LIMERICK GENERATING STATION

UNITS 1 AND 2

EMERGENCY PLAN

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REMOVE	INSERT
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LIMERICK GENERATING STATION

UNITS 1 AND 2

EMERGENCY PLAN

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LIMERICK GENERATION STATION

UNITS 1 AND 2

EMERGENCY PLAN

FSAR SECTION 13.3

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LIMERICK GENERATING STATION
UNITS 1 and 2
EMERGENCY PLAN

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810.2-1	810.2-1

LIMERICK GENERATION STATION
UNITS 1 and 2
EMERGENCY PLAN

REVISION 4 PAGE CHANGES

The attached Revision 4 pages and tables are considered part of a controlled copy of the Limerick Generating Station Emergency Plan. This material should be incorporated into the EP by following the instructions below.

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LIMERICK GENERATING STATION UNITS 1 AND 2

EMERGENCY PLAN

REVISION 3 PAGE CHANGES

The attached Revision 3 pages, tables, and figures are considered part of a controlled copy of the Limerick Generating Station Emergency Plan. This material should be incorporated into the EP by following the instructions below.

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LIMERICK GENERATING STATION UNITS 1 & 2

EMERGENCY PLAN

REVISION 2 PAGE CHANGES

The attached Revision 2 pages, tables, and figures are considered part of a controlled copy of the Limerick Generating Station Emergency Plan. This material should be incorporated into the EP by following the instructions below.

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LIMERICK GENERATING STATION UNITS 1 & 2

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REVISION 1 PAGE CHANGES

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Remove	Insert	Dated
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-	Tab - Responses to NRC Questions	-
-	Page 810.1-1	9/81
-	Page 810.2-1	9/81
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LIMERICK GENERATING STATION LICENSE APPLICATION

AMENDMENT	CONTENT
26	Revision No. 1 - FSAR Revision No. 1 - Emergency Plan

Emergency Plan

Limerick Generating Station

Units 1 & 2

PHILADELPHIA ELECTRIC COMPANY

Vol. 1

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

EMERGENCY PLAN

(FSAR SECTION 13.3)

PHILADELPHIA ELECTRIC COMPANY
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EMERGENCY PLAN INDEX

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EMERGENCY PLAN INDEX

APPENDICES

Appendix H - Evacuation Time Study

Appendix I - Comparison of Limerick Emergency Plan with NUREG-0654 and 10 CFR 50, Appendix E.

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PHILADELPHIA ELECTRIC COMPANY (PECO)
LIMERICK GENERATING STATION (LGS)
EMERGENCY PLAN (EP)

0.0 INTRODUCTION

As is the case with all large industrial facilities, the operation of Limerick Generating Station involves the potential for accidents to occur. This Emergency Plan describes the philosophy, organization, facilities, and equipment to ensure total preparedness for emergencies which range from minor events which are expected to occur through postulated major accidents which are expected not to occur.

This Emergency Plan has been prepared using a variety of sources for guidance. The basic format of the plan follows that specified in NRC Regulatory Guide 1.101 (March, 1977). NUREG-0654 and 10CFR50, Appendix E, which define areas of concern which must be addressed to give evidence that adequate emergency preparedness has been established, have been used as references for the content of the plan. The plan also incorporates experience gained in the use of emergency plans and procedures at Peach Bottom Atomic Power Station as well as other Philadelphia Electric Company emergency procedures.

The Electric Production Department maintains the primary responsibility for assessing and reacting to nuclear emergencies. Other departments within Philadelphia Electric Company have emergency response roles in support of the Electric Production Department. Various Federal, Commonwealth, and local agencies have responsibilities for emergency planning and for responding to emergencies at Limerick Generating Station. This Emergency Plan serves to describe the coordination and integration all of these organizations.

1.0 DEFINITIONS

This section provides definitions of certain terms which are used in this Emergency Plan that may be unique or may have connotations which differ from normally accepted usage. Certain terms and definitions which appear in the plan are included.

| AFFECTED PERSON - Individual(s) who have been contaminated, radiologically exposed, or physically injured to a degree requiring special attention, e.g., decontamination, first aid, or medical service.

ANNEX E - A section of the Commonwealth of Pennsylvania Disaster Operations Plan entitled "Fixed Nuclear Facility Incidents".

ASSESSMENT ACTIONS - Those actions taken during or after an incident to obtain and process information that is necesary to make decisions.

BUREAU OF RADIATION PROTECTION (BRP) - An agency under the Pennsylvania Department of Environmental Resources.

CORRECTIVE ACTIONS - Those emergency measures taken to ameliorate or terminate an emergency situation at or near the source of the problem.

DESIGN BASIS ACCIDENT (DBA) - A hypothesized incident which would result in potential hazards not exceeded by those from any credible accident as described in the Final Safety Analysis Report (FSAR).

EMERGENCY - A sudden, urgent, usually unforeseen occurrence or occasion requiring immediate action. It may result from accidental causes, natural causes, or man-made action.

EMERGENCY ACTION LEVELS (EALs) - Radiological dose rates, specific contamination levels of airborne, waterborne, or surface-deposited concentrations of radioactive materials; or specific instrument indications (including their rates of change); or a specific set of conditions or events that may be used as thresholds for initiating such specific emergency measures as designating a particular class of emergency, or initiating a particular protective action.

EMERGENCY NEWS CENTER - A PECo emergency facility which serves as a unified source of information for the public.

| EMERGENCY OPERATIONS FACILITY (EOF) - The facility from which site emergency operations are coordinated. This center

communicates with off-site support organizations and is equivalent to the Emergency Operations Facility defined in NUREG-0654.

EMERGENCY PLANNING ZONES (EPZ) - Areas for which planning assures that prompt and effective actions can be taken to protect the public. For the plume exposure pathway, the EPZ is an approximate ten mile radius from the plant. For the ingestion pathway, the EPZ is an approximate fifty mile radius from the plant.

EMERGENCY SUPPORT CENTER - A PECo facility which, if needed, would be established to accommodate activated resources such as vendor and other utility personnel and the recovery organization.

FACILITY OPERATOR - The utility responsible for the operations of a fixed nuclear facility at the time of and during recovery from an emergency nuclear incident.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) - The principal agency for off-site emergency planning in the Federal Government.

FIXED NUCLEAR FACILITY - The Limerick Generating Station (LGS).

HEADQUARTERS EMERGENCY SUPPORT CENTER - An emergency facility in the PECo main office building.

INSTITUTE OF NUCLEAR POWER OPERATIONS (INPO) - An organization which evaluates and supports the nuclear utility industry.

MODES OF DISCHARGE - Discharge of radioactivity to the ground surface, surface water, the atmosphere or any combination thereof.

NUCLEAR REGULATORY COMMISSION (NRC) - The principal federal regulating agency for nuclear power.

OPERATIONAL SUPPORT CENTER (OSC) - A PECo emergency facility in the plant which serves as a staging area for operations and health physics personnel not assigned to the control room.

HOST COUNTY - Montgomery County, Pennsylvania, which is the county within which the reactors of the fixed nuclear facility are located.

PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY (PEMA) - The principal agency for emergency management in Pennsylvania.

POPULATION AT RISK - Those persons for whom protective actions are being or would be taken.

PROCEDURES FOR ELECTRIC SERVICE RESTORATION IN MAJOR EMERGENCIES - The Philadelphia Electric Company Electric Transmission and Distribution Department emergency plans relating to restoring electric service to customers.

PROTECTIVE ACTIONS - Those emergency measures taken for the purpose of preventing or minimizing hazards to plant personnel and the public.

PROTECTIVE ACTION GUIDES (PAGs) - Projected radiological dose or dose commitment values applicable to individuals in the general population that warrant protective action following 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. Projected dose or dose commitments are those which could occur if no protective action is taken.

RADIOLOGICAL EMERGENCY RESPONSE PLAN - Detailed incident response plans developed by the Commonwealth and its agencies, and County and municipal emergency management agencies, in coordination with PEMA and the fixed nuclear facilities.

RECOVERY ACTIONS - Those actions taken after the emergency to restore the plant as nearly as possible to a pre-emergency condition.

RISK COUNTIES - Those counties within the plume exposure EPZ of the fixed nuclear facility (approximate ten mile radius). These counties are Montgomery, Chester, and Berks.

SHIFT SUPERVISION - This term is used to denote either the Shift Superintendent, Shift Supervisor, or both.

STATION - The area and facilities within or near the LGS site boundary associated with the normal operation and emergency response of the plant.

SUPPORT COUNTIES - Those counties outside of the plume exposure EPZ (approximate ten mile radius from the fixed nuclear facility) which, through prior agreement, will provide support to a Risk County in the event of an

incident. Depending upon size and location, the same County may be both a risk and support County.

SUPPORT PERSONNEL AND MATERIAL - Resources which are not normally available, or not available in the quantities needed, within PECo and are obtained through other utilities and industry sources.

TECHNICAL SUPPORT CENTER (TSC) - An emergency facility in close proximity to the Control Room staffed by technical personnel capable of reviewing plant status and providing the Control Room operators and management with recommended actions.

2.0 SCOPE AND APPLICABILITY

This Emergency Plan encompasses and describes those facilities, equipment, organizations, services, and their related communication links necessary to respond to and to ameliorate emergency conditions at Limerick Generating Station. The plan is designed to respond to a variety of conditions ranging from non-emergency events which might cause public concern to major events which have actual or potential radiological consequences to large segments of nearby populations.

2.1 SITE DESCRIPTION

The Limerick Generating Station is a fixed nuclear facility operated by Philadelphia Electric Company. The station includes two 1050 MWe Boiling Water Reactor electrical generating units. The station is located in southeastern Pennsylvania on the Schuylkill River about 1.7 miles southeast of the limits of the Borough of Pottstown. The Schuylkill River passes through the site and separates the western portion, which is located in East Coventry Township, Chester County, from the eastern portion, which is partly in Limerick Township and partly in Lower Pottsgrove Township, both in Montgomery County. Major plant structures are in Limerick Township. A ten-mile radius from the plant encompasses a portion of eastern Berks County. This Emergency Plan applies to the operation of Unit 1 during construction of Unit 2, and to both Units upon completion and operation of Unit 2.

2.2 SCOPE

This Emergency Plan is the basis for Philadelphia Electric Company emergency preparedness. Emergency planning objectives are:

1. To establish effective coordination of emergency activities among organizations having a response role.

2. To provide early warning and clear instructions to population-at-risk in the event of a serious radiological emergency.

3. To enable continued assessment of actual or potential consequences both on-site and off-site.

4. To effectively implement emergency measures in the environs.

5. To maintain an adequate state of emergency preparedness.

The overall authority and responsibility for radiological emergency response planning rests with the Office of the Vice President-Electric Production Department. The Director-Emergency Preparedness Section, Nuclear Generation Division is the PECo Emergency Planning Coordinator. The Emergency Planning Coordinator has overall coordination responsibility for development and updating of this Emergency Plan and for coordinating PECo plans with other response organizations.

2.2.1 IMPLEMENTING PROCEDURES

Actions to be taken by PECo in response to emergency conditions are described in implementing procedures which are reviewed and approved by the Plant Operations and Review Committee. These procedures provide the mechanism for response based on the general criteria described in this plan. A listing of Emergency Plan implementing procedures is in Appendix D. Procedures for special event emergencies (e.g., civil disturbances, bomb threats, and breaches in security) are developed separately as part of the site security plan and are held proprietary.

Other station operating and maintenance procedures are developed and issued to provide implementing instructions in various other areas relating to system operations, maintenance, health physics, chemistry, and security and may be implemented in response to actions described in this plan.

2.2.2 OTHER PHILADELPHIA ELECTRIC COMPANY EMERGENCY PLANS

Philadelphia Electric has developed and used for many years an emergency plan which is directed primarily toward generic emergencies such as floods, icing, and severe weather conditions which may affect continuity of electric service to customers. This plan is called Procedures for Electric Service Restoration in Major Emergencies. The methods and equipment developed for such emergencies are available for use when appropriate in responding to emergencies covered by this plan.

Philadelphia Electric Company Corporate Communications Department maintains a plan (refer to Appendix G) for notifying their personnel in the event of emergencies to ensure that the public information channels are rapidly staffed and functioning. In addition, this organization participates routinely in a wide range of public information programs, including coordination with Commonwealth and local agencies in the dissemination of information relative to actions anticipated for the protection of the public.

