain communications with the site and offsite agencies, as needed, make additional notifications, as necessary and receive incoming calls.	EOF/EOF Communications Coordinator

+ This position will report to the EOF within one (1) hour upon notification of a Site Area or General Emergency or when requested.
+ This position will report to the EOF/EACC within (1) hour upon notification of an Alert, Site Area or General Emergency.
Note: Staff and group members will be assigned by their respective Group Leaders/Coordinators who will also assign their training and ensure their availability during an emergency.

TABLE 7: EMERGENCY SUPPORT ORGANIZATION STAFFING

TABLE 7
EMERGENCY SUPPORT ORGANIZATION STAFFING

[illegible]	[illegible]	[illegible]	[illegible]
+ Public Information Representative	1	Media Trained Personnel	Responsible for getting emergency information from the EOF personnel for ultimate dissemination to the public in coordination with public information personnel assigned to other locations.	EOF/ESD Assistant
+ Technical Support Representative	1	Operations or Engineering Experienced Person	Provides technical liaison to the ESD Assistant from the Group Leader-Technical Support in Parsippany and the onsite Technical Support Center Coordinator. Monitors the Operations Line and/or Technical Functions Line in order to obtain real time operational status from the ECC Communicator and relays this information to the ESD Assistant and the Group Leader-Technical Support.	EOF/Group Leader Technical Support
Radiological Controls Support Coordinator	1	Personnel with Radiological Controls Experience.	Responsible for radiological controls support in the areas of manpower, personnel monitoring and radiological equipment. He interfaces with RAC[illegible] monitors communications on the Operations and Radiological Lines to determine emergency status, manpower and equipment needs.	AEOF/Group Leader - R&EC
Site Services Coordinator	1	Management or Senior Staff Personnel	Senior person in charge at the AEOF. Provides additional maintenance personnel, equipment, transportation and facilities support, as needed.	AEOF/Group Leader-Admin. Support
++ Environmental Assessment Coordinator (EAC)	1	Environmental Controls Manager or Scientist/Management Person with Radiological Controls Experience	Responsible for the Radiological Environmental Monitoring Program. When the EACC is activated, assumes control of the offsite radiological monitoring and environmental assessment from the Radiological Assessment Coordinator. Communicates with monitoring teams and the Radiological Assessment Coordinator and reports findings and projections to the Group Leader-R&EC at the EOF.	EOF/Group Leader-R&EC
Access Center Coordinator	1	Site Personnel	Responsible for processing and badging of personnel at the AEOF requiring site access.	AEOF/Group Leader-Admin. Support
++ Met/Dose Coordinator	1	Environmental Controls Scientist/Management Person with Radiological Controls Experience	Coordination collection of meteorological data for use in developing dose projections and/or weather forecast, and advises EAC regarding implications these may have on protective action recommendations.	EOF/EAC

\+ This position will report to the EOF within one (1) hour upon notification of a Site Area or General Emergency or when requested.
++ This position will report to the EOF/EACC within (1) hour upon notification of an Alert, Site Area or General Emergency.
Note: Staff and group members will be assigned by their respective Group Leaders/Coordinators who will also assign their training and ensure their availability during an emergency.

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TABLE 7: EMERGENCY SUPPORT ORGANIZATION STAFFING

TABLE 7
EMERGENCY SUPPORT ORGANIZATION STAFFING

EMERGENCY POSITION	POS. NO.	PROGRAM LEVEL OF EXPERTISE	EMERGENCY DUTIES	REMARKS TO LEADERSHIP
Joint Information Center Presiding Media Briefer	1	Media Trained Personnel	Leads and coordinates news media briefings and the release of information on an emergency.	Media Center/Coordinates with Director of Communications or Designee per Implementing Document. Communications at Joint Information Center.

\+ This position will report to the EOF within one (1) hour upon notification of a Site Area or General Emergency or when requested.
\+ + This position will report to the EOF/EACC within (1) hour upon notification of an Alert, Site Area or General Emergency.
Note: Staff and group members will be assigned by their respective Group Leaders/Coordinators who will also assign their training and ensure their availability during an emergency.

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TABLE 8A

INVENTORY OF THREE MILE ISLAND EMERGENCY KITS BY GENERAL CATEGORY

I. RADIATION MONITORING

A. Typical Contents

1. Full Face Respirators with Canisters
2. Survey Instruments - Radiation Survey Meters, Countrate Meters
3. Dosimetry Equipment - Dosimeters/Chargers
4. Protective Clothing
5. Air Sampler and Cartridges
6. Support Materials - Paper, Pencils, Envelopes, Maps, Procedures, Etc.

II. FIRST AID

A. Minor Injury

1. Contain items typically needed for minor injuries.
2. Placed throughout Plant.

B. Employee Kits

1. Contain sufficient quantities to serve expected needs of approximately 100 employees. **Note:** Locations as determined by Medical Department.

    a. Stretchers
    b. Employee size first aid kits

C. First Aid and Medical Facility

1. Equipment inventory to support professional medical treatment.
2. Contains equipment necessary for examination of patients.

TABLE E8A (Cont'd)

INVENTORY OF THREE MILE ISLAND EMERGENCY KITS BY GENERAL CATEGORY

III. DAMAGE CONTROL

A. Typical Equipment Available

1. Hand tools
2. Cutting/Welding equipment
3. Patching materials
4. Portable blowers
5. Submersible pumps
6. Electrical equipment
7. Rigging equipment

TABLE E8

INVENTORY OF OYSTER CREEK EMERGENCY KITS BY GENERAL CATEGORY

I. EMERGENCY RAD CON EQUIPMENT

A. Typical Contents

1. Full Face Respirators with Canisters
2. Survey Instruments - Radiation Survey Meters, Counter Scalers
3. Dosimetry Equipment - Dosimeters/Chargers
4. Protective Clothing
5. Air Sampler and Cartridges
6. Support Materials - Maps and Procedures, Etc.

II. EMERGENCY MONITORING EQUIPMENT

A. Typical Contents

1. Full Face Respirators with Canisters
2. Survey Instruments - Radiation Survey Meters, Counter Scalers
3. Dosimetry Equipment - Dosimeters/Chargers
4. Protective Clothing
5. Air Sampler and Cartridges
6. Support Materials - Maps and Procedures, Etc.

III. EMERGENCY CHEMISTRY EQUIPMENT

1. Remote Handling Tool
2. Sample Vials
3. Particulate Filter Cask
4. Iodine Cartridge Cask
5. Noble Gas Sample Cask

TABLE B8 (Cont'd)

INVENTORY OF OYSTER CREEK EMERGENCY KITS BY GENERAL CATEGORY

IV. DAMAGE CONTROL

A. Typical Equipment Available

1. Hand tools
2. Cutting/Welding equipment
3. Patching materials
4. Submersible pumps
5. Electrical equipment
6. Rigging equipment

V. EMERGENCY FIRST AID AND RESCUE EQUIPMENT

1. Splints
2. Bandages
3. Stretchers

TABLE 9

TYPICAL ENVIRONMENTAL/RADIOLOGICAL MONITORS

INSTRUMENTATION	PURPOSE
1. THREE MILE ISLAND	
a. Pressurized Ionization Chamber (PIC)	Gamma Radiation
b. Thermoluminescent Dosimeters (TLD)	Beta, Gamma Radiation
c. Geiger Mueller Detectors	Betta, Gamma Radiation
d. Gamma Detectors	Gamma Isotopic Analysis
e. Meteorological Tower	Wind Speed and Direction, Temperature
f. Air Samplers	Analysis for Airborne Radiolodine and Particulates
g. Environmental Sampling Equipment	Environmental Media Sampling
2. OYSTER CREEK	
INSTRUMENTATION	**PURPOSE**
a. Meteorological Tower	Wind Speed and Direction, Temperature
b. Air Samplers	Analysis for Airborne Radiolodine and Particulates
c. Environmental Sampling Equipment	Environmental Media Sampling
d. Pressurized Ionization Chamber (PIC)	Gamma Radiation
e. Thermoluminescent Dosimeters (TLD)	Beta, Gamma Radiation
f. Geiger Mueller Detectors	Beta, Gamma Radiation

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TABLE 10
GPUNC EMERGENCY RESPONSE/ADDITIONAL SUPPORT FACILITIES

FACILITY	SITE	LOCATION	SPECIAL FEATURES
ECC	TMI	TMI-1 Control Tower, 355.0' El.	HEPA Filtered Vent. System w/Recirc. Capability Cont. Air Monitor
	OCNGS	Turbine Building 46' El.	———
TSC	TMI	TMI-1 Control Bldg. 322' El.	Located in remote shutdown area within control room ventilation system boundary; available instrumentation needed to monitor plant status for safe shutdown including CRT, printer and patch board; equipped with area gamma and airborne monitors.
	OCNGS	Site Emergency Bldg.	HEPA and Charcoal Filtered Ventilation System and continuous air monitors and radiation monitor.
OSC	TMI	TMI-1 Control Tower 306' El.	Located within control tower ventilation system boundary
	OCNGS	Drywell Processing Center	———
EAA	TMI	Warehouse #1 and Warehouse #3	———
	OCNGS	Materials Management Warehouse	———
EOF	TMI	Commerce Park, Harrisburg	Nearby helicopter landing capability, location for BRP and NRC liason representatives, provisions for other state and county representatives as needed; CRT capability similar to TMI TSC; located approximately 12 miles from the site.
	OCNGS	Lakewood, N.J.	Located in the Pine Land Division Office approximately 18 miles from the site; location for BNE and NRC liason representatives.
AEOF	TMI	Middletown, PA	Primary emergency location for offsite maintenance, security and radiological controls support.
	OCNGS	Forked River Site	Building 14 will function as an expanded support facility providing radiological controls support, medical and security processing.
Media Center/ JIC	TMI	Harrisburg, PA	———
	OCNGS	Brick Township, N.J.	———
RAA	TMI	Middletown Line Dept. (AEOF) Training Center	———
	OCNGS	Berkley Line Station	———

TABLE E10
GPUNC EMERGENCY RESPONSE/ADDITIONAL SUPPORT FACILITIES

FACILITY	SITE	LOCATION	SPECIAL FEATURES
PTFC	TMI	Parsippany, N.J.	
	OCNGS		
EACC	TMI	Co-located in the Emergency Operations Facility at both sites.	
	OCNGS		

TABLE 11

COUNTY, STATE AND FEDERAL EMERGENCY OPERATIONS CENTERS

SITE	EOC LOCATION
TMI	Dauphin County - Harrisburg
TMI	Lancaster County - Manheim
TMI	York County - York
TMI	Cumberland County Prison - Carlisle
TMI	Lebanon County - Lebanon County Court House, Lebanon
TMI	State PEMA Headquarters, Transportation Building, Harrisburg
TMI	Federal Capital City Airport; (Includes Communcations ties with PA BRP)
OCNGS	Ocean County - Miller Air Park, Berkeley Township
OCNGS	State Police - State Police Division Headquarters, West Trenton

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TABLE 12A
TMI EMERGENCY COMMUNICATIONS NETWORK

CIRCUIT	CIRCUIT TYPE	*COMMUNICATOR	INFORMATION TRANSMITTED	ALTERNATE COMMUNICATIONS
TMI/Bur. of Radiation Protection Line	Touch Tone	a) TMI ECC (RAC) b) EOF c) BRP	Plant status and radiological information	Conventional Telephones
Emergency Director's Line	Auto-Ring	a) TMI ECC b) EOF	ED/ESD communications and consultation	Emergency Management line, conventional telephones
Emergency Management Line	Touch Tone	a) TMI ECC b) TMI TSC c) TMI OSC d) EOF e) AEOF f) PTFC g) GPU Headquarters	ED/ESD communications with all emergency response facilities	Conventional Telephones
Environmental Assessment Line	Touch Tone	a) TMI ECC (RAC) b) EACC	Source term, in-plant radiological conditions, dose projections	Radiological line, BRP line, Conventional Telephones
In-Plant Rad Con Line	Auto-Ring	a) TMI ECC (RAC) b) TMI OSC	In-Plant radiological controls dispatch of Rad Con personnel	Radiological line, Conventional Telephones
Notification Line	Touch Tone	a) TMI ECC b) EOF	Official Notifications (e.g., initial notifications, reclassifications, termination of the event)	Conventional Telephones
NRC Intra-Communications Line	Touch Tone	a) TMI ECC b) TMI TSC NRC c) TMI OSC d) EOF	Exclusive use by NRC	Conventional Telephones
Operations Line	Touch Tone	a) TMI ECC b) TMI TSC c) TMI OSC d) EOF e) AEOF	ED/Ops Coordinator inplant response and status reports	Conventional Telephones
TMI - B&W Lines	B&W System, Touch Tone	a) TMI ECC b) TMI TSC c) B&W - Lynchburg d) B&W - TMI Site	Nuclear steam supply system response and recovery	Conventional Telephones
Radiological Line	Touch Tone	a) TMI ECC (RAC) b) EOF c) AEOF d) TMI OSC	In-Plant radiological conditions and concerns	Conventional Telephones
Chemistry Line	Auto-Ring	a) TMI Chem Foreman's Office b) PTFC	Plant Chemistry information	Conventional Telephones

* Communications are assigned duty roster personnel and facility staff designated by the Facility Coordinator/Group Leader.

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TABLE 12A
TMI EMERGENCY COMMUNICATIONS NETWORK

CIRCUIT	CIRCUIT TYPE	*COMMUNICATOR	INFORMATION TRANSMITTED	ALTERNATE COMMUNICATIONS
Technical Functions Line	Touch Tone	a) TMI ECC b) PTFC c) TMI TSC d) EOF	Technical Engineering discussions	Conventional Telephones
NRC Emergency Notification System (ENS)	Touch Tone	a) TMI ECC b) TMI TSC c) EOF d) NRC Operations Center	Plant Status information	Conventional Telephones
NRC Health Physics Network (HPN)	Touch Tone	a) TMI ECC (RAC) b) EOF c) NRC Operations Center d) NRC Region I	Radiological information	Conventional Telephones
Off-site Notification Auto-dialer	Touch Tone	a) TMI ECC	Emergency notifications	Conventional Telephones
Radio Communications		a) Certain onsite locations b) Mobile units	Communications to mobile units and backup to telephone system	
EOF/BRP Line	Auto-Ring	a) EOF b) BRP	Radiological conditions/PARs	Conventional Telephones

* Communications are assigned duty roster personnel and facility staff designated by the Facility Coordinator/Group Leader.

TABLE 12B
OCNGS EMERGENCY COMMUNICATIONS NETWORK

CIRCUIT	CIRCUIT TYPE	*COMMUNICATOR	INFORMATION TRANSMITTED	ALTERNATE COMMUNICATIONS
Operations Line	Touch Tone or Head Set	a) ECC b) TSC c) OSC d) EOF	ED/Ops Coordinator inplant response and status reports	Conventional Telephones
Radiological Line	Touch Tone	a) ECC b) TSC c) OSC d) EOF e) AEOF	In-Plant radiological conditions and concerns	Conventional Telephones
Technical Functions Line	Touch Tone	a) ECC b) TSC c) EOF d) PTFC	Technical Engineering discussions	Conventional Telephones
NRC Emergency Notifications System (ENS)	Touch Tone	a) ECC b) TSC c) EOF d) Onsite NRC e) NRC Operations Center	Plant Status information	Conventional Telephones
NRC Health Physics Network (HPN)	Touch Tone	a) TSC b) EOF c) Onsite NRC d) NRC Operations Center e) NRC Region I	Radiological information	Conventional Telephones
Radio Communications		a) Certain Onsite Locations b) Mobile units	Communications to mobile units and backup to telephone system	
Bur. of Nuclear Engineering Information Line	Auto-Ring	a) ECC b) EOF c) TSC	Plant status and radiological information	Conventional Telephones
Emergency Director's Hotline	Auto-Ring	a) ECC b) TSC c) EOF	ED/ESD communications and consultation	Emergency Management line, conventional telephones
Emergency Management Line	Touch Tone	a) ECC b) TSC c) OSC d) EOF e) PTFC f) Corp. HQ - Parsip.	ED/ESD communications with all emergency response facilities	Conventional Telephones
Environmental Assess. Line	Touch Tone	a) ECC b) TSC c) OSC d) EOF e) AEOF	Source term, in-plant radiological conditions, dose projections	Radiological line, BNE line, Conventional Telephones
Notification Lines	Touch Tone	a) ECC b) TSC c) EOF	Official notifications (e.g., initial notifications, reclassifications, termination of the event)	Conventional Telephones

* Communications are assigned duty roster personnel and facility staff designated by the Facility Coordinator/Group Leader.

TABLE E2B
OCNGS EMERGENCY COMMUNICATIONS NETWORK

CIRCUIT	CIRCUIT TYPE	*COMMUNICATOR	INFORMATION TRANSMITTED	ALTERNATE COMMUNICATIONS
News Line	Touch Tone	a) ECC b) TSC c) EOF d) Energy Spectrum e) Media Center f) Communications - Bldg. 12	Communications between Media Affairs personnel	Conventional Telephones
Plant Status Update	Touch Tone	a) ECC b) TSC c) OSC d) EOF e) PTFC f) Communications - Bldg. 12	Plant status data and key plant parameters	Conventional Telephones
Station Security Line	Touch Tone	a) ECC b) TSC c) OSC d) EOF e) Main Gate f) North Gate g) EAA h) RAA i) AEOF	Personnel accountability; plant security status	Conventional Telephones
Chemistry Line	Touch Tone	a) ECC b) TSC c) OSC d) RAGEMS Room e) PEB Count Room f) PASS Room g) Hot Lab h) PTFC	PASS and RAGEMS sampling and analysis information	Conventional Telephones
NJ State Emergency Director Hotline	Auto-Ring	a) ECC b) EOF c) TSC	Dedicated communication link between ED/ESD and State Emergency Director	Conventional Telephones
NJ State Police Notification Line	Auto-Ring	a) ECC b) TSC c) EOF	Dedicated communication link between ED/ESD and NJ State Police	Conventional Telephones
NJ State Police Verification Line	Touch Tone	a) ECC b) TSC c) EOF	Dedication communication link between NJ State Police	Conventional Telephones
Ocean County Notification/ Verification Lines	Auto-Ring	a) ECC b) TSC c) EOF	Dedication communication link between ED/ESD and Ocean County	Conventional Telephones
Environmental Assessment Direct Line	Auto-Ring	a) ECC b) TSC c) EOF	Dedicated link between RAC and EAC	Conventional Telephones, Radiological line, Environmental Assessment line

* Communications are assigned duty roster personnel and facility staff designated by the Facility Coordinator/Group Leader

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TABLE 13
DIVISIONAL COMMITMENTS TO PROVIDE INSTRUCTIONS
NUCLEAR SERVICES DIVISION

	TRAINING DEPARTMENT	EMERGENCY PREPAREDNESS	TECHNICAL FUNCTIONS SECTION	TMI-1 DIVISION
TRAINING				
Basic Training Provided				
Shift Supervisor/Group Shift Supervisor		X		
Shift Foreman/Group Operating Supervisor		X		
CRO's TMI-1	X			
* CRO's (OC)	X	X		
Auxiliary Operators	X			
Maintenance Foreman	X			
Maintenance Workers	X			
Rad Con Foreman	X			
Rad Con Technicians	X			
Chemistry Technicians	X			X
Site Protection Force	X			
Training Given				
ED/ESD		X		
ERF-ECC	X			
ERF-OSC	X			X
ERF-TSC	X			X
ERF-EOF	X			X
ERF-AEOF	X			X
ERF-PTPC	X		X	
* Dose Projection Assessment	X	X (O.C. Only)		
Onsite/Offsite Radiological Survey	X			
Site Protection/Assembly/Accountability	X			
Emergency Radiological Controls	X			
Emergency Chemistry	X			
Emergency Teams	X			
Contaminated Injured and Decontamination	X			
Radiological Survey Support	X (TMI Only)			
Emergency Notification and Callouts	X			

* At Oyster Creek the training is jointly conducted by the Training Department and Emergency Preparedness Department.

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TABLE 14
PERIODIC TRAINING FOR GPUNC EMERGENCY RESPONSE PERSONNEL

NOTE: This table identifies the broad subject areas to be included in Emergency Plan Training for personnel assigned to the Emergency Response Organization. Emergency Plan Training does not include training in the skills that are prerequisite for assignment to these positions.

Position/Title	Scope of Training
♦ Emergency Director ♦ Operations Coordinator ♦ Shift Supervisor ♦ Shift Foreman ♦ ED Assistant ♦ Emergency Support Director ♦ ESD Assistant ♦ Emergency Preparedness Representative ♦ Group Leader R&EC ♦ Group Shift Supervisor (OCNGS Only) ♦ Group Operating Supervisor (OCNGS Only	Emergency Organization, Emergency Facilities, Emergency Action Levels, Emergency Classifications, Concept of Operations, Emergency Communications, Dose Projection and Assessment Methodology, Protective Actions, and procedural responsibilities. The depth of training provided is a variable of the position held by the responsible member.
♦ Control Room Operators	Techniques and methodology in operating communications equipment, proper log keeping and formal communication. TMI-1 CRO's will also include notification of offsite agencies.
+ ♦ Radiological Assessment Coordinator + ♦ Radiological Engineering Support + ♦ Environmental Assessment Coordinator + ♦ Met-Dose Coordinator	Plant Systems affecting dose assessment, EACC operations, RAC operations, RAC/EAC responsibilities and interfaces, dose projection and assessment, protective action.
♦ Radiological Controls Coordinator	Emergency organization, emergency classification, communications, facilities, relevant EPIPs, radiological controls during emergencies and interfacing with hospital, safety, security and rad con personnel.
♦ Group Radiological Controls Supervisor	Radiological controls during emergencies, dose projection and assessment, relevant EPIPs, post-accident sampling systems, emergency organization, facilities, communications and interfacing with hospital, safety, security and operations personnel.
♦ Public Information Representative ♦ JIC/President Media Briefer ♦ Communications Personnel	Emergency plan overview, media center activities and lessons learned.
♦ Radiological Controls Technician	Emergency organization, facilities, emergency classification, communications, emergency kit instrument use, relevant EPIPs, radiological controls during emergencies and interfacing with hospital, safety, security and operations personnel concerning injuries and decontamination of personnel and vehicles.
♦ Radiological/Environmental Survey Teams	Emergency kit instrument use, relevant EPIPs, formal radio communications, proper sampling techniques and practical exercises.
++ ♦ Radiological Assessment Coordinator Radiological Engineering Support	Plant systems, RAC operations, RAC/EAC responsibilities, dose projection and assessments and Protective Action.
++ ♦ Environmental Assessment Coordinator ♦ Met-Dose Coordinator	EACC Operations RAC/EAC responsibilities

\+ Training Applies to OCNGS Only
++ Training Applies to TMI Only

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TABLE E4
PERIODIC TRAINING FOR GPUNC EMERGENCY RESPONSE PERSONNEL

NOTE: This table identifies the broad subject areas to be included in Emergency Plan Training for personnel assigned to the Emergency Response Organization. Emergency Plan Training does not include training in the skills that are prerequisite for assignment to these positions.

Position/Title	Scope of Training
♦ TSC Coordinator ♦ TSC Engineers ♦ Group Leader - Technical Support ♦ Technical Support Representative (EOF) ♦ OSC Coordinator ♦ Group Leader - Administrative Support ♦ Site Services Coordinator ♦ Radiological Controls Support Coordinator ♦ Material Management Coordinator (OCNGS Only) ♦ Access Center Coordinator	Emergency organization, emergency response facilities, emergency classification and communications, facility activation, relevant EPIPs, and concept of operations of the respective facilities.
♦ Maintenance Foreman (TMI) ♦ Emergency Maintenance Coordinator	Emergency organization, facilities, communications, concept of operations, relevant EPIPs, and post-accident radiological controls.
♦ Maintenance Worker (TMI ♦ Maintenance Technician (OCNGS)	Emergency organization, facilities, emergency classification, communication, concept of OSC operations, and relevant EPIPs. Selected TMI maintenance technicians will be trained in logkeeping and callout of personnel. TMI utility personnel will be trained in map reading and radio communications.
♦ Auxiliary Operators (TMI) ♦ Equipment Operators (OCNGS)	This training will include concept of operations and radiological controls in a post-accident environment, relevant EPIPs, emergency organization, facilities and emergency radio communications.
♦ Chemistry Technician ♦ Chemistry Coordinator	Emergency organization, facilities, and communications equipment. Procedural guidance for gathering and analysis of chemistry samples.
♦ ECC Communications Coordinator ♦ ECC Communicators ♦ EOF Communications Coordinator ♦ EOF Communicators	Techniques and methodology in operating communications equipment, proper logkeeping and formal communications, notifications and callouts (TMI Only), offsite notifications only (OCNGS).
♦ Security ♦ Security Coordinator ♦ Emergency Assembly Area Coordinator	Emergency organization, facilities, concept and methodology for accountability and operation of the Emergency Assembly Area, relevant EPIPs. Emergency security processing (TMI Only).
♦ Medical Representative	Emergency organization, facilities, classification and communications, interfacing with hospital, safety, security, and rad con personnel for action concerning injuries.