2.2.3 PARTICIPATING GOVERNMENTAL AGENCIES

Liaison is maintained with governmental agencies to ensure compatibility of related plans. This liaison ensures maintenance of notification channels and understanding of and proper interfaces with personnel and resources of Federal, State, and local agencies. Such agencies include:

a. Pennsylvania Emergency Management Agency

b. Pennsylvania Department of Environmental Resources/Bureau of Radiation Protection

c. Pennsylvania State Police (only for security related actions)

d. Montgomery County Office of Emergency Preparedness and Medical Services

e. Chester County Department of Emergency Services

f. Berks County Emergency Management Agency

g. NRC Region I, Office of Inspection and Enforcement

h. Department of Energy, Brookhaven Area Office

i. State of Maryland

j. State of New Jersey

k. State of Delaware.

Information exchanges between Philadelphia Electric and State and local governments have been important in development of the respective emergency plans and is a continuing effort. The objective of this exchange is to enhance the compatibility of these plans. The plans of Pennsylvania and of the counties within the ten-mile EPZ are considered part of this plan. (Refer to Appendix G.)

Emergency planning for the ingestion pathway is performed primarily at the State level. In addition to Pennsylvania, the States of Maryland, Delaware, and New Jersey are involved for the ingestion EPZ and the plans of these States are considered part of this Plan. (Refer to Appendix G.)

2.2.4 LOCAL SERVICES SUPPORT

The following agencies have, by prior arrangement, agreed to respond to requests for assistance at Limerick Generating Station. Continuing liaison with these agencies ensures maintenance of notification channels and understanding of and proper interfaces with personnel and resources. Refer to Appendix A for agreement letters.

a. Pottstown Memorial Medical Center

b. Conrail-Harrisburg Division

c. Linfield Fire Company

d. Local physicians

e. Canberra/Radiation Management Corporation

f. Radiation Medicine Center - Hospital of University of Pennsylvania

g. Ambulance service.

2.2.5 INDUSTRY SUPPORT

The Institute of Nuclear Power Operations, other utilities, and a broad range of contractors and equipment manufacturers serving the nuclear industry represent a resource which could be called upon by Philadelphia Electric Company, if necessary. The Headquarters Emergency Support Center organization would make arrangements for the necessary assistance from these resources.

3.0 SUMMARY OF THE EMERGENCY PLAN

This Emergency Plan, and its associated implementing procedures, have been established for coping with the various types of emergencies in an orderly, effective manner.

This Emergency Plan establishes the necessary concepts, evaluation and assessment criteria, and protective actions to limit and mitigate the consequences of various emergencies. The plan provides the necessary prearrangements, directions, and organizations so that all station emergencies can be effectively and efficiently resolved in order to safeguard station personnel, the general public, and public property.

Figure 3-1 shows the interfaces among the various PECo emergency centers and groups. Figure 3-2 shows the flow of information among the various PECo and off-site centers and groups. Figure 3-3 is a matrix which shows the responsibilities of various agencies for major functions relating to emergency response.

Faciities, equipment, and trained personnel ensure the capability for implementing the Plan.

3.1 EMERGENCY CLASSIFICATIONS

Emergencies are grouped into four classifications per Federal guidelines. The classifications are in order of increasing severity. Emergency action levels associated with these classifications and the relationships between the classifications and participating organizations are further defined in Section 4 and summarized below.

3.1.1 UNUSUAL EVENT

In this classification are events which are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs. The nature of these events may be of concern, but are below the threshold for emergencies which require State-level response (some local support, such as ambulance service, may be needed). Also included in the classification are certain events which do not have a direct relationship to plant safety but which are reported to

appropriate organizations as a matter of public responsibility, to respond to or prevent public concern, or to keep these organizations informed.

| 3.1.2 ALERT

In this classification are events which are in progress or have occurred which involve actual or potential substantial degradation of the level of safety of the plant. Any releases of radioactive material are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

| 3.1.3 SITE AREA EMERGENCY

In this classification are events which are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

| 3.1.4 GENERAL EMERGENCY

In this classification are events which are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases of radioactive material can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

| 3.2 EMERGENCY DIRECTION AND ASSIGNMENTS

| Section 5 establishes the emergency organization and the
| responsibilities of emergency personnel both on-site and
| off-site. Section 5 also defines the interim and alternate
| directors, coordinators, managers, and team leaders.

| 3.2.1 INITIAL PHASE ORGANIZATION

| When an emergency occurs in the station, the Interim
| Emergency Director, as described in Section 5.2.1.1, is
| responsible for taking immediate action to safeguard
| personnel and equipment. Shift Supervision fills this
| role. Utilizing the implementing procedures, the Interim
| Emergency Director notifies government agencies and
| activates the necessary portions of the emergency

organization consistent with the degree of severity. The Station Superintendent, or in his absence the Assistant Station Superintendent, shall assume the duties of the Emergency Director when on-site and cognizant of the situation.

3.2.2 RECOVERY ORGANIZATION

The recovery organization is directed by the Recovery Manager as described in Section 5.4. The Emergency Director is relieved of responsibilities for emergency functions and resumes normal responsibilities. The Site Emergency Coordinator continues emergency activities as long as necessary. The recovery organization continues as long as support is necessary to place the facility back in normal operation.

3.3 EMERGENCY ACTIONS

This section provides a general functional summary of this Emergency Plan to demonstrate the actions which may be taken in response to emergency conditions. The summary postulates increasingly severe conditions for demonstration purposes without relying on a particular scenario.

In general, the emergency plan encompasses the following basic steps:

a. Detection of the emergency;

b. Assessment of the situation;

c. Initiation of corrective action;

d. Classification of the emergency;

e. Activation of the responding organization(s);

f. Notification of government agencies;

g. Initiation of protective actions;

h. Aid to affected persons;

i. Reentry and recovery.

The overall logic of the Emergency Plan is founded on the above steps. Plant instrumentation and the vigilance of

plant personnel provide the capability to detect emergency conditions. The noted conditions are compared to Emergency Action Levels to classify the emergency, and the classification and nature of the emergency lead to the required notifications and to the activation of applicable responding organizations. The Emergency Plan provides criteria for implementing protective actions and various implementing procedures guide corrective actions. Situation assessment is continuous and participating organizations are informed. Personnel emergencies may occur in any of the emergency classifications and, therefore, provisions are made for medical care, as well as for search and rescue. Basic criteria for reentry and recovery, which are controlled, pre-planned activities, are provided.

3.3.1 UNUSUAL EVENT

Shift Supervision would most likely become aware of conditions corresponding to an Unusual Event by verbal reports, Control Room alarms, or by direct observation of instrumentation or conditions in and around the plant. Assessment of plant status and instrumentation or of verbal reports from the scene focuses on determination of immediate corrective actions to be taken and potential for the condition to become more severe. Immediate actions may include operation of plant systems or activation of appropriate Interim Emergency Teams. The Station Superintendent and other appropriate corporate personnel are notified as soon as practicable regarding the event, the action taken, and current status. The PEMA and the Host County are promptly notified of the Unusual Event (the intention is to notify PEMA and the Host County within 15 minutes of classifying the event). Notification is made to the Nuclear Regulatory Commission.

3.3.2 ALERT

An Alert may be declared upon the occurrence of certain events or due to degradation of conditions originally within the Unusual Event category. Upon declaration of an Alert, the plant is considered to be in an emergency status. The Shift Superintendent assumes the role of Interim Emergency Director, assesses plant conditions, and directs corrective actions. Appropriate Interim Emergency Teams and off-site response agencies (such as the Fire Company) are activated, and local protective action (such as a local plant area evacuation) is taken. Because events within this category have significant potential to become more severe, may occur

over longer time periods, and may require technical analysis to determine corrective action, the Station Superintendent is rapidly notified to activate appropriate Emergency Teams and plant staff technical personnel. The Operational Support Center and the Technical Support Center are activated. The US NRC is notified. The Montgomery County Office of Emergency Preparedness and Medical Services and the PEMA are rapidly and directly notified. The Chester County Department of Emergency Services, the Berks County Emergency Management Agency, are directly notified by the PEMA so that they can alert their organizations. The PEMA alerts the BRP and the BRP contacts the plant to determine the status and makes recommendations to the PEMA in regard to off-site protective actions. The Superintendent-Nuclear Generation and the US NRC are notified. At this point, the emergency organization has the capability to: correct, ameliorate, or contain the adverse condition at the source; provide technical evaluation and operational direction from the Technical Support Center; provide operating manpower from the Operational Support Center; evaluate in-plant radiological conditions; collect and process environmental monitoring devices and samples; monitor for off-site radiological consequences; and provide government agencies the data needed to make decisions related to off-site protective actions.

3.3.3 SITE AREA OR GENERAL EMERGENCY

A Site Area or General Emergency may be declared upon the occurrence of certain events or due to degradation of conditions originally within the Unusual Event or Alert categories. If not accomplished previously, the agencies identified in Section 3.4.2 are rapidly notified. For a General Emergency, appropriate local off-site agencies are directly notifed by PECO. The PEMA notifies these agencies to confirm notification by PECO. When an emergency classification is changed, previously notified agencies are informed of the change by PECO or the PEMA. The Emergency Operations Facility is activated. The Office of the Vice President - Electric Production Department activates the PECo Headquarters Emergency Support Center. The Emergency Operations Facility is activated. The Emergency News Center is activated.

These actions results in: expanding the technical analysis capability to include Philadelphia Electric corporate personnel, Nuclear Steam Supply System Vendor (General Electric), and Architect/Engineer (A/E) Bechtel resources;

expanded analysis of offsite monitoring results; establishment of an extensive logistics support program; and early identification and activation of personnel and material resources from vendors and other utilities. Additional resources, such as General Electric (GE), Bechtel, vendors and contractors, and other utilities, can be activated through the Headquarters Emergency Support Center organization. The US Department of Energy, Brookhaven Area Office may be activated for off-site radiological monitoring.

As indicated by the potential duration of the emergency and/or the extent of off-site assistance needed, an Emergency Support Center may be established, under the direction of the Site Emergency Coordinator, to provide facilities for functions such as security, dosimetry, sample analysis, instrument calibration and repair, and training, as well as for the recovery organization.

3.3.4 RECOVERY

This Emergency Plan defines a recovery organization with the facilities and manpower necessary for in-depth technical analysis, planning, and construction activities which may be associated with longer term actions to maintain the plant in a safe condition and to initiate recovery. The evolution from the initial response organization to the recovery organization is expected to take place after plant conditions are sufficiently stable.

3.4 EMERGENCY FACILITIES

To respond to emergencies, various facilities and equipment have been established and designated. Some facilities and equipment may be used for normal plant operations. Other facilities and equipment are used strictly for emergencies.

3.4.1 FACILITIES

Emergency response facilitieshave been established to ensure work areas are available for the emergency response organization. These facilities include the Operations Support Center, Technical Support Center, Emergency Operations Facility, Headquarters Emergency Support Center and Emergency News Center. Other facilities are available for specific emergency functions. These facilities both on-site and off-site are designed to be accessible, habitable,

and functional. Mobile facilities have been provided where necessary.

3.4.2 EQUIPMENT

Emergency equipment to support emergency organization's activities is available throughout the site and in the emergency facilities. This equipment includes communications equipment, radiological, and non-radiological equipment. Portable and installed equipment is available both on-site and off-site.

3.5 EMERGENCY PLAN TRAINING, DRILLS, AND REVIEW

Training is provided to emergency organization personnel. Personnel are assigned to positions on the basis of experience during normal operations. Training by lecture and drills and exercises is used to familiarize personnel with specific emergency responsibilities.