+ Training Applies to OCNGS Only
++ Training Applies to TMI Only

TABLE 15
EMERGENCY RESPONSE ORGANIZATION STAFFING RESPONSIBILITIES

EMERGENCY RESPONSE ORGANIZATION POSITION	RESPONSIBILITY FOR STAFFING DESIGNATED POSITION(S)
ALL POSITIONS	Division Director, Responsible for each discipline.
	INITIAL RESPONSE EMERGENCY ORGANIZATION
Emergency Director, (ED)	Director, Plant Division
Operations Coordinator	Director, Plant Division
ED Assistant	Director, Plant Division
Radiological Assessment Coordinator/Staff	Director, Nuclear Services Division
Radiological Engineering Support	Director, Nuclear Services Division
ECC Communications Coordinator/Communicators	Director, Plant Division
TSC Coordinator	Director, Plant Division
TSC Engineers	Director, Plant Division
Chemistry Coordinator	Director, Plant Division
OSC Coordinator	Director, Plant Division
Radiological Controls Coordinator	Director, Nuclear Services Division
Radiological/Environmental Survey Teams	Director, Nuclear Services Division & Dir., Plant Division
Emergency Maintenance Coordinator	Director, Plant Division
Medical Representative	Director, Nuclear Services Division
Security Coordinator	Corp. Counsel & Secretary
** Emergency Assembly Area Coordinator	Director, Adm. & Finance/Services Division
Public Information Representative	Director, Communications
	EMERGENCY SUPPORT ORGANIZATION
Emergency Support Director (ESD)	Office of the President
ESD Assistant	Director, Plant Division or Director Nuclear Services
Group Leader - Rad. & Env. Controls	Director, Nuclear Services Division
Emergency Preparedness Representative	Director, Nuclear Services Division
Technical Support Representative	Director, Technical Functions Division

** This position does not require respiratory/radiation worker training (Level II) qualification or active participation in the dosimetry system (i.e., TLD assigned and current WBC on record).

ECC - Emergency Control Center
TSC - Technical Support Center
OSC - Operations Support Facility
EOF - Emergency Operations Facility
PTFC - Parsipanny Technical Functions Center
RAC - Radiological Assessment Coordinator

TABLE E5
EMERGENCY RESPONSE ORGANIZATION STAFFING RESPONSIBILITIES

EMERGENCY RESPONSE ORGANIZATION POSITION	RESPONSIBILITY FOR STAFFING DESIGNATED POSITION(S)
	EMERGENCY SUPPORT ORGANIZATION
Technical Support Staff	Director, Technical Functions Division
Group Leader Technical Support/Staff	Director, Technical Functions Division
Public Information Representative	Director, Communications
EOF Communications Coordinator	Director, Nuclear Services Division
EOF Communicators	Director, Nuclear Services Division
Group Leader - Administrative Support/Staff	Director, Plant Division
Site Services Coordinator	Director, Nuclear Services Division
Rad. Controls Support Coordinator	Director, Nuclear Services Division
JIC/Media Center Briefers	Director, Communcations
Environmental Assessment Coordinator/Staff	Director, Nuclear Services Division
Met/Dose Coordinator	Director, Nuclear Services Division
Access Center Coordinator	Director, Nuclear Services Division

Note:

Staff and group members will be assigned by their respective group leaders/coordinators who will also assign their training and ensure their availability during an emergency.

** This position does not require respiratory/radiation worker training (Level II) qualification or active participation in the dosimetry system (i.e., TLD assigned and current WBC on record).

ECC - Emergency Control Center
TSC - Technical Support Center
OSC - Operations Support Facility
EOF - Emergency Operations Facility
PTFC - Parsipanny Technical Functions Center
RAC - Radiological Assessment Coordinator

FIGURE 1: TMI SITE ARRANGEMENT

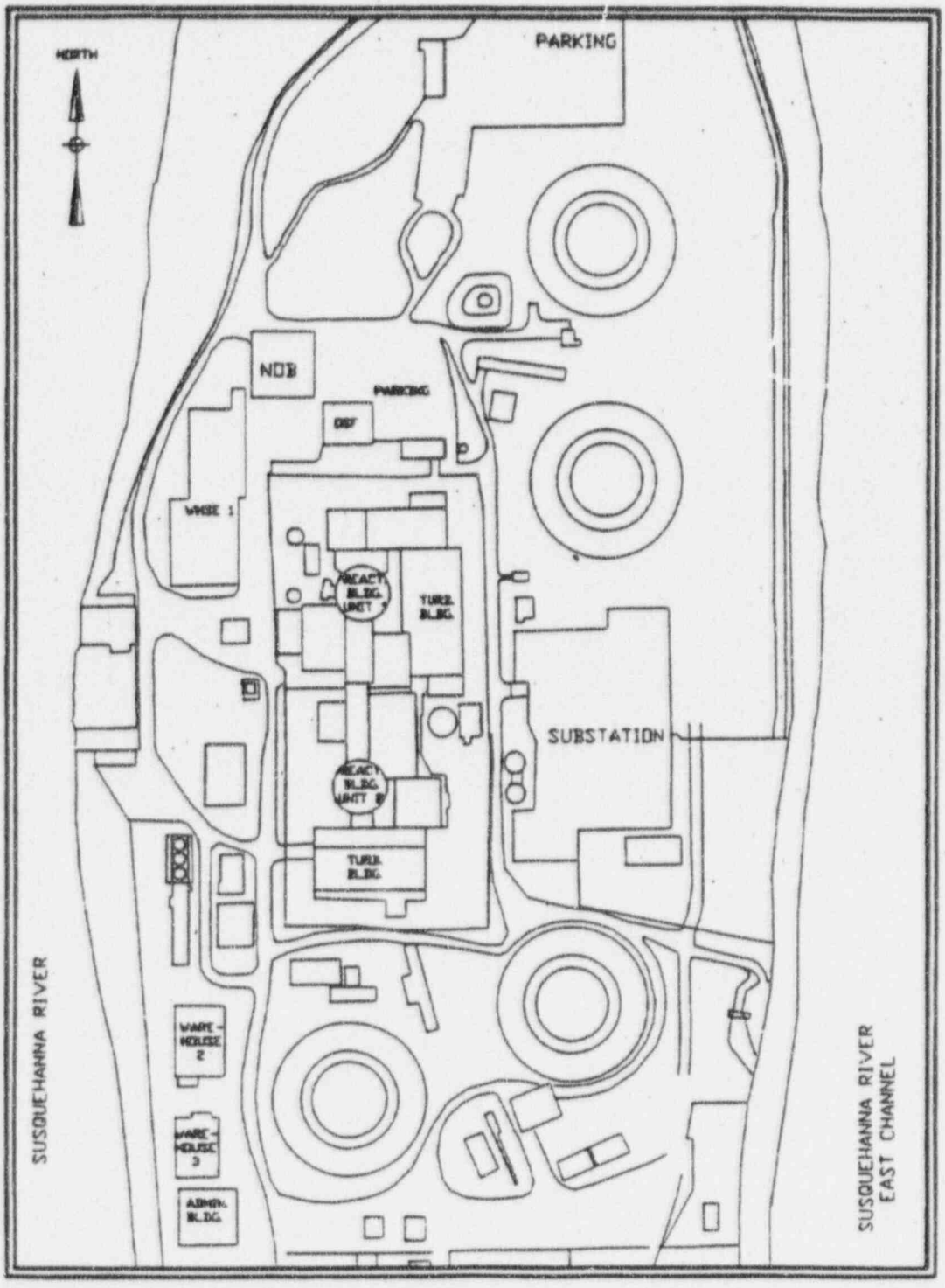

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FIGURE 2: TMI SITES RELATIVE LOCATION

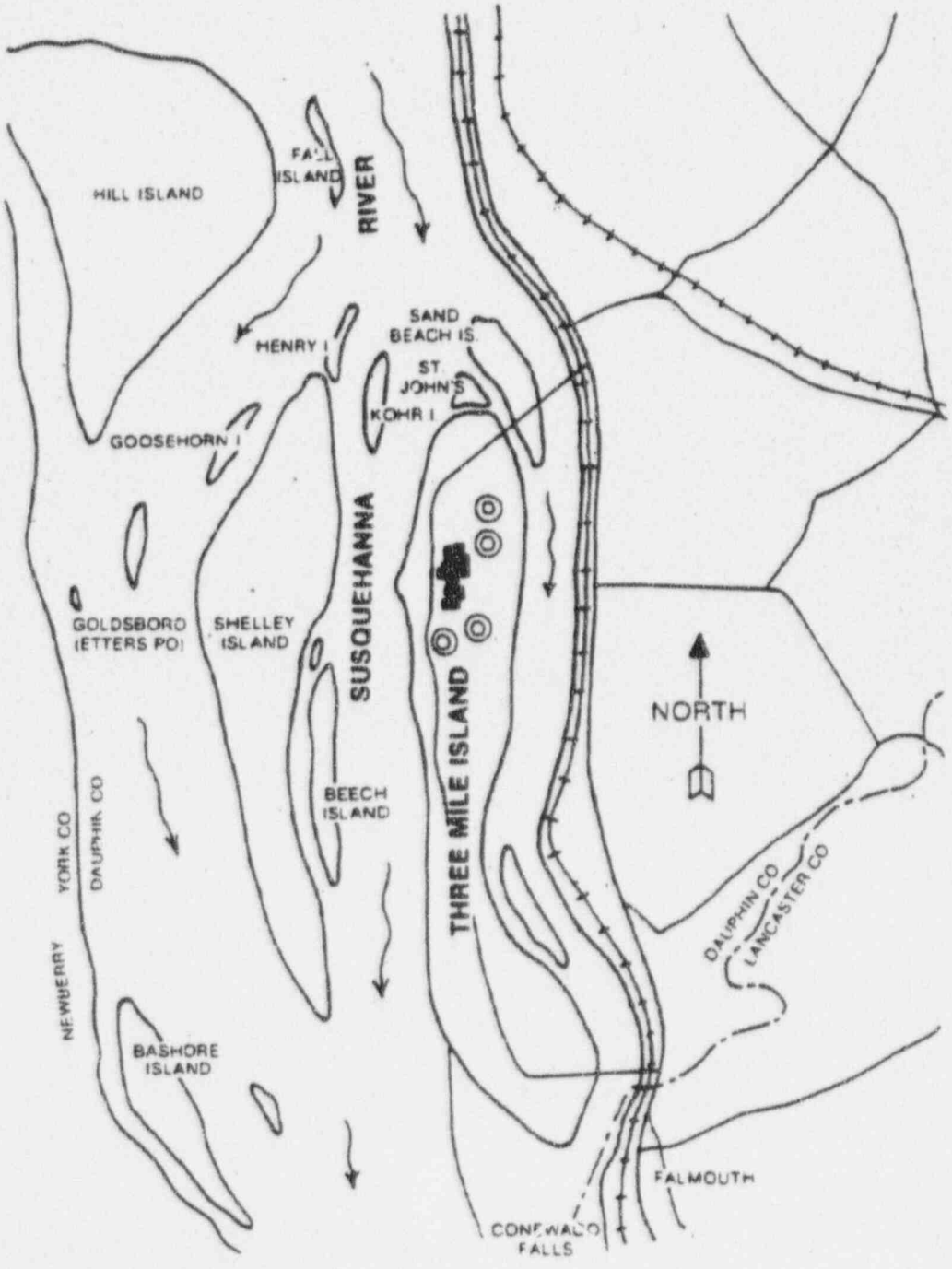

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FIGURE 3: OCNGS SITE ARRANGEMENT

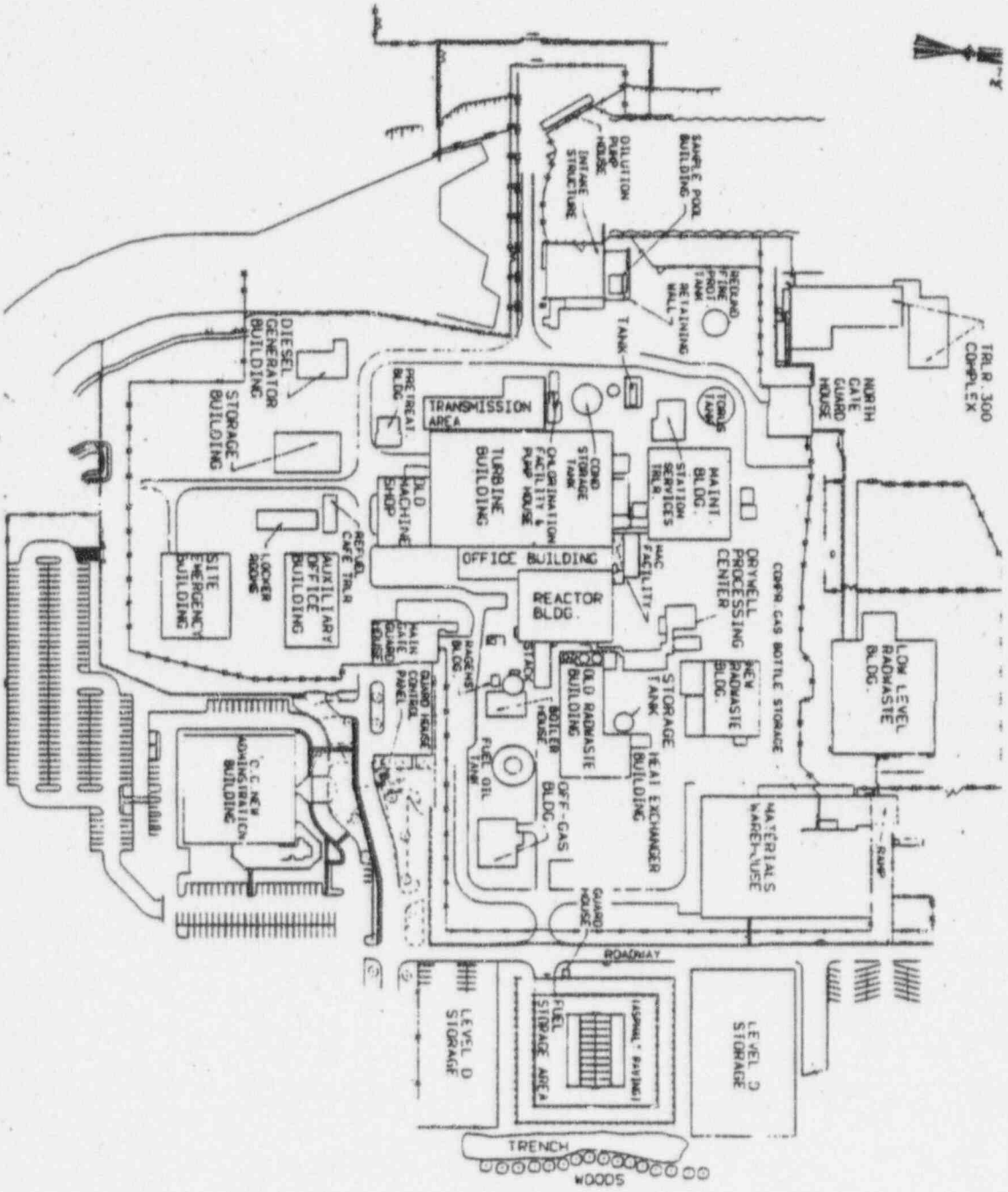

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FIGURE 4: OCNGS SITE RELATIVE LOCATION