3.5.1 TRAINING AND EDUCATION

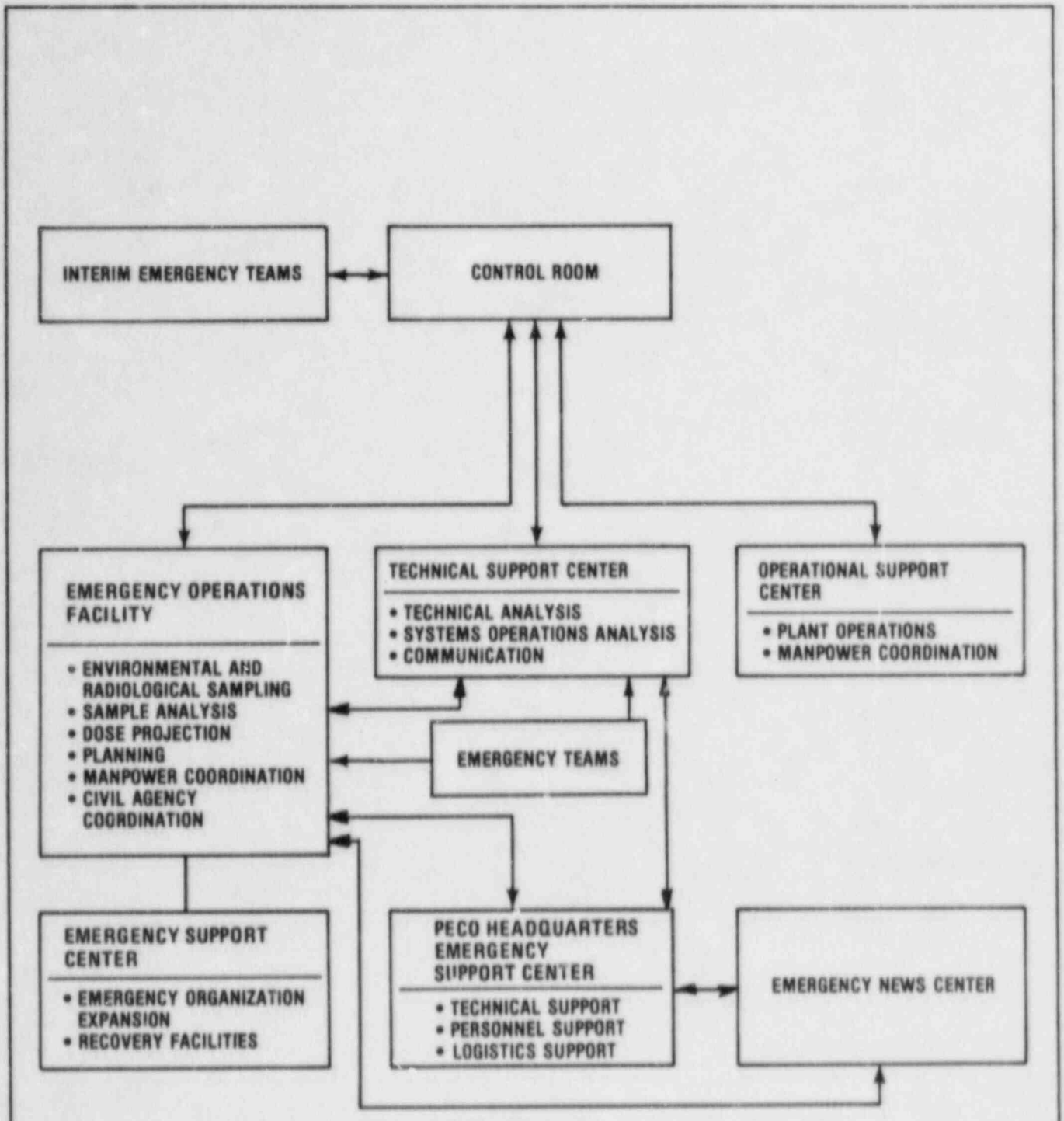
Training and education is provided to familiarize personnel with the emergency plan, their responsibilities, changes in procedures and the emergency plan, and to maintain emergency preparedness. Training and education are applicable to corporate personnel, supporting agency personnel, private citizens, and news media personnel.

3.5.2 DRILLS AND EXERCISES

Drills and exercises are conducted to test the effectiveness, timing, and content of procedures. The drills and exercises also test emergency equipment and the familiarity of personnel with equipment and responsibilities. Drills and exercises may be announced or unannounced and may involve a variety of functions or be limited to one function or organization.

3.5.3 EMERGENCY PLAN REVIEW

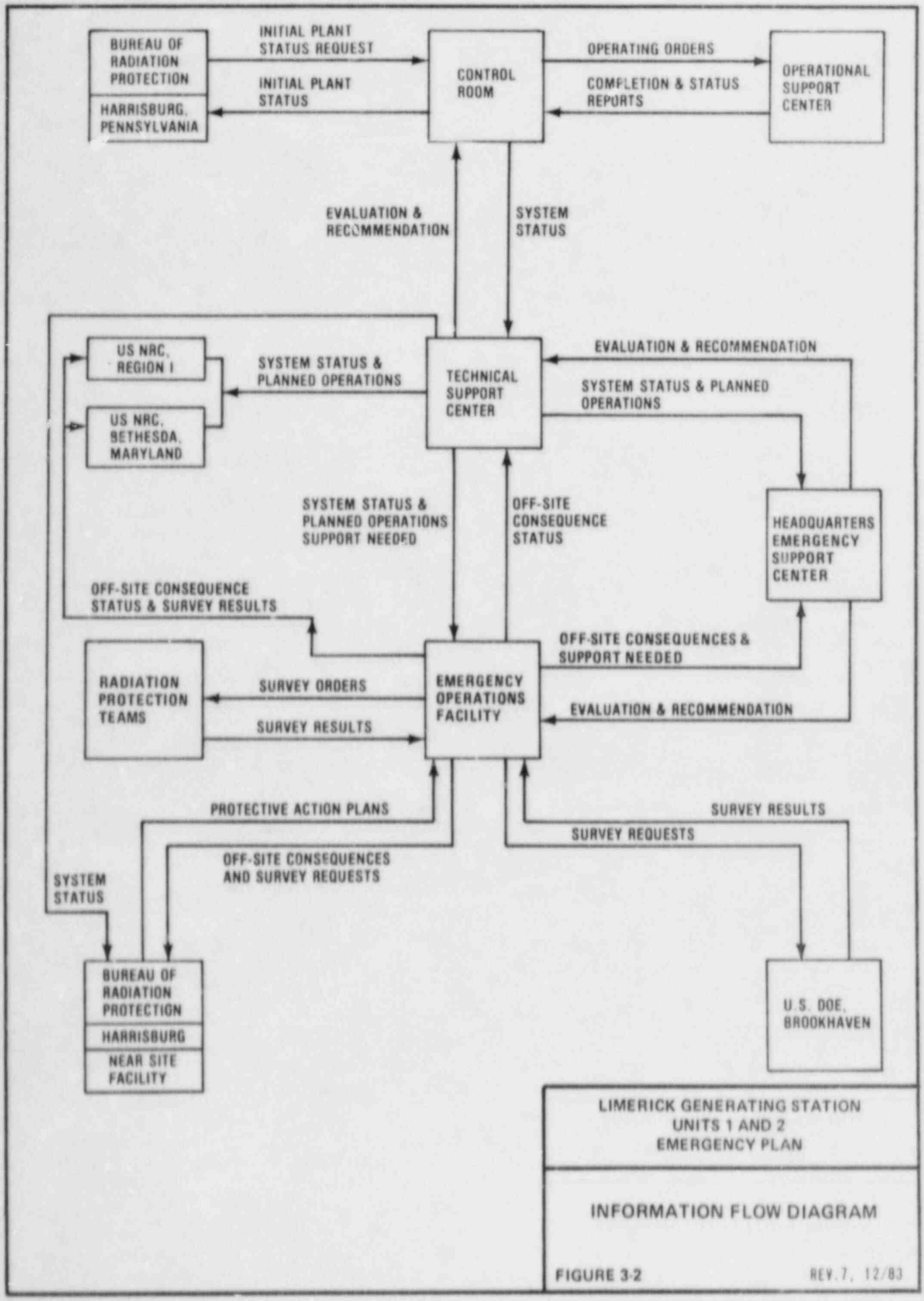
The emergency plan and associated procedures will be reviewed annually. This review will consider effectiveness of the plan and organization; results of drills, exercises, and training; and new or revised regulations.



LIMERICK GENERATING STATION
UNITS 1 & 2
EMERGENCY PLAN

INTERFACE DIAGRAM

FIGURE 3-1 REV.7, 12/83


BUREAU OF RADIATION PROTECTION
HARRISBURG, PENNSYLVANIA
INITIAL PLANT STATUS REQUEST
INITIAL PLANT STATUS
CONTROL ROOM
OPERATING ORDERS
COMPLETION & STATUS REPORTS
OPERATIONAL SUPPORT CENTER
EVALUATION & RECOMMENDATION
SYSTEM STATUS
US NRC, REGION I
US NRC, BETHESDA, MARYLAND
SYSTEM STATUS & PLANNED OPERATIONS
TECHNICAL SUPPORT CENTER
EVALUATION & RECOMMENDATION
SYSTEM STATUS & PLANNED OPERATIONS
SYSTEM STATUS & PLANNED OPERATIONS SUPPORT NEEDED
OFF-SITE CONSEQUENCE STATUS
HEADQUARTERS EMERGENCY SUPPORT CENTER
OFF-SITE CONSEQUENCE STATUS & SURVEY RESULTS
OFF-SITE CONSEQUENCES & SUPPORT NEEDED
RADIATION PROTECTION TEAMS
SURVEY ORDERS
SURVEY RESULTS
EMERGENCY OPERATIONS FACILITY
EVALUATION & RECOMMENDATION
PROTECTIVE ACTION PLANS
SURVEY RESULTS
SURVEY REQUESTS
OFF-SITE CONSEQUENCES AND SURVEY REQUESTS
SYSTEM STATUS
BUREAU OF RADIATION PROTECTION
HARRISBURG
NEAR SITE FACILITY
U.S. DOE, BROOKHAVEN
LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN
INFORMATION FLOW DIAGRAM
FIGURE 3-2
REV. 7, 12/83

	PHILADELPHIA ELECTRIC COMPANY						LOCAL SUPPORT AGENCIE			
	INTERIM EMERGENCY DIRECTOR OR EMERGENCY DIRECTOR	INTERIM EMERGENCY TEAM LEADER OR EMERGENCY TEAM LEADER	SITE EMERGENCY COORDINATOR	TECHNICAL SUPPORT TEAM	PECO HEADQUARTERS EMERGENCY SUPPORT CENTER TEAM	PECO CORPORATE COMMUNICATIONS	CAMBERRA/ RADIATION MANAGEMENT CORPORATION	LOCAL PHYSICIANS	LOCAL AMBULANCE SERVICE OR COUNTY DISPATCHED UNIT	POTTSTOWN
ON-SITE DIRECTION AND CONTROL	P									
ON-SCENE DIRECTION AND CONTROL		P								
COORDINATE ON-SITE AND OFF-SITE GROUPS			P							
OFF-SITE DIRECTION AND CONTROL										
NOTIFICATION TO EMERGENCY GROUPS	P									
NOTIFICATION TO THE PUBLIC										
ACCIDENT TECHNICAL ASSESSMENT	P	P		P	P					
OFF-SITE CONSEQUENCE ASSESSMENT			P		S		P			
OFF-SITE SURVEY COORDINATION			P							
ON-SITE PROTECTIVE ACTION	P									
OFF-SITE PROTECTIVE ACTION	S									
ON-SITE RADIATION EXPOSURE CONTROL	P						S			
OFF-SITE RADIATION EXPOSURE CONTROL										
ON-SITE FIRE CONTROL AND RESCUE	P	P								
ON-SITE EMERGENCY MEDICAL SERVICES	P	P					P	P	P	
PUBLIC EMERGENCY MEDICAL SERVICES										
TRAFFIC CONTROL										
LAW ENFORCEMENT										
SOCIAL SERVICES										
PUBLIC HEALTH AND SANITATION										
PUBLIC INFORMATION						P				
TRANSPORTATION (PECO)			S		P					
TRANSPORTATION (OTHER)										

P — A PRIMARY RESPONSIBILITY OF THIS ENTITY.

S — A SECONDARY OR SUPPORT RESPONSIBILITY OF THIS ENTITY.

MEDICAL CENTER	LIMFIELD FIRE COMPANY OR COUNTY DISPATCHED UNIT	GOVERNMENT AGENCIES						
		PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY (PEMA)	PENNSYLVANIA BUREAU OF RADIATION PROTECTION	PENNSYLVANIA STATE POLICE	OTHER STATE AGENCIES VIA PEMA	U.S. DOE BROOKHAVEN AREA OFFICE	CONRAIL	RISK COUNTIES
		P						S
		P						P
		P						P
			S					
		S	P		S	P		
			P					
		P	S		S			S
		S	P		S			S
	P							
		S			S			P
		S		P	S		P	P
		S		P	S			S
		S			P			S
		S	S		P			S
		P	S		S			S
		S			S			P

LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

RESPONSIBILITIES MATRIX

FIGURE 3-3 REV. 7, 12/83

4.0 EMERGENCY CONDITIONS

Emergency conditions are classified as mutually exclusive categories which cover the entire spectrum of emergencies. Criteria and conditions are specified for recognizing, characterizing, and declaring each emergency classification.

4.1 CLASSIFICATION SYSTEM

Planning is coordinated with Commonwealth and local agencies to ensure that a standard classification system is applied, that communication links are established, that standard nomenclature is used, and that protective actions for different regions around the facility are consistent with the nature of the hazards in these regions.

The classification system provides for implementation of certain actions immediately applicable to a specific condition, and for changing the response to the appropriate level of classification in the event of a change in the severity of the condition. Other emergency actions are taken as applicable to the specific event. The Interim Emergency Director or the Emergency Director determines the emergency classification and the actions to be taken.

The general definitions of the emergency classes, as provided in NUREG-0654, are in Section 3.1 of this Emergency Plan. Emergency action levels (EAL's) are used to translate the general definitions into specific conditions which can be readily identified during operations. Where appropriate, EAL's are based upon specific instrument readings or alarms and instrument capabilities or limitations which should influence the operator response.

Table 4-2 provides the EALs for declaring the various classifications, lists the notifications required, and summarizes the organizational responses. An important aspect of Table 4-2 is the use of EALs which consider both existing consequences of accident conditions and the potential for consequences which may occur due to an event in the plant. For example, an EAL may be a specific reading on a ventilation exhaust radiation monitor, which is an indication of existing consequences; or an EAL may be a set of in-plant conditions which, if not corrected, represent a potential for consequences to occur which would subsequently be detected by the ventilation exhaust monitor. The EALs are incorporated in Alarm Response Cards, plant procedures, Technical Specifications, or a combination of these methods.

4.2 SPECTRUM OF POSTULATED ACCIDENTS

The Limerick Generating Station FSAR describes the design responses of the plant to a wide range of postulated malfunctions or equipment failures and includes estimates of resultant radiological consequences. This section of the Emergency Plan demonstrates that the resultant radiological consequences of such postulated design basis accidents (limiting faults) are encompassed by the emergency plans. The adequacy of this Emergency Plan is demonstrated by applying its provisions and noting that the provisions encompass the estimated radiological consequences of the postulated accidents. Such provisions include:

a) Instrumentation and mechanisms for prompt detection and continuing assessment of radiological hazards.

b) Sufficient manpower, equipment, and technical expertise to implement necessary actions.

c) Capability for notification to appropriate off-site organizations.

d) Pre-planned protective action methods.

4.2.1 CONTROL ROD DROP ACCIDENT (CRDA)

This accident is postulated to occur with the reactor in the hot startup condition and is assumed to result in failure of a number of fuel rods. The transport pathway consists of carryover with steam to the turbine condenser prior to main steam isolation valve (MSIV) closure and leakage from the condenser to the turbine enclosure and, subsequently, to the environment.

Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes main steam line radiation monitors, turbine enclosure Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Notification to applicable off-site organizations

d) Alert Notification

e) Activation of plant staff emergency assignments.

4.2.2 INSTRUMENT LINE PIPE BREAK

This accident is postulated to occur with the reactor in an operating status. A circumferential rupture of an instrument line which is connected to the primary coolant system is postulated to occur outside primary containment but inside secondary containment. The transport pathway is from secondary containment through the standby gas treatment system (SGTS) to the environment. The SGTS draws on the Reactor Enclosure Recirculation System. Prompt detection by the operator is afforded by radiation, temperature, and process variable instrumentation. Continued assessment of the radiological hazard is provided by Area Radiation Monitors (ARMs), ventilation process radiation monitors, exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which include:

a) Local Evacuation

b) Activation of plant staff emergency assignments

c) Report of Unusual Event to applicable off-site organization.

4.2.3 MAIN STEAM LINE BREAK

This accident is postulated to occur with the reactor in an operating status. A complete severance of one of the four main steam lines outside primary containment is postulated. The release is assumed to be directly to the environment.

Due to the short duration and direct release to the environment, the activity of the actual release is not monitored. However, an estimate of the resultant doses can

be made by scaling the design basis doses in Table 4-1 (which are based upon an equilibrium coolant activity consistent with a 30-minute offgas release rate of 0.35 curies/second) with the actual offgas release rate prior to the accident. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams. Windspeed and direction data are available in the Control Room.

The Emergency Director designates protective actions commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the short-term duration and include:

a) Local Evacuation

b) Site Emergency

c) Site Evacuation. Due to the short-term duration, consideration may be given to the benefits of remaining within station enclosures and evacuating or sheltering those personnel who are outside.

d) Activation of plant staff emergency assignments

e) Notification to applicable off-site organizations.

4.2.4 LOSS OF COOLANT ACCIDENT (LOCA)

This accident is postulated to occur with the reactor in an operating status. A complete circumferential break of a recirculation loop pipeline is assumed. The transport pathway consists of release to the primary containment and leakage to the secondary containment with discharge to the environment through the SGTS. The SGTS draws on the Reactor Enclosure Recirculation System.

In addition to system instrumentation and alarms, prompt detection and continuing assessment instrumentation for the radiological hazard includes ventilation process radiation monitors, containment post-accident monitors, exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with projected and/or measured doses. Table

4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which include:

a) Site Evacuation

b) Activation of plant staff emergency assignments

c) Site Emergency notifications

d) Notification to applicable off-site organizations.

4.2.5 FEEDWATER LINE BREAK OUTSIDE PRIMARY CONTAINMENT

This accident is postulated to occur as a break in the condensate pump common discharge header. The transport pathway includes liquid release from the pipe break, carryover to the turbine enclosure atmosphere due to flashing and partitioning, and unfiltered release to the environment through the turbine enclosure ventilation system. Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Limerick Emergency Director includes turbine enclosure Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective actions commensurate with the projected and/or measured doses. Table 4-1 summarizes dose estimates based upon a conservative assessment of this accident. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Activation of plant staff emergency assignments

d) Report of Unusual Event to applicable off-site agencies.

4.2.6 OFFGAS TREATMENT SYSTEM FAILURE

This accident is postulated to result in the rupture of the offgas treatment system pressure boundary. The transport pathway is direct release from the failed component to the

environment through the radwaste enclosure ventilation system.

Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Partial Plant Evacuation

b) Activation of plant staff emergency assignments

c) Alert Notification

d) Notification to appropriate off-site organizations

e) Site Emergency notifications.

4.2.7 AIR EJECTOR LINE FAILURE

This accident is postulated as a failure in the line leading from the steam jet air ejector to the offgas treatment system. The transport pathway is from the turbine enclosure to the environment through the ventilation system.

Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Activiation of plant staff emergency assignments

d) Alert Notification

e) Notification to appropriate off-site organizations

f) Site Emergency notifcations.

4.2.8 LIQUID RADWASTE SYSTEM FAILURE

This accident is postulated as failure of the reactor water cleanup (RWCU) phase separator in the radwaste enclosure. The transport pathway is from the radwaste enclosure to the environment through the radwaste ventilation system over a two-hour period.

Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes radwaste enclosure Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Team.

The Emergency Director designates protective actions commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Activation of plant staff emergency assignments

d) Alert Notifications.

4.2.9 FUEL HANDLING ACCIDENT

This accident is postulated as the drop of a spent fuel bundle into the reactor core and results in failure of a number of fuel rods. The transport pathway is from secondary containment to the environment through the SGTS over a two-hour period. The SGTS draws from the Reactor Enclosure Recirculation System. Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes

Area Radiation Monitors (ARMs), ventilation process radiation monitors, exhaust monitor, and windspeed/direction data. Implementing procedures provide guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective actions commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Activation of plant staff emergency assignments

d) Alert Notifications

e) Notification to applicable off-site organizations

f) Site Emergency notifications.

4.2.10 RECIRCULATION PUMP SEIZURE

This postulated accident is assumed to occur as the result of an unspecified, instantaneous stoppage of one recirculation pump shaft while the reactor is operating at 105% nuclear boiler rated power. This event does not result in an uncontrolled release to the environment.

Control room instrumentation and controls provide the means to detect this event and to control the reactor at the new steady state operating condition. Shift supervision would notify the Station Superintendent and Unusual Event notifications would be made.

4.2.11 RECIRCULATION PUMP SHAFT BREAK

This postulated accident is bounded by the more limiting case of recirculation pump seizure and does not result in an uncontrolled release to the environment.

Control room instrumentation and controls provide the means to detect this event and to maintain reactor vessel water level after reactor scram. Shift supervision would notify the Station Superintendent and Unusual Event notifications would be made.

4.0 EMERGENCY CONDITIONS

Emergency conditions are classified as mutually exclusive categories which cover the entire spectrum of emergencies. Criteria and conditions are specified for recognizing, characterizing, and declaring each emergency classification.

4.1 CLASSIFICATION SYSTEM

Planning is coordinated with Commonwealth and local agencies to ensure that a standard classification system is applied, that communication links are established, that standard nomenclature is used, and that protective actions for different regions around the facility are consistent with the nature of the hazards in these regions.

The classification system provides for implementation of certain actions immediately applicable to a specific condition, and for changing the response to the appropriate level of classification in the event of a change in the severity of the condition. Other emergency actions are taken as applicable to the specific event. The Interim Emergency Director or the Emergency Director determines the emergency classification and the actions to be taken.

The general definitions of the emergency classes, as provided in NUREG-0654, are in Section 3.1 of this Emergency Plan. Emergency action levels (EAL's) are used to translate the general definitions into specific conditions which can be readily identified during operations. Where appropriate, EAL's are based upon specific instrument readings or alarms and instrument capabilities or limitations which should influence the operator response.

Table 4-2 provides the EALs for declaring the various classifications, lists the notifications required, and summarizes the organizational responses. An important aspect of Table 4-2 is the use of EALs which consider both existing consequences of accident conditions and the potential for consequences which may occur due to an event in the plant. For example, an EAL may be a specific reading on a ventilation exhaust radiation monitor, which is an indication of existing consequences; or an EAL may be a set of in-plant conditions which, if not corrected, represent a potential for consequences to occur which would subsequently be detected by the ventilation exhaust monitor. The EALs are incorporated in Alarm Response Cards, plant procedures, Technical Specifications, or a combination of these methods.

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The Limerick Generating Station FSAR describes the design responses of the plant to a wide range of postulated malfunctions or equipment failures and includes estimates of resultant radiological consequences. This section of the Emergency Plan demonstrates that the resultant radiological consequences of such postulated design basis accidents (limiting faults) are encompassed by the emergency plans. The adequacy of this Emergency Plan is demonstrated by applying its provisions and noting that the provisions encompass the estimated radiological consequences of the postulated accidents. Such provisions include:

a) Instrumentation and mechanisms for prompt detection and continuing assessment of radiological hazards.

b) Sufficient manpower, equipment, and technical expertise to implement necessary actions.

c) Capability for notification to appropriate off-site organizations.

d) Pre-planned protective action methods.

4.2.1 CONTROL ROD DROP ACCIDENT (CRDA)

This accident is postulated to occur with the reactor in the hot startup condition and is assumed to result in failure of a number of fuel rods. The transport pathway consists of carryover with steam to the turbine condenser prior to main steam isolation valve (MSIV) closure and leakage from the condenser to the turbine enclosure and, subsequently, to the environment.

Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes main steam line radiation monitors, turbine enclosure Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Notification to applicable off-site organizations

d) Alert Notification

e) Activation of plant staff emergency assignments.

4.2.2 INSTRUMENT LINE PIPE BREAK

This accident is postulated to occur with the reactor in an operating status. A circumferential rupture of an instrument line which is connected to the primary coolant system is postulated to occur outside primary containment but inside secondary containment. The transport pathway is from secondary containment through the standby gas treatment system (SGTS) to the environment. The SGTS draws on the Reactor Enclosure Recirculation System. Prompt detection by the operator is afforded by radiation, temperature, and process variable instrumentation. Continued assessment of the radiological hazard is provided by Area Radiation Monitors (ARMs), ventilation process radiation monitors, exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which include:

a) Local Evacuation

b) Activation of plant staff emergency assignments

c) Report of Unusual Event to applicable off-site organization.

4.2.3 MAIN STEAM LINE BREAK

This accident is postulated to occur with the reactor in an operating status. A complete severance of one of the four main steam lines outside primary containment is postulated. The release is assumed to be directly to the environment.

Due to the short duration and direct release to the environment, the activity of the actual release is not monitored. However, an estimate of the resultant doses can

be made by scaling the design basis doses in Table 4-1 (which are based upon an equilibrium coolant activity consistent with a 30-minute offgas release rate of 0.35 curies/second) with the actual offgas release rate prior to the accident. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams. Windspeed and direction data are available in the Control Room.

The Emergency Director designates protective actions commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the short-term duration and include:

a) Local Evacuation

b) Site Emergency

c) Site Evacuation. Due to the short-term duration, consideration may be given to the benefits of remaining within station enclosures and evacuating or sheltering those personnel who are outside.

d) Activation of plant staff emergency assignments

e) Notification to applicable off-site organizations.