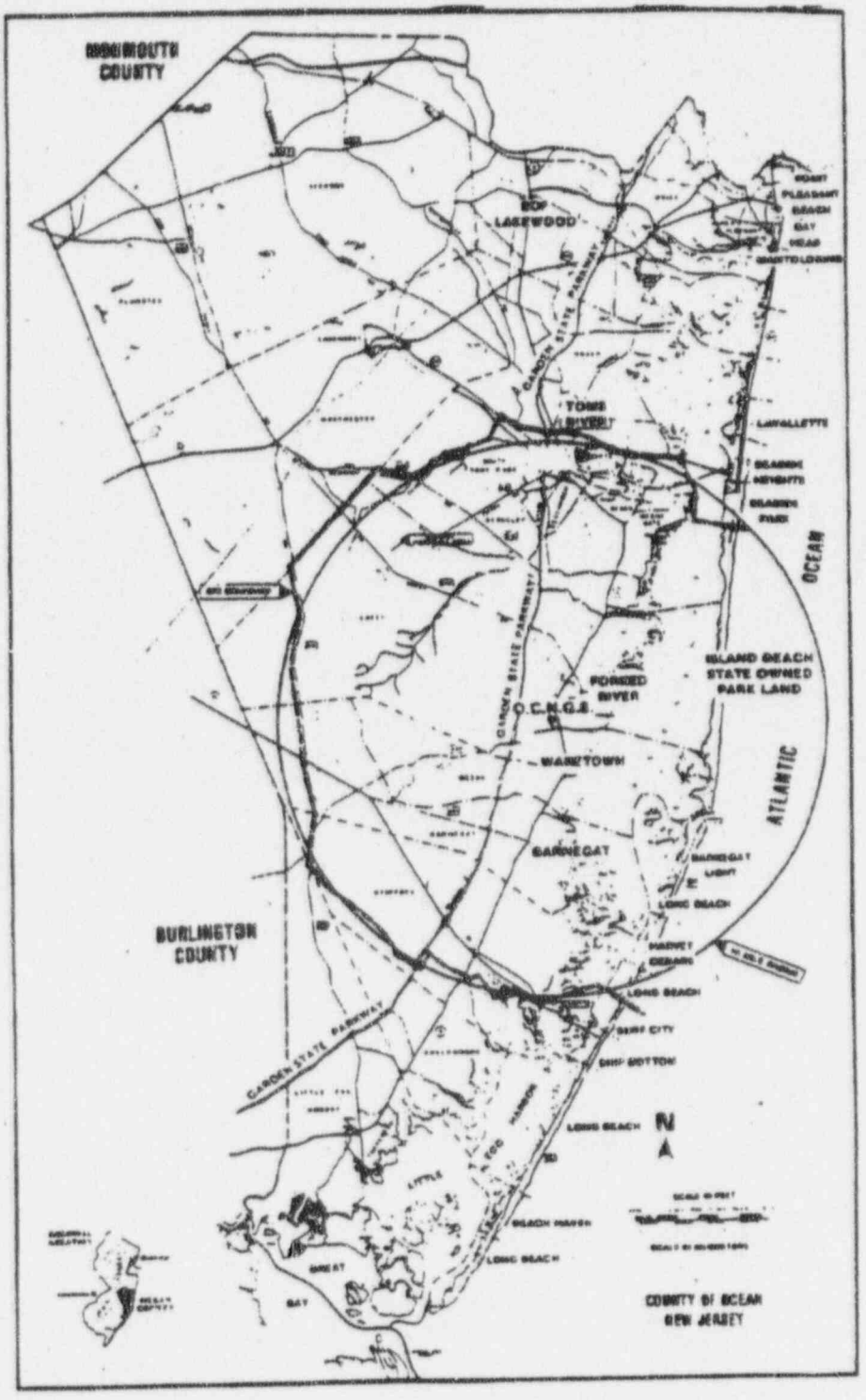

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FIGURE 5: TMI SITE EXCLUSION AREA AND LOW POPULATION ZONE

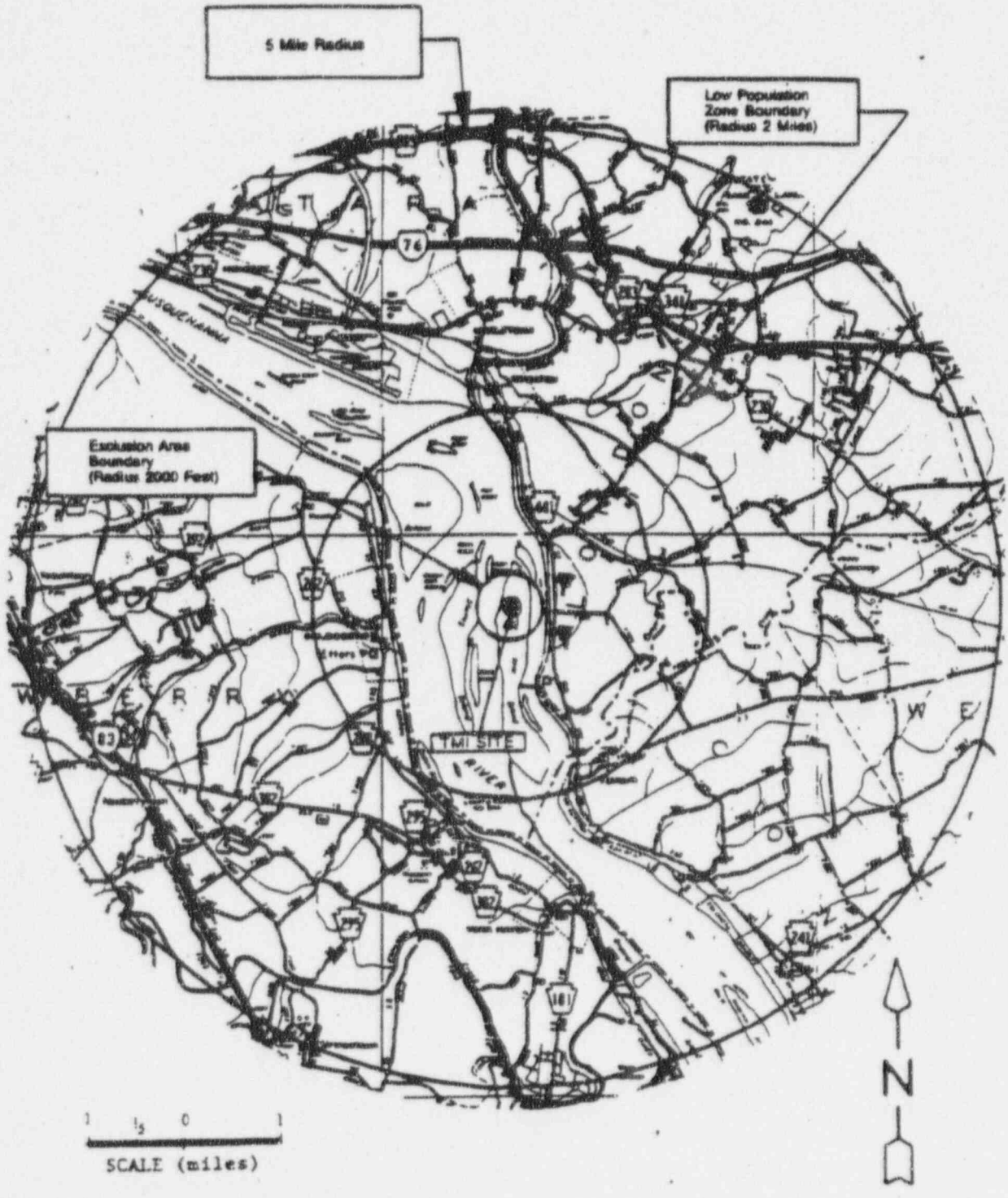

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FIGURE 6: OCNGS SITE EXCLUSION AREA AND LOW POPULATION ZONE

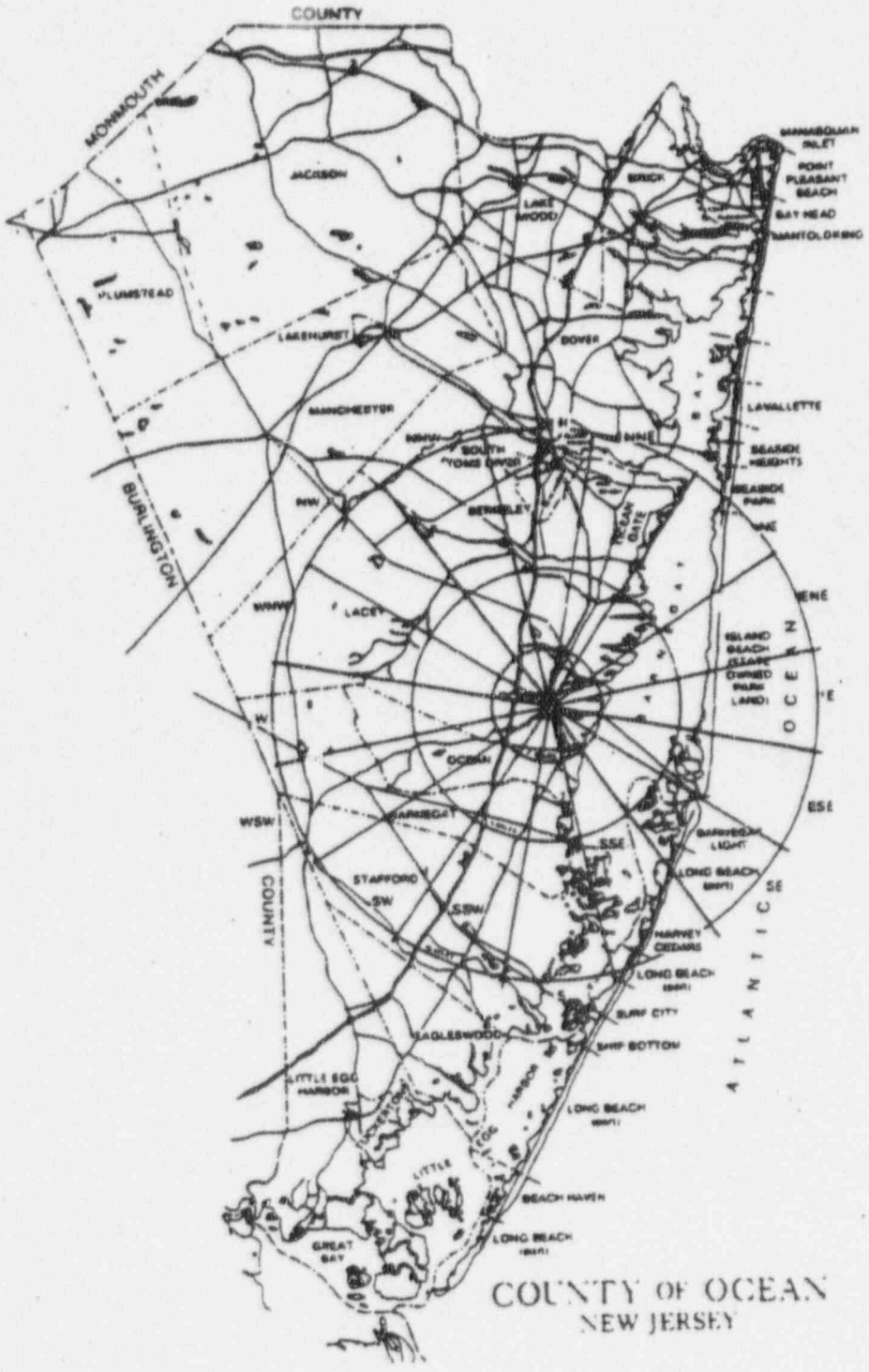

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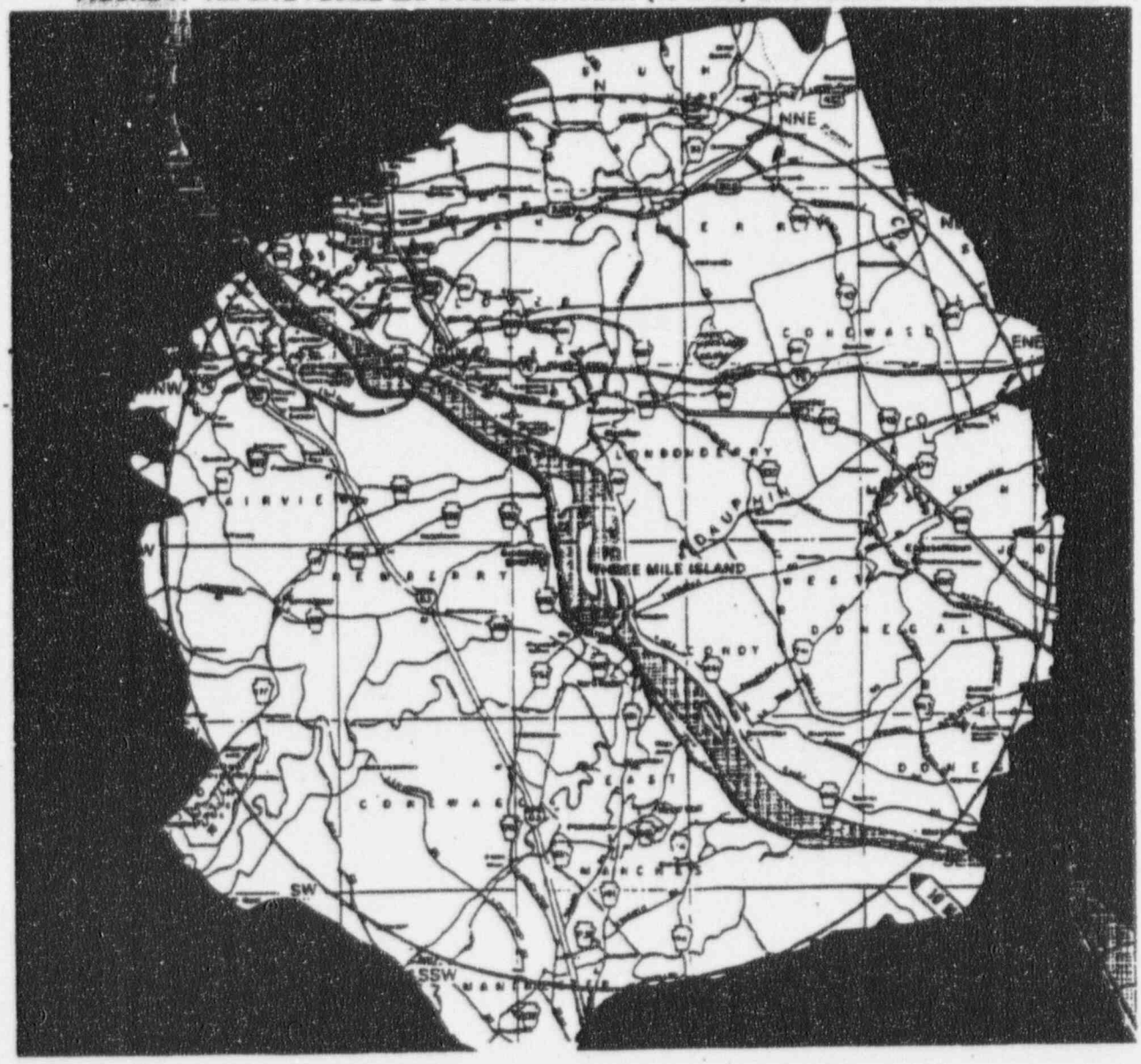
FIGURE 7: TMI SITE PLUME EXPOSURE PATHWAY (10 MILE) EMERGENCY PLANNING ZONE



Lightened Area Depicts
Plume Exposure Pathway EPZ

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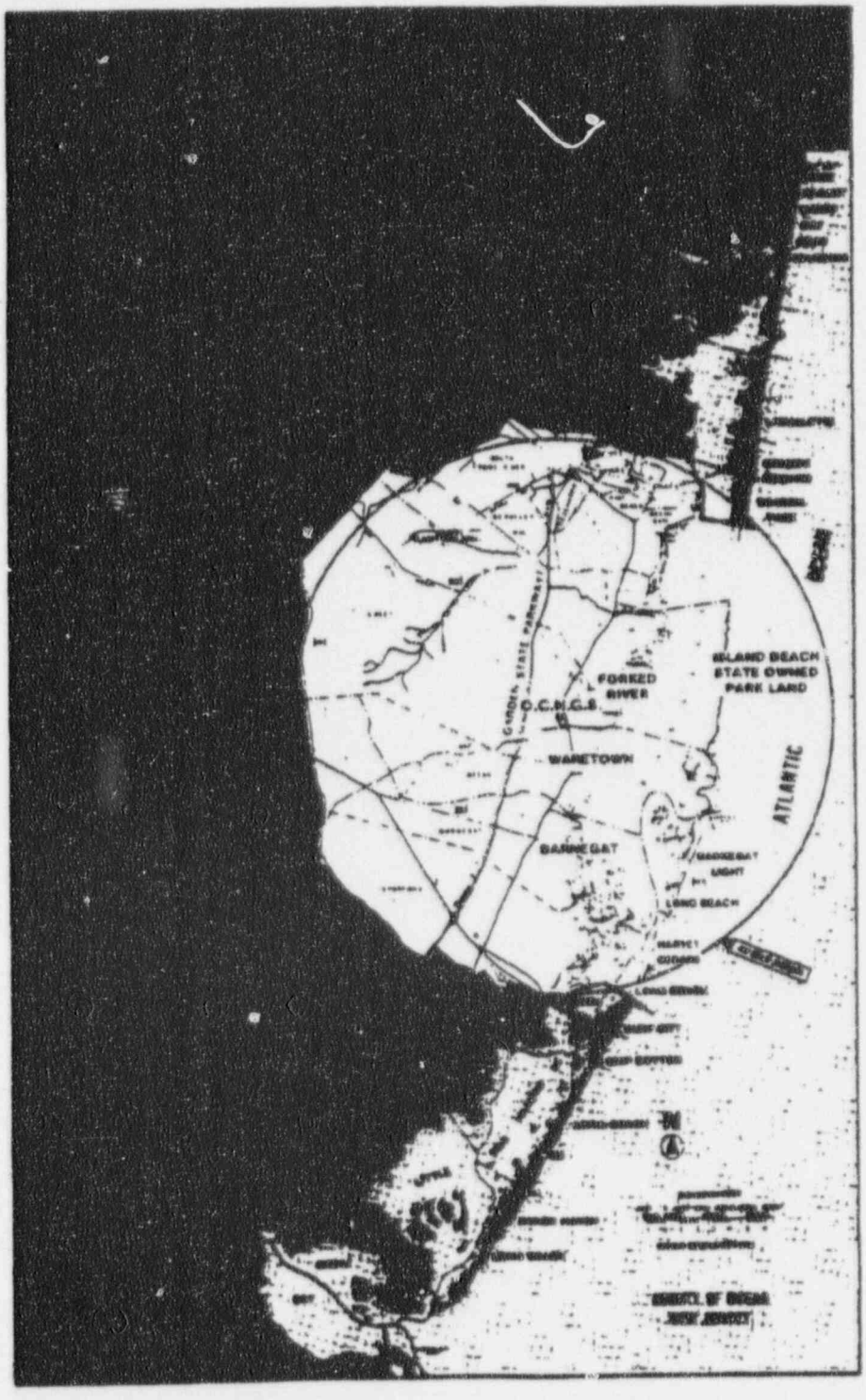
FIGURE 8: OCNGS SITE PLUME EXPOSURE PATHWAY (10 MILE) EMERGENCY PLANNING ZONE