4.2.4 LOSS OF COOLANT ACCIDENT (LOCA)

This accident is postulated to occur with the reactor in an operating status. A complete circumferential break of a recirculation loop pipeline is assumed. The transport pathway consists of release to the primary containment and leakage to the secondary containment with discharge to the environment through the SGTS. The SGTS draws on the Reactor Enclosure Recirculation System.

In addition to system instrumentation and alarms, prompt detection and continuing assessment instrumentation for the radiological hazard includes ventilation process radiation monitors, containment post-accident monitors, exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with projected and/or measured doses. Table

4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which include:

a) Site Evacuation

b) Activation of plant staff emergency assignments

c) Site Emergency notifications

d) Notification to applicable off-site organizations.

4.2.5 FEEDWATER LINE BREAK OUTSIDE PRIMARY CONTAINMENT

This accident is postulated to occur as a break in the condensate pump common discharge header. The transport pathway includes liquid release from the pipe break, carryover to the turbine enclosure atmosphere due to flashing and partitioning, and unfiltered release to the environment through the turbine enclosure ventilation system. Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Limerick Emergency Director includes turbine enclosure Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective actions commensurate with the projected and/or measured doses. Table 4-1 summarizes dose estimates based upon a conservative assessment of this accident. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Activation of plant staff emergency assignments

d) Report of Unusual Event to applicable off-site agencies.

4.2.6 OFFGAS TREATMENT SYSTEM FAILURE

This accident is postulated to result in the rupture of the offgas treatment system pressure boundary. The transport pathway is direct release from the failed component to the

environment through the radwaste enclosure ventilation system.

Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Partial Plant Evacuation

b) Activation of plant staff emergency assignments

c) Alert Notification

d) Notification to appropriate off-site organizations

e) Site Emergency notifications.

4.2.7 AIR EJECTOR LINE FAILURE

This accident is postulated as a failure in the line leading from the steam jet air ejector to the offgas treatment system. The transport pathway is from the turbine enclosure to the environment through the ventilation system.

Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective action commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Activiation of plant staff emergency assignments

d) Alert Notification

e) Notification to appropriate off-site organizations

f) Site Emergency notifcations.

4.2.8 LIQUID RADWASTE SYSTEM FAILURE

This accident is postulated as failure of the reactor water cleanup (RWCU) phase separator in the radwaste enclosure. The transport pathway is from the radwaste enclosure to the environment through the radwaste ventilation system over a two-hour period.

Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes radwaste enclosure Area Radiation Monitors (ARMs), ventilation exhaust monitor, and windspeed/direction data. Implementing procedures include guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Team.

The Emergency Director designates protective actions commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Activation of plant staff emergency assignments

d) Alert Notifications.

4.2.9 FUEL HANDLING ACCIDENT

This accident is postulated as the drop of a spent fuel bundle into the reactor core and results in failure of a number of fuel rods. The transport pathway is from secondary containment to the environment through the SGTS over a two-hour period. The SGTS draws from the Reactor Enclosure Recirculation System. Regarding the radiological hazard, prompt detection and continuing assessment instrumentation available to the Emergency Director includes

Area Radiation Monitors (ARMs), ventilation process radiation monitors, exhaust monitor, and windspeed/direction data. Implementing procedures provide guidance for dose projections and may be supplemented by data obtained from the Radiation Protection Teams.

The Emergency Director designates protective actions commensurate with the projected and/or measured doses. Table 4-1 summarizes maximum dose estimates. The adequacy of this Emergency Plan is demonstrated by applying its provisions which recognize the sequence of events and include:

a) Local Evacuation

b) Partial Plant Evacuation

c) Activation of plant staff emergency assignments

d) Alert Notifications

e) Notification to applicable off-site organizations

f) Site Emergency notifications.

4.2.10 RECIRCULATION PUMP SEIZURE

This postulated accident is assumed to occur as the result of an unspecified, instantaneous stoppage of one recirculation pump shaft while the reactor is operating at 105% nuclear boiler rated power. This event does not result in an uncontrolled release to the environment.

Control room instrumentation and controls provide the means to detect this event and to control the reactor at the new steady state operating condition. Shift supervision would notify the Station Superintendent and Unusual Event notifications would be made.

4.2.11 RECIRCULATION PUMP SHAFT BREAK

This postulated accident is bounded by the more limiting case of recirculation pump seizure and does not result in an uncontrolled release to the environment.

Control room instrumentation and controls provide the means to detect this event and to maintain reactor vessel water level after reactor scram. Shift supervision would notify the Station Superintendent and Unusual Event notifications would be made.

4.2.10 RECIRCULATION PUMP SEIZURE

This postulated accident is assumed to occur as the result of an unspecified, instantaneous stoppage of one recirculation pump shaft while the reactor is operating at 105% nuclear boiler rated power. This event does not result in an uncontrolled release to the environment.

Control room instrumentation and controls provide the means to detect this event and to control the reactor at the new steady state operating condition. Shift supervision would notify the Station Superintendent and Unusual Event notifications would be made.

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Control room instrumentation and controls provide the means to detect this event and to maintain reactor vessel water level after reactor scram. Shift supervision would notify the Station Superintendent and Unusual Event notifications would be made.

TABLE 4-1

MAXIMUM ESTIMATED DOSES RESULTING FROM
DESIGN BASIS ACCIDENTS (LIMITING FAULTS)(1)

Postulated Accident		Maximum Estimated Dose (MREM) Exclusion Area Boundary (731 Meters) (0-2 Hours)	Low Population Zone (LPZ) (2043 Meters) (30 Days)
Control Rod Drop Accident (CRDA)	Whole Body	40.6	14.5
	Thyroid	324	619
Instrument Line Break	Whole Body	0.0003	0.0001
	Thyroid	0.039	0.0347
Main Steam Line (MSL) Break (3)	Whole Body	10.4	1.43
	Thyroid	1070	243
Loss of Coolant	Whole Body	303	1090
	Thyroid	33.6	103
Feedwater Line Break (2)(3)	Whole Body	0.067	0.0114
	Thyroid	8.99	1.50
Offgas Treat. Sys. Failure (3)	Whole Body	496	68.2
	Thyroid	0	0
Air Ejector Line Break (3)	Whole Body	230	31
	Thyroid	0	0
Liq. Radwaste Sys. Failure (3)	Whole Body	5.25	0.725
	Thyroid	2830	391
Fuel Handling (3)	Whole Body	400	105
	Thyroid	30.4	7.95

(1) These figures were extracted directly from the FSAR, Chapter 15. Tables used were: Table 15.4-16(CRDA), Table 15.6-7 (Instr. Line Break),Table 15.6-12 (MSL Break), Table 15.6-20 (LOCA), Table 15.6-26 (Feedwater Line Break), Table 15.7-9B (Offgas Treatment Sys. Failure), Table 15.7-9 (Air Ejector Break), Table 15.7-14 (Liq. Radwaste Sys. Failure) Table 15.7-21 (Fuel Handling)

(2) Data results are from the realistic analysis presented in the FSAR, Chapter 15.

(3) LPZ dose is 2-hour dose due to duration of accident.

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5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

The organizations, agencies, teams, and individuals having emergency response functions are described in this section. The organization capable of responding includes:

a) Interim Emergency Teams, designated by function and consisting of on-shift personnel. These teams are responsible for initiating emergency action.

b) Emergency Teams, designated by function and consisting of plant staff personnel. These teams are responsible for responding to emergencies and relieving the Interim Emergency Teams.

c) PECo Corporate Support. Specific functions are assigned to management, technical, and administrative personnel at PECo headquarters and other offices to support emergency responses.

d) Local Services Support. Agreements have been reached for the provision of certain services, such as ambulance and firefighting, from local agencies.

e) Federal, State, and local government agencies having emergency preparedness responsibilities.

The resources described above are utilized through an initial response phase organization and a recovery response phase organization. Implementation of the initial response phase organization may include all of these resources.

Emergency conditions may require a longer term organization than that provided for the immediate response to the emergency. Therefore, this Plan provides for transition to a recovery response phase organization which is capable of continuous management and implementation of large-scale resources involved in planning, plant modification, and recovery/restoration. When the recovery response phase organization is implemented, certain elements of the initial response phase organization are expected to be retained.

5.1 NORMAL PLANT ORGANIZATION

The Station Organization Chart for Limerick Generating Station (Figure 5-1) shows the composition of the operating shift crew. The minimum shift complement for LGS Units 1 and 2 consists of operating personnel, a shift technical advisor who reviews plant status and provides expert advice to shift supervision, and security guards. From time to time additional personnel from the operating or maintenance organizations may be on-site during backshifts. Some normal plant staff members are assigned emergency organization positions, others are available as additional resources or continue their normal duties.

The Shift Superintendent and the operating shift crew are responsible for normal operation of the plant and for responding to emergency conditions, in which case the Shift Superintendent assumes the role of Interim Emergency Director and has the authority and responsibility to declare appropriate emergency classifications. The Shift Supervisor assumes the duties of the Shift Superintendent when necessary.

On a daily basis, the Station Superintendent or his designated alternate (normally the Assistant Station Superintendent) shall be on-call. He shall respond to emergencies upon notification from the Shift Superintendent and shall activate Emergency Teams when needed.

5.2 ON-SITE EMERGENCY ORGANIZATION

Under emergency circumstances, the Shift Superintendent assumes the role of Interim Emergency Director and activates appropriate portions of the emergency organization. Figure 5-2 shows the composition of the Interim Emergency Teams and Emergency Teams to demonstrate the initial response phase capability of the on-site organization. Figure 5-3 is a diagram of the communication method to activate this organization. Figure 5-4 shows the initial phase organization. Figure 5-5 shows the overall emergency organization staffing. Figure 5-6 shows the Recovery Response Phase organization.

5.2.1 DIRECTION AND COORDINATION

Direction and coordination of the initial emergency response are provided by the Interim Emergency Director. The Emergency Director, upon arrival, and when thoroughly cognizant of the situation, relieves the Interim Emergency Director.

Direction and coordination of on-scene emergency actions under the Interim Emergency Director are the responsibilities of the Interim Emergency Team Leaders until relieved by the Emergency Team Leaders. Team Leaders shall

report status and the effectiveness of corrective actions to the Emergency Director or Site Emergency Coordinator.

Coordination among the plant staff and other portions of the emergency organization is the responsibility of the Site Emergency Coordinator.

5.2.1.1 INTERIM EMERGENCY DIRECTOR

The Interim Emergency Director is the Shift Superintendent. The alternate is the Shift Supervisor. These positions are filled 24 hours per day on rotating shifts. It is Philadelphia Electric Company policy that the assessment, declaration of emergency conditions, immediate response, activation of the emergency organization, off-site notifications, recommendations for off-site protective actions, and implementation of on-site corrective and protective measures, as described in this Plan, are the responsibility of the Interim Emergency Director, until relieved of those responsibilities by the Emergency Director. The duties of the Interim Emergency Director include:

a) Verify the existence of an emergency, classify the emergency, and decide that notifications are to be made.

b) Remain in the Control Room area and maintain authority to direct actions during the incident.

c) Notify plant personnel and activate appropriate portions of the emergency organization.

d) Notify off-site organizations and agencies.

e) Verify proper operation of plant systems and monitors.

f) Perform assessment actions and monitor the effects of the emergency.

g) Provide status and assessment information to appropriate off-site emergency response agencies such as NRC, PEMA, and BRP.

h) Provide recommendations for protective actions directly to Commonwealth officials or, if warranted in a General Emergency, to County officials. Protective action recommendations will be determined in accordance with applicable LGS procedures and Commonwealth plans such that in a General Emergency direct recommendations will be provided.

i) Implement the provisions of this Plan and applicable plant procedures. Regardless of existing plans, the judgement of the Interim Emergency Director plays a vital role in any emergency, and may in some cases take precedence over previously proposed action.

j) Initiate protective measures on-site. The safety and well-being station personnel are the responsibility of the Interim Emergency Director. No planned radiation exposures in excess of normal station administrative guides are permitted without the authorization of the Interim Emergency Director.

k) Strictly enforce existing procedures regarding Control Room access and formality in order to prevent crowding and to ensure that the line of command remains clear.

Items a,b,h,i,j,k are not delegated to other segments of the emergency organizations. The remaining items maybe carried out by other emergency personnel under the direction of the Interim Emergency Director. When notified by the Interim Emergency Director, other emergency organizations are expected to fulfill their roles as described in this Emergency Plan.

5.2.1.2 EMERGENCY DIRECTOR

The Emergency Director is the Station Superintendent. The alternate is the Assistant Station Superintendent. The Emergency Director assumes his duties as soon as on-site and thoroughly cognizant of the situation. The Emergency Director will normally report to the Technical Support Center but has the prerogative of going to the Control Room. The Emergency Director has direct responsibility for plant operations and reports to the Site Emergency Coordinator, if activated. The duties of the Emergency Director include:

a) Verify the classification of the emergency.

b) Direct actions of emergency organization during the incident.

c) Confer with shift supervision regarding plant status.

d) Activate appropriate portions of the emergency organization as indicated by the existing conditons, and potential conditions.

e) Confirm the activation of appropriate emergency facilities.

f) Direct the performance of notifications and assessment actions.

g) Provide recommendations for protective actions in accordance with implementing procedures directly to Commonwealth officials or when warranted under emergency conditions to County officials. These recommendations will be provided in a General Emergency.

h) Assume communication responsibilities to off-site support organizations until the Site Emergency Coordinator assumes this responsibility.

i) Confer with the Site Emergency Coordinator in regard to necessary additional facilities, equipment, supplies, or technical services which may be needed and keep the Site Emergency Coordinator informed of plant status and operational plans.

j) Implement the provisions of this plan and applicable plant procedures.

k) Confer with shift supervision regarding protective measures on-site.

l) Determine the necessity for and timing of emergency organization evolution from the initial response phase to the longer term recovery organization in coordination with the Site Emergency Coordinator, the Emergency Support Officer, and the Federal and State Government Liaison.

The items a,b,c,e,f,g,h,i,k and l,are not delegated to other segments of the emergency organization. The remaining items may be carried out by other emergency personnel under the direction of the Emergency Director.

5.2.1.3 SITE EMERGENCY COORDINATOR

The Site Emergency Coordinator is the Superintendent - Nuclear Generation Division. The primary alternate is the Superintendent-Nuclear Services Division, the secondary alternate is the Station Superintendent-Peach Bottom Atomic Power Station. The Site Emergency Coordinator, when activated at a Site or General Emergency, normally goes to the Emergency Operations Facility. The Site Emergency Coordinator assumes overall control of the emergency organization from the (Interim) Emergency Director and is responsible for:

a) During EOF activation, determining readiness of staff to assume responsibilities assigned to the EOF.

b) Obtaining information on status of emergency conditions from TSC and when fully cognizant of the situation, inform TSC that the EOF is assuming

responsibility for control of the integrated emergency response, informing the various response groups when the EOF has assumed full responsibility.

c) Maintaining awareness of plant status and off-site consequences of the emergency.

d) Coordinating between the on-site organization and the off-site organization in regard to obtaining necessary additional facilities, equipment, supplies, personnel, or technical services.

e) Managing and supervising the Emergency Operations Facility.

f) Serving as the primary contact for Federal and Commonwealth radiological emergency response agencies.

g) Providing management direction for the development of the Emergency Support Center, if needed.

h) Providing direction for PECo emergency organization personnel who are dispatched to the plant vicinity (such as Public Information representatives and Stores Division personnel) and for foreign crews activated by Philadelphia Electric Company.

i) Keeping the Emergency Support Officer and the Emergency Director, and other appropriate emergency personnel apprised of actions taken and the status of off-site consequences.

j) Determining the necessity for and timing of emergency organization evolution from the initial response phase to the longer term recovery phase in coordination with the Emergency Director, Emergency Support Officer, and the Federal and State Government Liaison.

k) Informing the various emergency response groups when the recovery response phase organization is to be implemented.

5.2.1.4 Operations Support Center Coordinator

The Operations Support Center Coordinator is the senior shift person (other than Control Room personnel) not responsible to be on-scene for the existing emergency condition. The Interim OSC Coordinator reports to the Shift Supervisor (unless otherwise directed) and is responsible to:

a) Activate the OSC and establish communications with the Control Room.

b) Remain in the OSC to receive operational orders (unless otherwise directed by Shift Supervision).

c) Maintain accountability of personnel reporting to the OSC.

d) Coordinate and direct the use of personnel reporting to the OSC. Implement actions directed by Shift Supervision.

e) Coordinate and ensure timely relief of non-managerial personnel (i.e. survey teams, fire teams, etc.) and keep the Control Room informed of personnel available.

f) Ensure that adequate materials (such as Anti-C's, tape, drop-lights, etc.) are available to support station personnel.

g) Monitor habitability of OSC and information Emergency Director of adverse changes.

5.2.2 INTERIM EMERGENCY TEAMS AND EMERGENCY TEAMS

The on-site emergency response functions are assigned to various teams. Interim Emergency teams consist of designated members of the operating shift crew. Emergency Teams consist of designated members of the plant staff.

The on-site emergency organization is based upon the philosophy that the operating shift crew is capable of responding to emergencies at all times and is directly responsible for implementing emergency action. The plant staff emergency assignments are made to ensure that the plant staff can rapidly assist or relieve the shift crew of their emergency responsibilities during normal working hours and during night shifts when the plant staff is normally away from the site. Rapid recall of the plant staff members who are assigned to emergency teams is accomplished by contact with station management or team leaders who are then responsible for activating and leading their respective teams (refer to Figure 5-3). The judgement of the Interim Emergency Director and the guidance of procedures which implement this Plan are factors which determine the extent of the plant staff recall and the degree to which the plant staff assists or relieves the operating shift crew of emergency responsibilities. The planning basis for personnel and facilities is shown in Figure 5-5.

5.2.2.1 INTERIM EMERGENCY TEAMS

Figure 5-2 lists the Interim Emergency Teams and the composition of the teams.

5.2.2.1.1 INTERIM RADIATION PROTECTION TEAM

The responsibilities of this team are:

a) Radiation and airborne survey sample analysis.

b) Establish controlled access areas to contain or limit the spread of radioactive contamination.

c) Provide radiological assistance to other Interim Emergency Teams if needed.

5.2.2.1.2 FIRE BRIGADE

The responsibilities of the Fire Brigade are:

a) Respond to fire alarms with appropriate equipment and protective clothing.

b) Advise the Interim Emergency Director or Emergency Director as to the need for assistance from the plant staff or from offsite firefighting groups.

c) Coordinate the actions of off-site firefighting groups if on-site assistance is requested.

5.2.2.1.3 INTERIM PERSONNEL SAFETY TEAM

The responsibilities of this team are:

a) Administer first-aid and advise the Interim Emergency Director or Emergency Director as to the need for assistance from off-site medical resources.

b) Assist in evacuation and personnel accountability.

c) Conduct search and rescue for missing persons at the direction of the Interim Emergency Director or Emergency Director.

d) Monitor personnel for contamination and initiate decontamination.

e) Perform on-site radiation and airborne contamination surveys.

5.2.2.1.4 INTERIM CHEMISTRY SAMPLING AND ANALYSIS TEAM

The responsibilities of this team are:

a) Obtain chemical samples in accordance with implementing procedures and perform appropriate analyses.

b) Provide analytical results and appropriate recommendations to the Interim Emergency Director or Emergency Director.

5.2.2.1.5 INTERIM SECURITY TEAM

The responsibilities of the Security forces are:

a) Assist in controlling personnel during evacuations.

b) Personnel accountability. Report to the Interim Emergency Director or Emergency Director when all personnel are accounted for after evacuation or report missing persons.

c) Secure access roads in accordance with implementing procedures and implement emergency admittance procedures.

d) Maintain plant security.

5.2.2.1.6 INTERIM DAMAGE TEAM

The responsibilities of this team are:

a) Assess plant conditions after events which may cause significant plant damage (such as earthquake or explosion) and report conditions to Shift Supervision.

b) Perform emergency repairs.

5.2.2.2 EMERGENCY TEAMS

Figure 5-2 lists the Emergency Teams and the composition of the teams. In addition to those individuals with specific emergency organization assignments, other plant staff personnel are available at the request of the Interim Emergency Director or Emergency Director.

5.2.2.2.1 RADIATION PROTECTION TEAM

The Radiation Protection Team Leader ensures the coordination and proper operation of each functional group within the team. The Leader also analyzes results and makes recommendations to the Site Emergency Coordinator and to the Emergency Director.

The Radiation Protection Team is divided into the following functional groups:

a) Field Survey Group - The Field Survey Group leader provides the survey groups with appropriate emergency survey equipment and initiates field

surveys. The leader directs the survey groups, receives survey results, and plots/records results as applicable. The Field Survey Groups perform off-site surveys and collect environmental samples as directed by the Field Survey Group leader. This Group will normally respond to the Technical Support Center for initial assembly.

b) Personnel Dosimetry Group - This group assigns, collects, and processes dosimetric devices for personnel not covered by the normal plant dosimetry program. The group shall record and report personnel exposures and shall coordinate whole body counting, bioassay, and respirator fit testing when required.

c) Plant Survey Group - This group performs on-site and inplant surveys and assists or relieves the Interim Radiation Protection Team. Unless otherwise directed, survey results shall be reported to the Technical Support Center (if activated) or to the Interim Emergency Director.

5.2.2.2.2 FIRE AND DAMAGE TEAM

The Fire and Damage Team assesses plant conditions after events which may cause significant plant damage (such as earthquake or explosion) and reports conditions to the Interim Emergency Director or Emergency Director. The Team implements emergency repairs when needed.

5.2.2.2.3 PERSONNEL SAFETY TEAM

The Personnel Safety Team Leader ensures the coordination and proper operation of each functional group within the team and advises the Emergency Director.

The Personnel Safety Team is divided into the following functional groups:

a) First Aid Group/Search and Rescue - When directed, the Personnel Safety Team Leader will organize a Search and Rescue Group. The group may consist of members of the First Aid Group or personnel available at assembly areas or the Operations Support Center. The Search and Rescue Group shall consist of at least three members, one of which is qualified in first-aid and one of which is a Health Physics Technician. This group administers first aid treatment; monitors patients for contamination and initiates decontamination when needed; advises the Personnel Safety Team Leader or Emergency Director as to the need for assistance from off-site medical resources; prepares patients for transportation off-site and accompanies patients to

off-site facilities. This group reports to the Personnel Safety Team Leader.

b) Vehicle and Evacuee Control - This group coordinates with Security Forces to asssist in evacuation, control of evacuees when needed, and in accounting for personnel. They monitor evacuees for contamination and initiate decontamination when needed. This group reports to the Personnel Safety Team Leader.

5.2.2.2.4 CHEMISTRY SAMPLING AND ANALYSIS TEAM

The Chemistry Sampling and Analysis Team assumes responsibility for obtaining and analyzing normal and post-accident samples and for assessing the results and advising the Emergency Director.

5.2.2.2.5 SECURITY TEAM

The Security Team Leader is responsible for all activities of the Security Forces and for keeping the Emergency Director informed.

The Security Team includes the following functional groups:

a) Accountability Group - This group is responsible for accounting for personnel after an evacuation from the plant and for reporting unaccounted personnel to the Personnel Safety Team Leader or the Interim Emergency Director or Emergency Director as applicable.

b) Access Control Group - This group implements procedures for controlling access to the site and for providing security and access control at the Technical Support Center when activated. Guards report to the Security Team Leader.

c) Plant Security - This group implements procedures to maintain plant security in an emergency.

5.2.2.2.6 RECORDKEEPING AND COMMUNICATIONS TEAMS

Recordkeeping and Communications Teams are assigned to the Control Room, Technical Support Center, and Emergency Operations Facility. When activated, these personnel test communication channels to verify operability, maintain communications as assigned, and initiate communication records. In the TSC and EOF, these teams ensure that administrative materials are available and follow implementing procedures to ensure full activation of the facility. The senior position on the team in the EOF and TSC reports to the Site Emergency Coordinator and Emergency Director, respectively.

5.2.2.2.7 DATA DISPLAY OPERATIONS

Personnel are assigned to the Technical Support Center and to the Emergency Operations Facility to operate and maintain the emergency data transmission and display equipment. These personnel report to the Site Emergency Coordinator or Emergency Director at the EOF and TSC, respectively.

| 5.2.2.2.8 DOSE ASSESSMENT TEAM

| This group calculates exposure data from available radiological monitoring, meteorological, and radiation survey data and estimates source terms. These assessments are reported to the Emergency Director and to the Site Emergency Coordinator. This team reports to the Emergency Operations Facility.