Lightened Area Depicts
Plume Exposure Pathway EPZ

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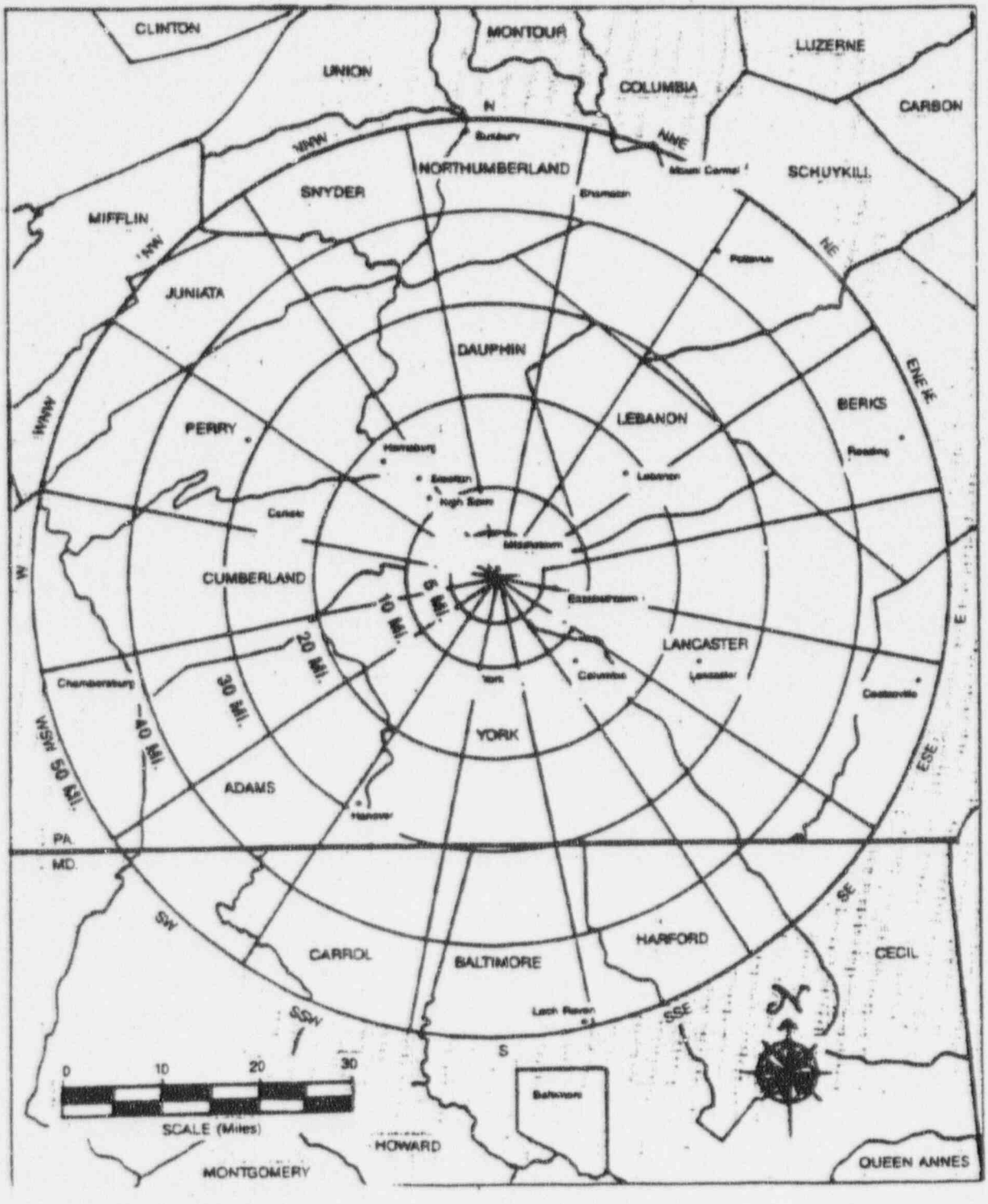
FIGURE 9: TMI SITE INGESTION PATHWAY (50 MILE) EMERGENCY PLANNING ZONE



Lightened Area Depicts Ingestion Pathway EPZ

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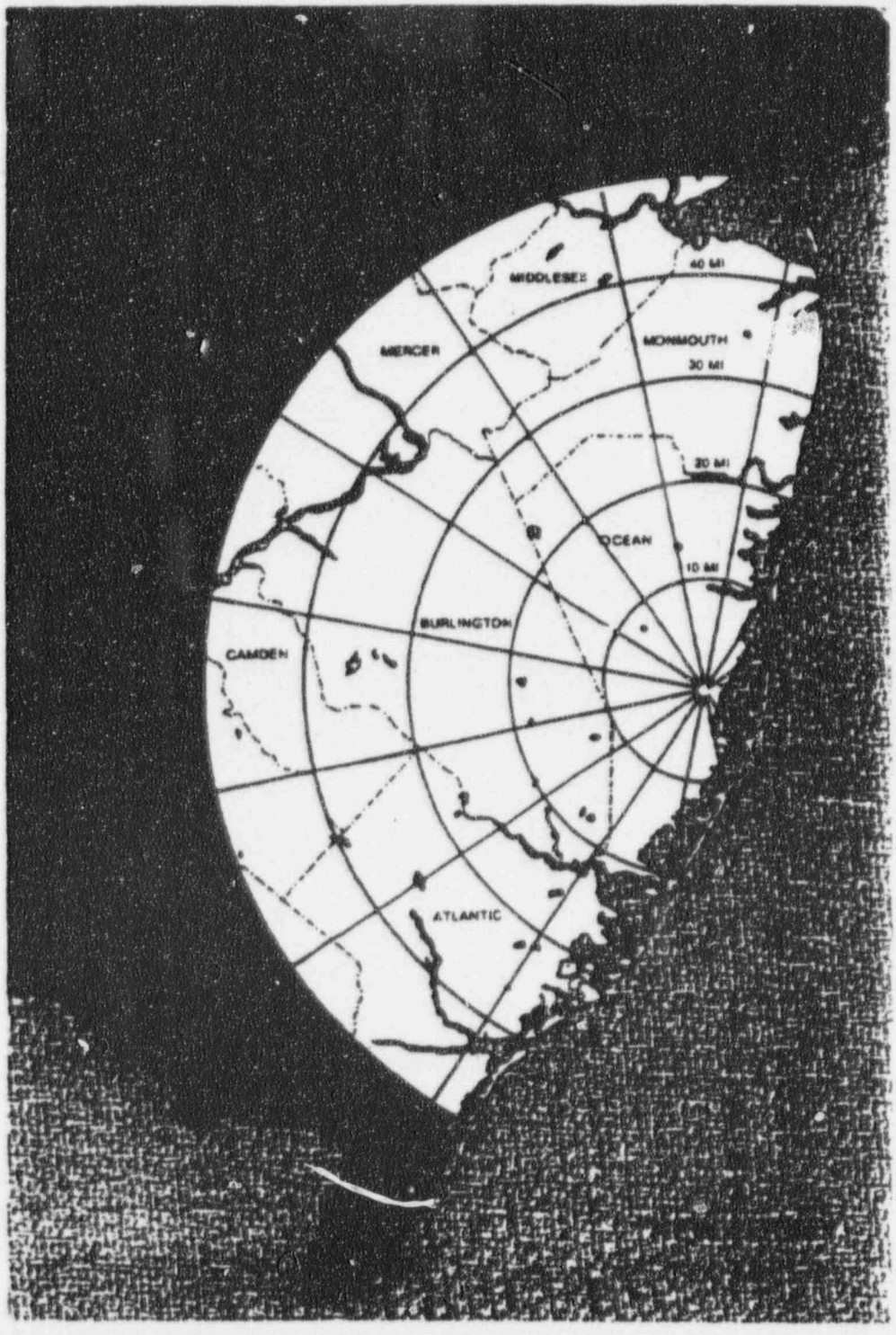
FIGURE 10: OCNGS SITE INGESTION PATHWAY (50 MILE) EMERGENCY PLANNING ZONE



Lightened Area Depicts Ingestion Pathway EPZ. Technically this EPZ extends into the Atlantic Ocean but, for planning purposes, the extended waterway distance is under jurisdiction of federal agencies and typically not considered.

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FIGURE 11: TMI NORMAL SHIFT ORGANIZATION

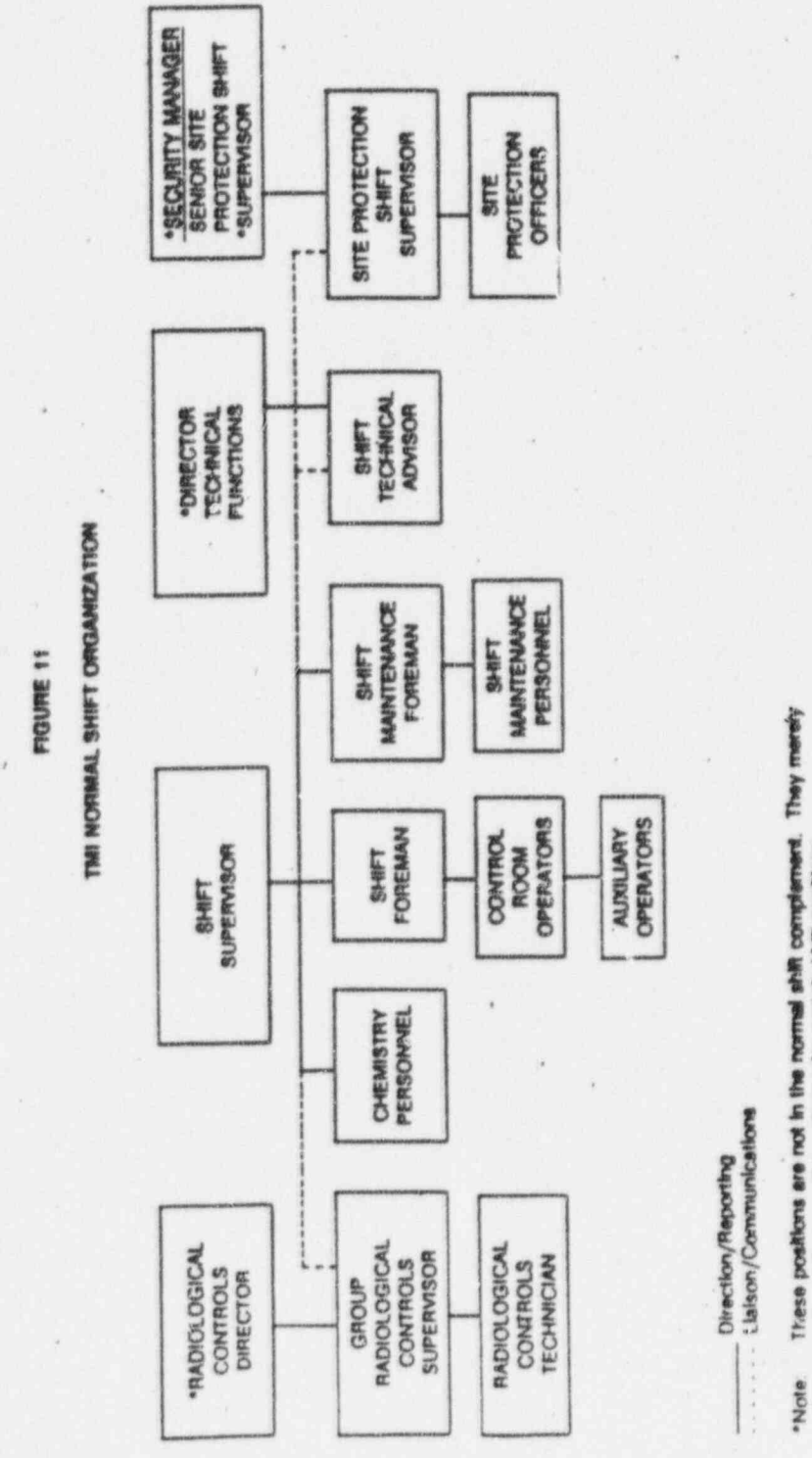

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FIGURE 12: OCNGS NORMAL SHIFT ORGANIZATION