5.2.3 PLANNING AND SCHEDULING COORDINATOR

The Planning and Scheduling Coordinator assists the Site Emergency Coordinator in activation and overall management of the Emergency Operations Facility, and follows up on resource requests to the Headquarters Emergency Support Center. During the recovery response phase, the responsibilities include:

a) Developing schedules for implementing recovery plans and sequencing work and operational activities.

b) Coordinating plant operations with the Station Superintendent and Operations Engineer.

c) Follow-up with all organizations to ensure that commitments and milestones are kept.

d) Participate in Recovery Manager meetings, tabulate and follow-up on assigned action items.

5.3 AUGMENTATION OF ON-SITE EMERGENCY ORGANIZATION

The on-site emergency organization may be augmented by Corporate level support, by local services, and by various government agencies. Local services and government agencies are contacted directly by the Interim Emergency Director, Emergency Director, or Site Emergency Coordinator. Corporate level support is activated by the Office of the Vice President, Electric Production Department upon notification by the Interim Emergency Director, the Emergency Director, or the Site Emergency Coordinator. The notifications are shown in Figure 5-3.

5.3.1 PHILADELPHIA ELECTRIC CORPORATE SUPPORT

Figure 5-4 diagrams the Philadelphia Electric Corporate support functions which are available to augment and assist the plant as necessary to cope with emergency conditions. The central location for activating and coordinating these support functions is the PECo Headquarters Emergency Support Center on the 7th floor of the Philadelphia Electric headquarters at 2301 Market Street, Philadelphia. As indicated by the duration of the emergency, conditions at the plant site, and other applicable factors, specific support functions may be moved to the plant site.

5.3.1.1 EMERGENCY SUPPORT OFFICER

The Emergency Support Officer is a representative of the Office of the Vice President of the Electric Production Department. The primary representative is the Vice President, Electric Production Department. The Manager, Electric Production Department, is the alternate. The Emergency Support Officer has the authority, management ability, technical knowledge, and procurement authority to commit Corporate resources and to manage these support functions. The Emergency Support Officer is responsible for:

a) Activating the emergency corporate support function.

b) Management of the emergency corporate support functions at the Headquarters Emergency Support Center.

c) Ensuring effective liaison with General Electric Company, Bechtel, other service and equipment contractors, and other utilities which may provide support to the plant.

d) Determining the necessity for and timing of emergency organization evolution from the initial response phase to the longer term recovery phase in coordination with the Emergency Director, the Site Emergency Coordinator, and the Federal and State Government Liaison.

5.3.1.2 ADMINISTRATIVE AND LOGISTICS MANAGER

The Administrative and Logistics Manager is responsible for:

a) Reporting to the PECo Headquarters Emergency Support Center.

b) Implementing applicable portions of this plan as necessary to provide the required logistics support.

c) Supervising the functions and activities of certain personnel assigned to the PECo Headquarters Emergency Support Center. These functions are described in Sections 5.3.1.3 through 5.3.1.9.

5.3.1.3 SUPPORT PERSONNEL PROCUREMENT COORDINATOR

Foreign crews and material include resources which are not normally available, or not available in the quantities needed, within Philadelphia Electric and encompass people, equipment, material, and services available through Bechtel, General Electric, contractors, vendors, other utilities, and industry organizations. The Support Personnel Procurement Coordinator reports to the Administrative and Logistics Manager and is responsible for:

a) Establishing and maintaining a listing of sources for foreign crews, equipment, materials, supplies, and services which are likely to be required in support of the plant during emergencies. This may be accomplished in coordination with other utilities, contractors, vendors, and industry organizations such as the Institute of Nuclear Power Operations.

b) Reporting to the PECo Headquarters Emergency Support Center when activated.

c) Determining the type and extent of crews, materials, and services needed and identifying sources to fulfill those needs.

d) Coordinating with the Administrative and Logistics Manager and the Support Personnel Accommodation Coordinator to obtain the required crews, materials, and services.

e) Determining transportation mode and time and place of arrival of personnel and equipment and providing the information to the Support Personnel Accommodation Coordinator or Transportation Coordinator.

| 5.3.1.4 SUPPORT PERSONNEL ACCOMMODATIONS COORDINATOR

| The Support Personnel Accommodations Coordinator reports to the PECo Headquarters Emergency Support Center when activated. The position is filled by the Manager-Area Development. The Support Personnel Accommodation Coordinator reports to the Administrative and Logistics Manager, implements applicable portions of this plan, and is responsible for:

a) Providing transportation and escorts, as needed, for incoming support personnel from the point of arrival to Limerick.

b) Establishing and maintaining a listing of housing facilities, accommodations, restaurants, and caterers in the Limerick vicinity and activating these sources when needed.

c) Arranging for transportation, lodging, and feeding of incoming support personnel.

d) Establishing and maintaining a listing of sources for office trailers and other temporary facilities (such as sanitary facilities) which may be necessary to establish the Emergency Support Center at Limerick and for activating these sources when needed.

| 5.3.1.4.1 SUPPORT PERSONNEL ACCOMMODATIONS COORDINATOR-SCHUYLKILL DIVISION

| The Supervisor of Business Services, Schuylkill Division is the Support Personnel Accommodations Coordinator-Schuylkill Division and implements arrangements for the Limerick area. The Group consists of a Chief Administrator and Assistant, Transportation Director, Housing Director, Food Director, and various assistants.

5.3.1.5 TRANSPORTATION COORDINATOR

The Transportation Coordinator reports to the PECo Headquarters Emergency Support Center or the normal work location when activated. The Transportation Coordinator reports to the Administrative and Logistics Manager, and is responsible for:

a) Providing transportation for incoming materials and equipment from point of arrival to Limerick.

b) Providing trucks, helicopters, buses and passenger cars as necessary for adequate transportation of personnel involved with the emergency. This includes shuttle service from various centers to the plant.

c) Providing maintenance and fuel for vehicles.

5.3.1.6 PURCHASING COORDINATOR

The Purchasing Coordinator reports to the Administrative and Logistics Manager and is responsible for:

a) Reporting to the PECo Headquarters Emergency Support Center when activated.

b) Maintaining awareness and files of contracts and written agreements which may be made between Philadelphia Electric and contractors, vendors, other utilities, and industry organizations in anticipation of emergency assistance needs.

c) Functioning as the emergency organization purchasing agent.

d) Administration of petty cash funds and expenses.

5.3.1.7 COMMUNICATIONS EQUIPMENT COORDINATOR

The Communications Equipment Coordinator reports to the Administrative and Logistics Manager and is responsible for:

a) Reporting to the PECo Headquarters Emergency Support Center when activated.

b) Developing and maintaining contingency plans to expand the Limerick communications capability and activating these plans when needed.

c) Coordinating with local telephone companies to ensure their availability in emergencies.

d) Arranging for unlisted emergency numbers if required.

e) Arranging for office furniture equipment (desks, files, etc.) for emergency use.

5.3.1.8 STORES DIVISION COORDINATOR

The Stores Division Coordinator reports to the Administrative and Logistics Manager and is responsible for:

a) Reporting to the Berwyn Central Storage Building Center when activated.

b) Staffing designated Stores issue points on a 24-hour basis.

c) Establishing and operating temporary, including mobile, storerooms where needed.

d) Provide a Stores Division liaison in the Headquarters Emergency Support Center

5.3.1.9 TRANSMISSION AND DISTRIBUTION SUPPORT COORDINATOR

The T&D Support Coordinator reports to the Headquarters Emergency Support Center, when activated, and reports organizationally to the Administrative and Logistics Manager. The function of the T&D Support Coordinator is to fill manpower, equipment, and service needs by using Electric T&D Department resources.

5.3.1.10 EMERGENCY SECURITY OFFICER

The Emergency Security Officer reports to the Emergency Support Officer and is responsible for:

a) Reporting to the PECo Headquarters Emergency Support Center when activated.

b) Maintaining liaison with law enforcement agencies.

c) Assisting the Plant Security Forces in implementing the Security Plan.

d) Augmenting the Plant Security Forces as needed to maintain security and to control increased vehicular and personnel traffic at the plant.

e) Developing contingency plans and staffing requirements necessary for security processing, control, and badging of support agency personnel who may require rapid access to the Emergency Operations Facility or to the plant under emergency conditions.

f) Keeping the Plant Security Supervisor and the headquarters, TSC, and EOF staffs apprised of status.

5.3.1.11 EMERGENCY MEDICAL DIRECTOR

The Emergency Medical Director reports to the Headquarters Emergency Support Center. The Philadelphia Electric Medical Department, under the direction of the Medical Director, maintains agreements with local physicians to act as Company physicians in the Limerick area. The Medical Department is consulted in all cases of serious injury or significant radiation exposure and will make arrangements for expanded medical care at the plant if emergency conditions warrant.

5.3.1.12 DESIGN AND CONSTRUCTION SUPPORT OFFICER

The Design and Construction Support Officer is responsible to:

a) Establish direct contact with General Electric, Bechtel, or other engineering/construction firms to resolve technical and administrative matters and to activate their emergency support if needed.

b) Provide engineering and technical specialists to the Headquarters Emergency Support Center or to the Emergency Support Center, if activated, and ensure design and engineering activities are adequately staffed in a timely manner by augmenting emergency centers as necessary.

c) Provide input to the Administrative and Logistics Manager in regard to facilities needed in the Emergency Support Center, if activated.

d) Direct, coordinate, and approve engineering, design, and construction activities.

e) Ensure that design and design review activities are controlled and that cognizant portions of the emergency organization are aware of planned actions.

f) Coordinate the integration of General Electric, Bechtel, or other engineering/construction firm personnel into the emergency organization.

g) Ensure that construction activities are adequately staffed in a timely manner.

To execute these responsibilities, the Design and Construction Support Officer has the technical expertise of the entire Company and its consultants available to him. These organizations include:

a) Mechanical Engineering Division

b) Electrical Engineering Division

c) Construction Division

d) Engineering Design Division

e) Quality Assurance Section of the Engineering and Research Department

f) Research and Testing Division

g) Nuclear Section of the Electric Production Department

h) Quality Assurance Division

i) Maintenance Division

j) Services Division

k) General Electric, Bechtel, and Radiation Management Corporation.

The positions described in Sections 5.3.1.13 through 5.3.1.21 and 5.3.1.35 through 5.3.1.37 report to the Design and Construction Support Officer.

5.3.1.13 INSTRUMENT AND CONTROL COORDINATOR

The Instrument and Control Coordinator is responsible for:

a) Timely staffing of I&C technical analysis and design activities using resources primarily from the Electrical Engineering Division and the Research and Testing Division. The Coordinator identifies additional resources needed, including General Electric or Bechtel resources, to the D&C Support Officer.

b) Analysis of I&C problems and development of plans or methods for continued capability to monitor and control plant parameters.

c) Design and coordinate the installation of modifications required for monitoring and controlling plant parameters.

d) Analysis of failed or questionable instruments and controls to identify corrective actions or determine alternate measurement techniques.

e) Coordination with the plant staff I&C group in aspects which affect normal plant instrument and control work, including problem analysis, repair, and modification.

5.3.1.14 LICENSING COORDINATOR

The Licensing Coordinator is responsible for:

a) Timely staffing of licensing-related activities using resources primarily from the Nuclear and Environmental Section of the Mechanical Engineering Division and from the Nuclear Section, Electric Production Department. The Coordinator identifies

additional resources needed, including GE or Becthel resources, to the D&C Support Officer.

b) Working with NRC representatives to resolve questions concerning FSAR and Technical Specification commitments in light of existing plant conditions and to resolve licensing requirements associated with proposed abnormal operating modes or plant modifications.

c) Serving as a consultant to the Plant Operations Review Committee on licensing matters.

d) Coordinate with General Electric, Bechtel, and Philadelphia Electric Company Legal Department on licensing matters.

5.3.1.15 SYSTEMS ENGINEERING COORDINATOR - MECHANICAL

The Systems Engineering Coordinator-Mecahnical is responsible for:

a) Timely staffing of technical analysis, design, and construction requirement identification activities using resources primarily from the Mechanical Engineering Division. The Coordinator identifies additional resources needed, including GE or Bechtel resources, to the D&C Support Officer.

b) Analysis of problems associated with plant piping systems, equipment, and structures and development of corrective actions or special procedures.

c) Supervise and coordinate the design and design review activities associated with modifications and new equipment or systems needed in the recovery process.

d) Coordinate with the plant staff Technical Engineer, General Electric, Bechtel, and the Construction Coordinator in developing design and construction requirements.

e) Coordinating with the Systems Engineering Coordinator-Electrical and the Procedures Support Coordinator.