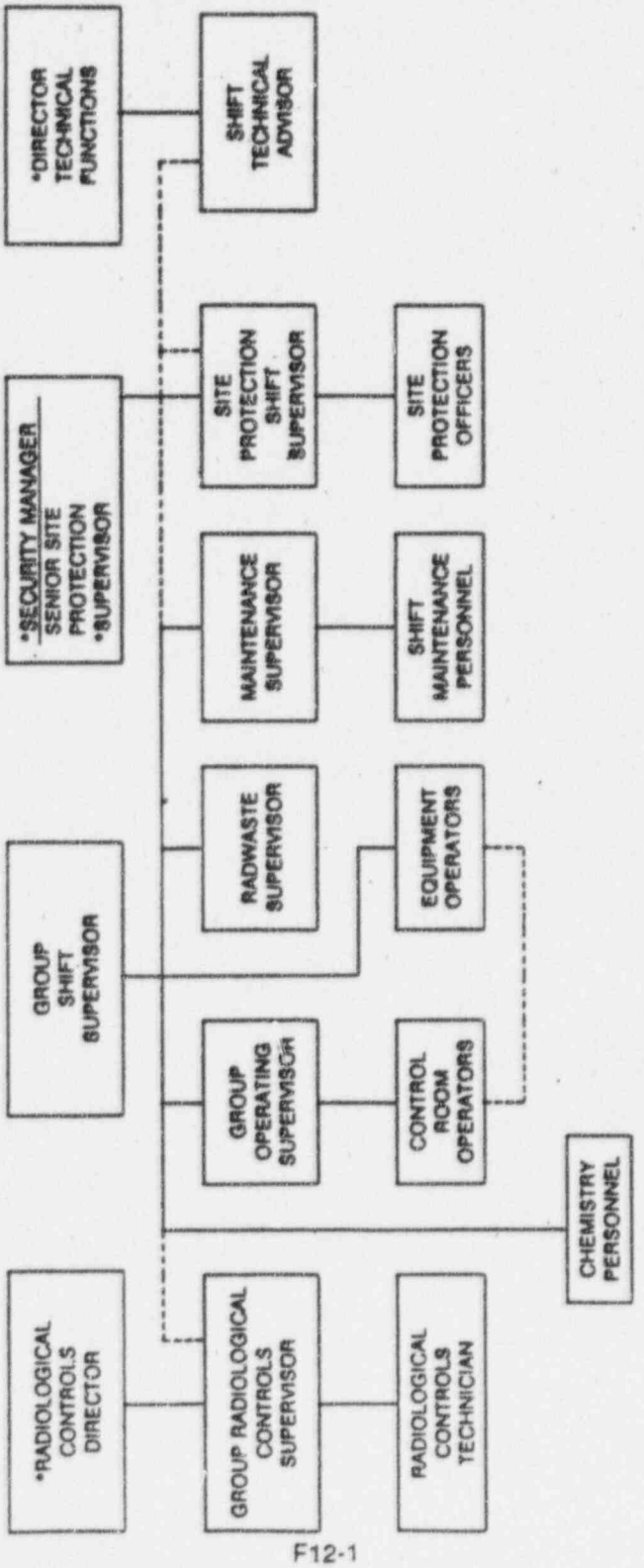

FIGURE 12

OCNGS NORMAL SHIFT ORGANIZATION

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FIGURE 13: GPUNC ON-SHIFT EMERGENCY ORGANIZATION - TMI-1 AND OCNGS

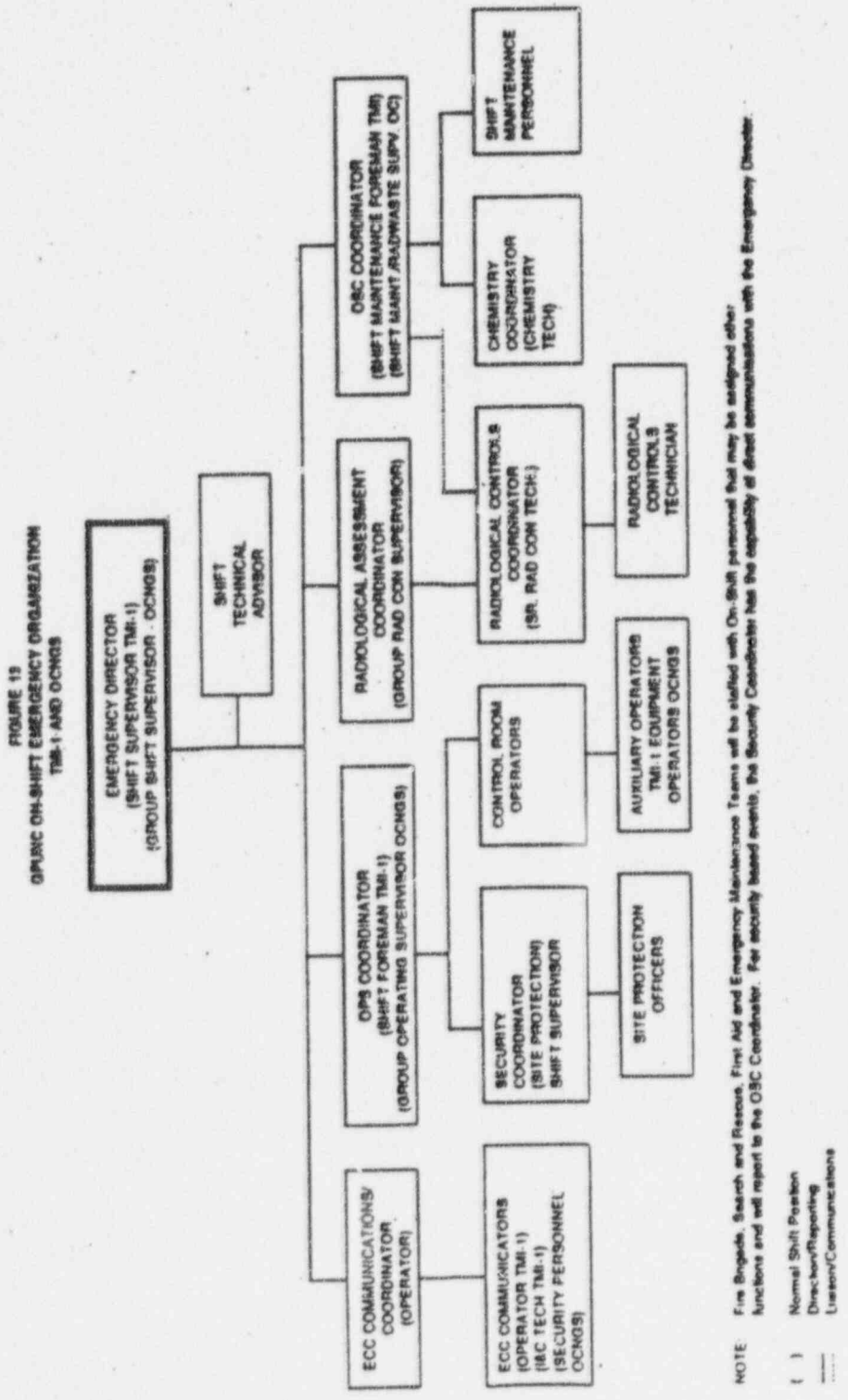

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FIGURE 14: GPUNC INITIAL RESPONSE EMERGENCY ORGANIZATION - TMI-1 AND OCNGS

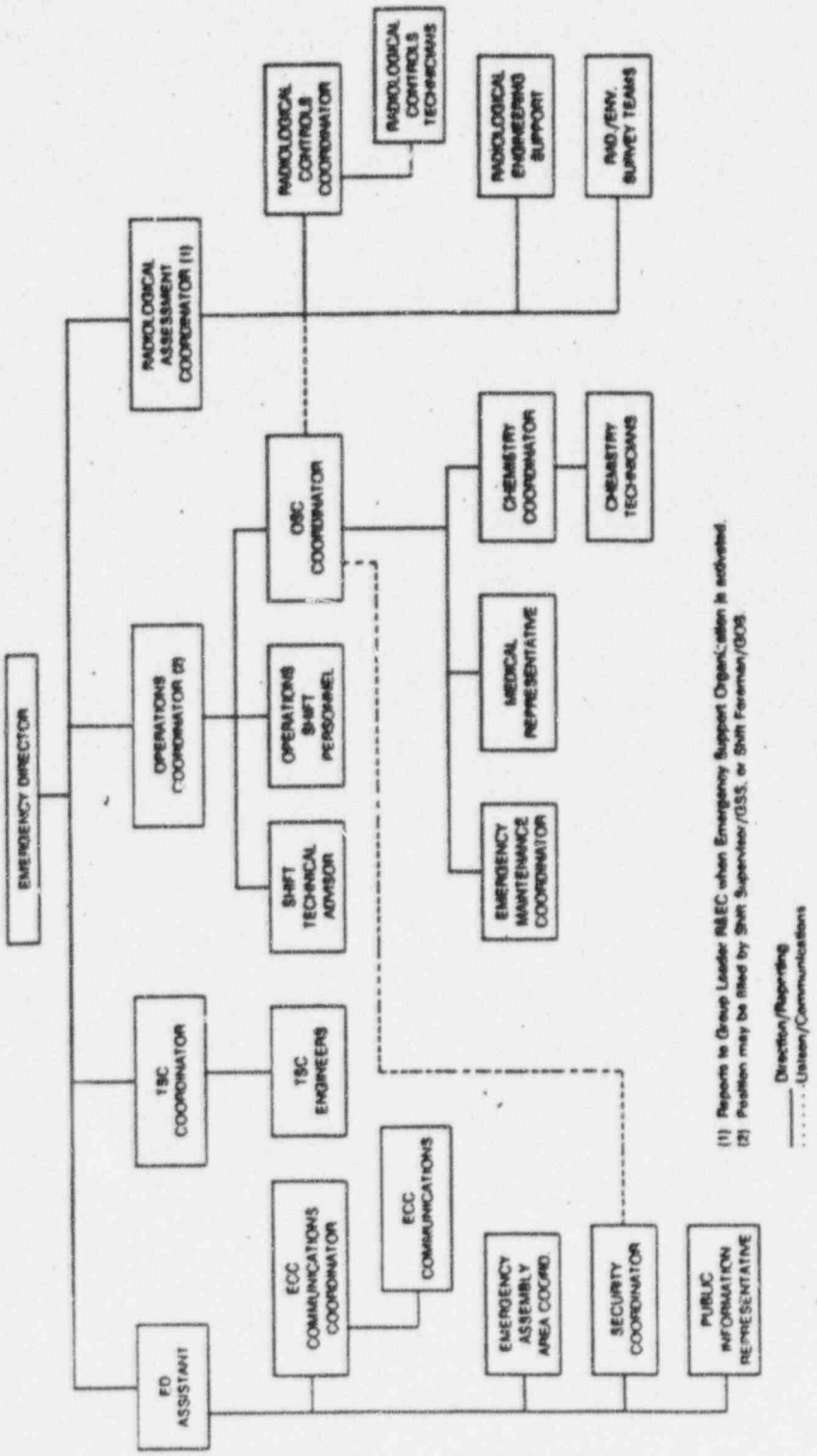

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FIGURE 15: GPUNC EMERGENCY SUPPORT ORGANIZATION

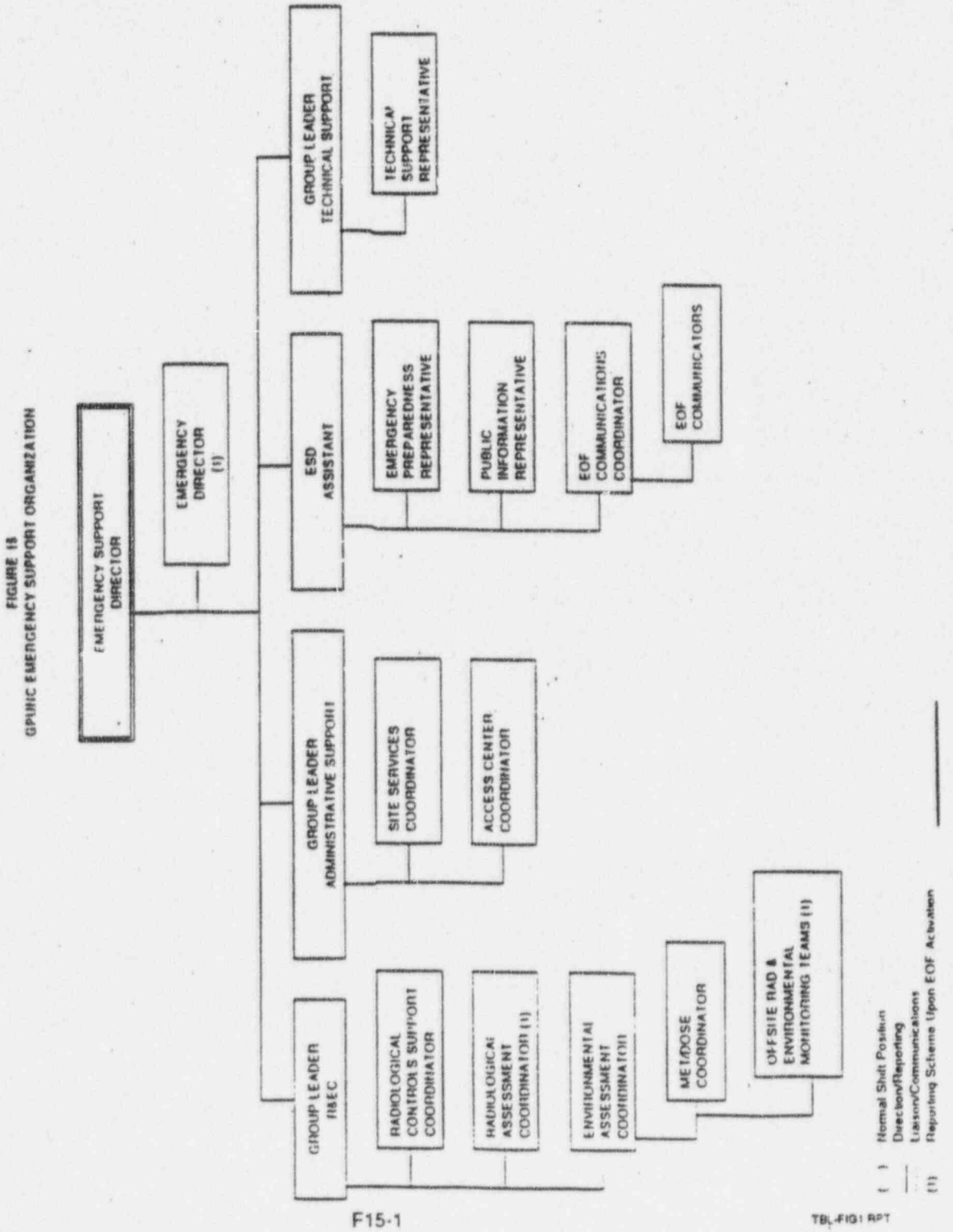

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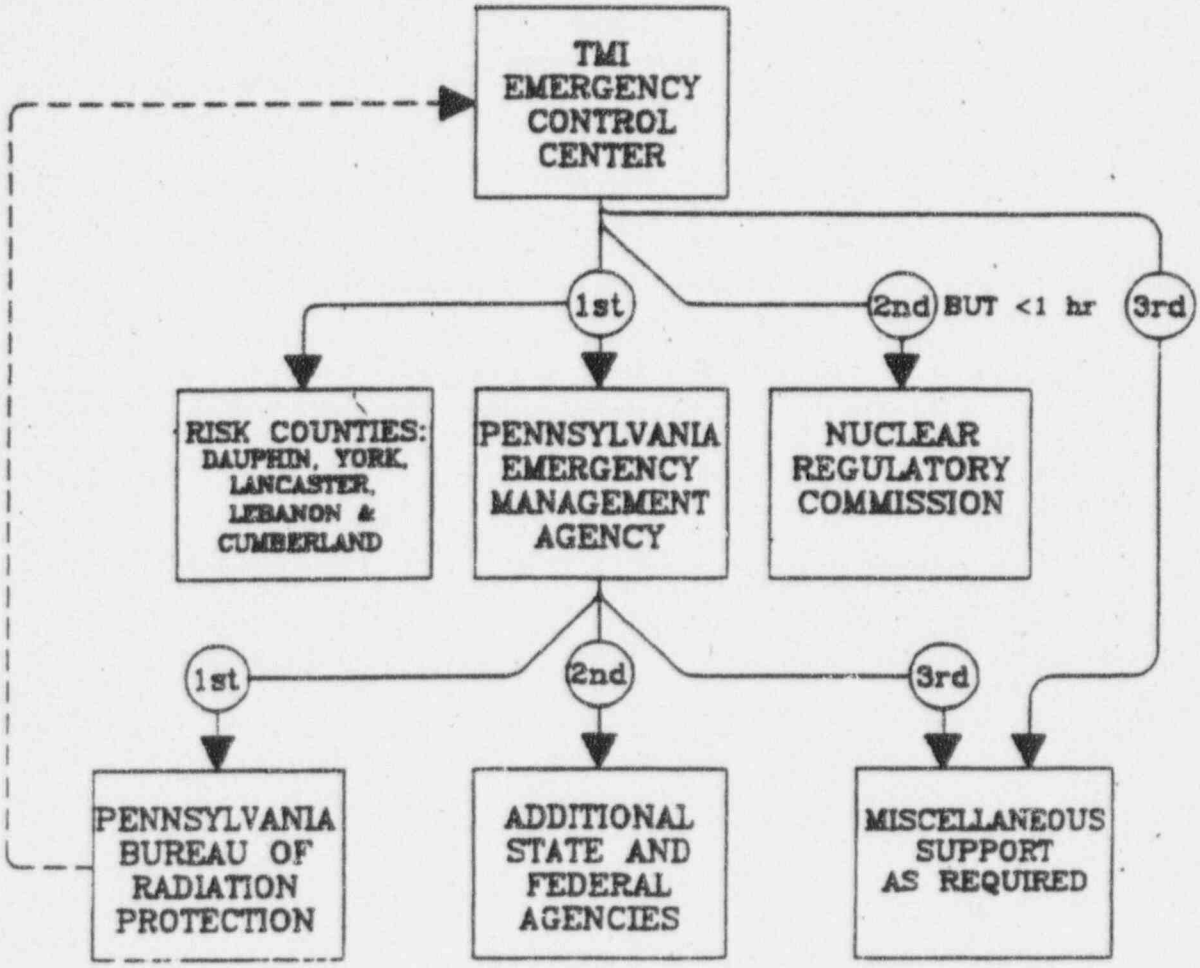
FIGURE 16: TMI NOTIFICATION NETWORK



NOTES: (A) Notifications are sequenced as shown, with the initial (simultaneous) notification designated by "1st."

(B) If initial event is a General Emergency, a description of the event and PAR is given to the State and all risk counties.

(C) Initial notification of event must be made within 15 minutes of declaration.

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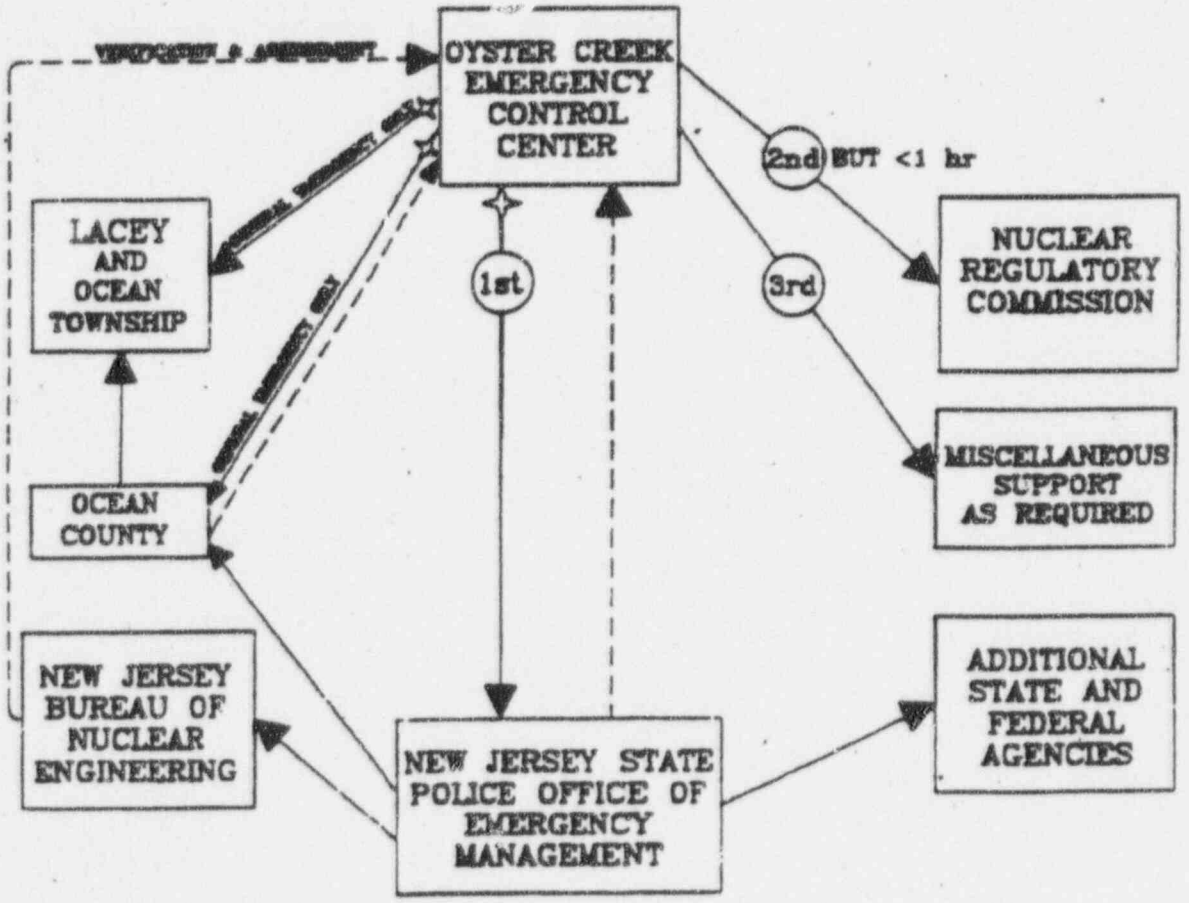
FIGURE 1 OCNGS NOTIFICATION NETWORK



NOTES: (A) Notifications are sequenced as shown, with the initial notification designated by "1st."

(B) If initial event is a General Emergency, a description of the event and PAR is given to the State and Ocean County.

✧(C) Initial notification of the event on dedicated line must be made within 15 minutes of declaration.

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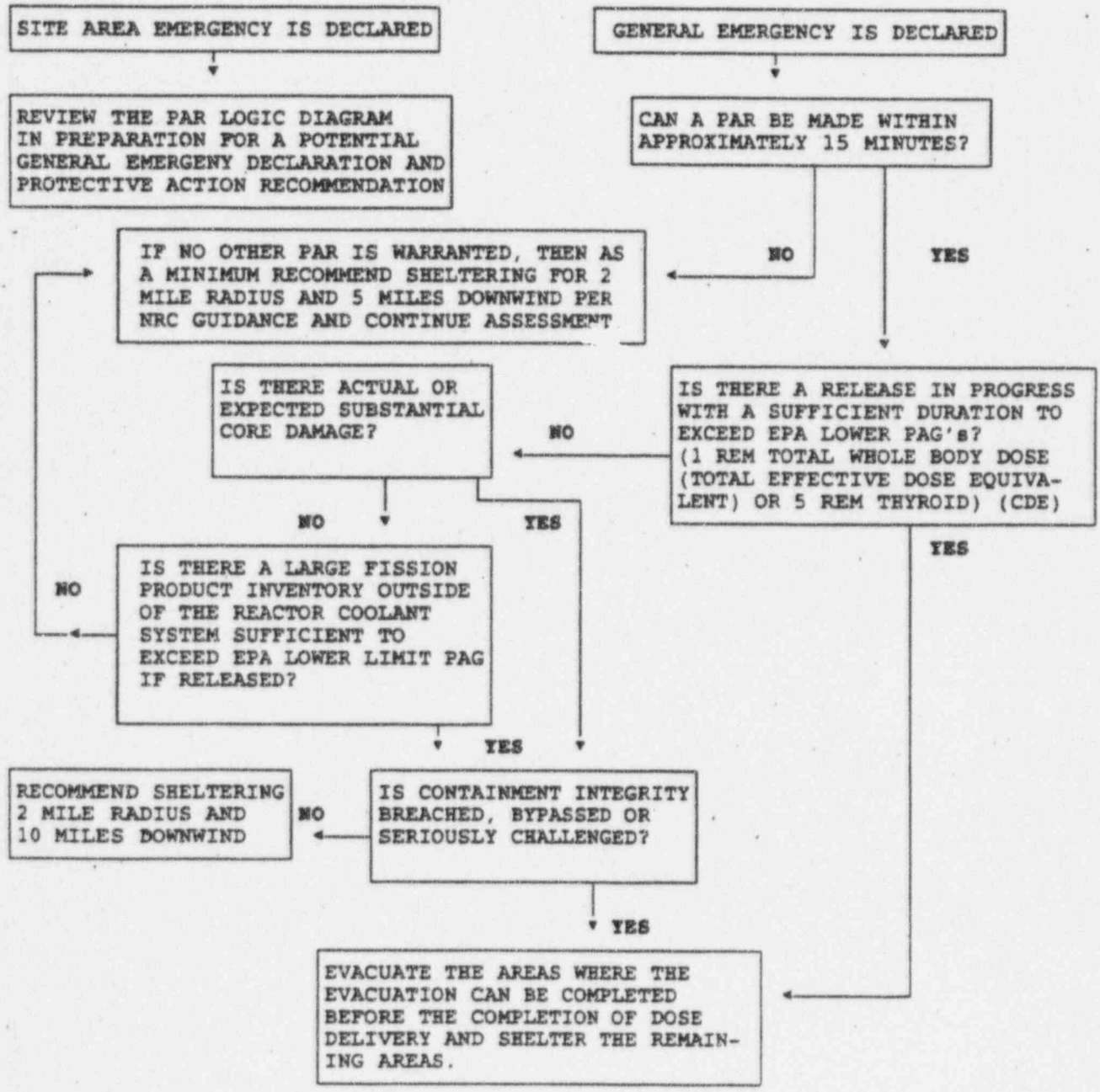
FIGURE 18: THREE MILE ISLAND AND OYSTER CREEK DEVELOPMENT OF PROTECTIVE ACTION RECOMMENDATIONS (PAR) LOGIC DIAGRAM



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