5.3.1.16 SYSTEMS ENGINEERING COORDINATOR-ELECTRICAL

The Systems Engineering Coordinator-Electrical is responsible for:

a) Timely staffing of technical analysis, design, and construction requirement identification activities using resources primarily from the Electrical

Engineering Division. The Coordinator identifies additional resources needed, including GE or Bechtel resources, to the D&C Support Officer.

b) Analysis of problems associated with plant electrical systems, equipment, and structures and development of corrective actions or special procedures.

c) Supervise and coordinate the design and design review activities associated with modifications and new equipment or systems needed in the recovery process.

d) Coordinate with the plant staff Technical Engineer, General Electric, Bechtel, and the Construction Coordinator in developing design and construction requirements.

e) Coordinate with the Systems Engineering Coordinator-Mechanical and Procedures Support Coordinator.

5.3.1.17 CONSTRUCTION COORDINATOR

The Construction Coordinator is responsible for:

a) Timely assembly of construction forces using resources primarily from the Construction Division of the Engineering and Research Department. The Coordinator identifies additional resources needed, including General Electric, Bechtel, or other construction firms, to the D&C Support Officer.

b) Providing direct contact with, and supervision of, all construction forces involved in the recovery operation.

c) Coordinate with the Systems Engineering Coordinators in establishing and implementing construction requirements and with the Quality Assurance/Quality Control (QA/QC) Coordinator in establishing and implementing installation QC requirements.

d) Supervise the procurement and expediting functions for necessary equipment and materials, utilizing the Administrative and Logistics Manager, the LGS Stores Division office, or contractors such as GE or Bechtel.

5.3.1.18 QUALITY ASSURANCE/QUALITY CONTROL COORDINATOR

The QA/QC Coordinator is responsible for:

a) Timely staffing of QA/QC functions to support any construction or modification activities using

resources primarily from the QA Division, QA Section of the E&R Department, and QC personnel from the Construction Division of the E&R Department or from the Maintenance Division of the Electric Production Department. The Coordinator identifies additional resources needed to the D&C Support Officer.

b) Interfacing with the Construction Coordinator, Systems Engineering Coordinators, and the I&C Coordinator in establishing installation inspection requirements.

c) Supervise the performance of construction/repair inspections.

d) Monitor the administrative systems and practices used by on-site groups to ensure proper controls and efficient methods exist.

e) Provide the primary interface with and the necessary escorts for NRC representatives.

5.3.1.19 RADWASTE COORDINATOR

The Radwaste Coordinator is responsible for:

a) Timely staffing of technical analysis and design activities related to radwaste processing by liaison with the Health Physics and Chemistry Coordinator and by using primarily the resources of the Power Plant Services Section. The Coordinator identifies additional resource needs to the Design and Construction Support Officer or the HP&C Coordinator.

b) Establishing long range schedules and priorities for radwaste processing and coordinating with the Operations Engineer to implement the schedules. This includes solid, liquid, and gaseous wastes.

c) Monitor radwaste generation and processing to provide early identification of problem areas.

d) Taking the lead in developing any necessary modifications or making repairs to radwaste equipment. Coordinate this activity with the Systems Engineering Coordinators.

e) Monitoring radwaste shipping to provide early identification of problem areas.

f) Assisting the plant staff in resolution of waste disposal problems.

5.3.1.20 ENGINEERING DESIGN COORDINATOR

The Engineering Design Coordinator is responsible for:

a) Timely assembly of Engineering Design personnel as necessary to support technical analysis and design functions. The Coordinator identifies additional resources needed, including General Electric, Bechtel, or other engineering firms to the Design and Construction Support Officer.

b) Providing up to date drawings from files to support design, analysis, construction, and repair activities under the cognizance of the Design and Construction Support Officer.

c) Control of drawings developed for construction, repair, or modification activities.

5.3.1.21 MAINTENANCE COORDINATOR

The Maintenance Coordinator is responsible for:

a) Timely assembly of maintenance and repair forces using resources primarily from the Maintenance Division of the Electric Production Department. The Coordinator identifies additional resources needed, including General Electric, Bechtel, or other construction firms, to the D&C Support Officer.

b) Providing direct contact with, and supervision of, all maintenance forces involved in the emergency response.

c) Coordinate with the Systems Engineering Coordinators in establishing and implementing maintenance requirements and with the Quality Assurance/Quality Control (QA/QC) Coordinator in establishing and implementing installation QC requirements.

d) Coordinating the procurement and expediting functions for necessary equipment and materials, utilizing the Administrative and Logistics Manager, the LGS Stores Division office, or contractors such as GE or Bechtel.

5.3.1.22 INSURANCE COORDINATOR

The Insurance Coordinator reports to the Headquarters Emergency Support Center and, organizationally, reports to the Emergency Support Officer. The Insurance Coordinator is responsible to:

a) Be aware of the capabilities and plans of insurance agencies with whom PECo contracts for responding to emergencies.

b) Verify that appropriate insurance agencies are aware of the emergency condition.

c) Provide coordination and assistance to insurance agencies in the implementation of their emergency response.

d) Keep the Emergency Support Officer, the Administrative and Logistics Manager, and the Purchasing Coordinator aware of the status of the insurance agency response.

5.3.1.23 CORE PHYSICS COORDINATOR

The Core Physics Coordinator reports to the Emergency Support Officer is responsible for:

a) Timely staffing of core monitoring and analysis activities using resources primarily from the Nuclear Section, Generation Division - Nuclear. Immediate steps, likely during the initial response phase, shall be taken to activate General Electric technical assistance if the safety of core conditions is in question.

b) Analyzing core parameters to determine conditions in the core on an on-going basis and make recommendations to achieve and/or maintain safe conditions.

c) Review proposed plant operations with respect to the effect on core conditions.

d) Provide direction to General Electric core physics personnel on-site and in their home office support group regarding needed analyses.

e) Keep the Emergency Support Officer/Recovery Manager appraised of core conditions.

5.3.1.24 HEALTH PHYSICS AND CHEMISTRY COORDINATOR

The Health Physics and Chemistry Coordinator is responsible for:

a) Identifying requirements for on-site and off-site radiological environmental sampling and analysis activities.

b) Providing technical assistance to in-plant and off-site health physics and chemistry activities during the initial and recovery response phases.

c) Review recovery plans and procedures for as-low-as-reasonably-achievable (ALARA), health physics, and chemistry considerations and develop necessary plans for shielding, special tools, dry-runs on mock-ups, access control/clothing change areas, special radiation surveys, and special sampling techniques.

d) Coordinate with the plant staff health physics and chemistry personnel and assist in resolving problems.

e) Provide technical support and manpower to the Radwaste Coordinator.

5.3.1.25 ENVIRONMENTAL SAMPLING COORDINATOR

The Environmental Sampling Coordinator is responsible for:

a) Assisting the HP&C Coordinator in recovery, analysis, and evaluation of environmental samples.

b) Evaluation of data obtained from the routine and emergency environmental radiological monitoring stations.

5.3.1.26 PROCEDURES SUPPORT COORDINATOR

The Procedures Support Coordinator is responsible for:

a) Timely staffing of the procedure development activities using resources primarily from the plant staff Technical Engineer's organization and the Mechanical or Electrical Engineering Division. The Coordinator identifies additional resources needed, including General Electric, Bechtel, or other contractors, to the D&C Support Officer.

b) Revising existing operating and other procedures as necessary to reflect existing emergency conditions.

c) Prepare recovery procedures based upon approved plans and methods.

d) Coordinate with other emergency organizations and plant staff groups to obtain the necessary technical inputs for the procedures.

e) Coordinate the overall procedure development, review, and approval process.

f) Coordinate with the Administrative Engineer on the plant staff to obtain required materials and clerical support.

5.3.1.27 FEDERAL AND STATE GOVERNMENT LIAISON

The Federal and State Government Liaison is responsible for:

a) Serving as the management level interface with government authorities.

b) Determining the necessity for and timing of the emergency organization evolution from the initial response phase to the longer term recovery organization in coordination with the Emergency Director, Site Emergency Coordinator, and the Emergency Support Officer.

5.3.1.28 PUBLIC INFORMATION OFFICER

The Public Information Officer reports to the Chief Executive Officer and has overall responsibility for implementation of the Corporate Communications Department Emergency Communications Plan (refer to Appendix G).

| 5.3.1.29 CORPORATE SPOKESMAN

| The Corporate Spokesman is the Vice President - Engineering | and Research Department. The Corporate Spokesman is | responsible for:

| a. Reporting to the Emergency News Center upon activation | of the Corporate Communications Plan.

| b. Representing PECO to the public by acting as the | Corporate Spokesman at periodic news conferences.

| c. Communicating with personnel at the Technical Support | Center, Emergency Operations Facility, and Headquarters | Emergency Support Center to stay informed as to plant | status and offsite consequences.

d. Reviewing news releases in conjunction with the Emergency News Center Coordinator and the Technical Advisor.

5.3.1.30 Emergency Operations Facility Communications Liaison

The Emergency Operations Facility Communications Liaison is the Manager - Corporate Communications. The alternate is the Assistant Manager - Energy Information and Education, Corporate Communications Department. The EOF Communications Liaison reports to the Public Information Officer and is responsible for:

a. Reporting to the Emergency Operations Facility upon activation of the Corporate Communications Plan.

b. Obtaining information concerning the emergency such as plant status, radioactive releases, projected doses, predicted durations.

c. Transmitting pertinent information to the Emergency News Center Coordinator at the Philadelphia Electric Main Office.

5.3.1.31 Emergency News Center Coordinator

The Emergency News Center Coordinator is the Manager - Public Information, Corporate Communications Department. The alternate is a Public Information Representative - Corporate Communications Department. The Emergency News Center Coordinator reports to the Public Information Officer and is responsible for:

a. Reporting to the Emergency News Center upon activation of the Corporate Communications Plan.

b. Maintaining plans and personnel ready to staff the news center.

c. Receiving information from the Emergency Operations Facility Communications Liaison.

d. Directing the preparation of news releases based on information received.

e. Approving and authorizing news releases and their distribution to the news media.

f. Forwarding copies of prepared news releases to Headquarters Emergency Support Center.

h. Ensuring adequate supplies of literature regarding Philadelphia Electric Company, Limerick Generating Station, and general information on nuclear power plant design and terminology are available for distribution as background material.

i. Coordinating with Pennsylvania Emergency Management Agency communication personnel to establish wordingin news releases.

5.3.1.32 TECHNICAL ADVISOR

The Technical Advisor is a designated Senior Engineer - Nuclear Generation Divisin. The alternate is the Engineer-In-Charge-Nuclear Safety Section. The Technical Advisor reports to the Emergency Center Coordinator and is responsible for:

a. Reporting to the Emergency News Center upon activation of the Corporate Communications Plan.

b. Providing technical expertise to the Emergency News Center Coordinator.

c. Assisting the Corporate Spokesman in technical areas.

d. Reviewing news releases for technical accuracy.

5.3.1.33 TRAINING COORDINATOR

The Training Coordinator is the Superintendent - Nuclear Training, Nuclear Generation Division. The alternate is the Training Coordinator - Limerick. The Training Coordinator reports to the Site Emergency Coordinator and is responsible for:

a. Reporting to the Headquarters Emergency Support Center or to the EOF as necessary.

b. Providing general employee training, respiratory equipment training, and security training as necessary.

c. Ensuring special training needs pertaining to the emergency are satisfied.

5.2.1.34 EMERGENCY PREPAREDNESS COORDINATOR

The Emergency Preparedness Coordinator is the Director-Emergency Preparedness Section, Nuclear Generation Division. The alternate is a staff member of the Emergency Preparedness Section. The Emergency Preparedness Coordinator reports to the Site Emergency Coordinator and is responsible for:

a. Reporting to the Emergency Operations Facility or other locations as designated by the Site Emergency Coordinator

b. Providing assistance to the Site Emergency Coordinator and the Emergency Director in coordinating and tracking activities with the site and corporate organizations and off-site agencies.

c. Facilitating information flow between the emergency response facilities and between the EOF and offsite agencies.

5.3.1.35 CIVIL ENGINEERING COORDINATOR

The Civil Engineering Coordinator is the Engineer-in-Charge - Industrial Section, Engineering and Research Department. The alternate is the Supervising Engineer - Structural Branch, Engineering and Research Department. The Civil Engineering Coordinator reports to the Design and Construction Support Officer. The Civil Engineering Coordinator is responsible for:

a. Reporting to the Headquarters Emergency Support Center.

b. Staffing technical analysis, design, and construction requirement identification activities using resources primarily from the Civil Section.

c. Identifying additional resources needed, including General Electric or Bechtel resources, to the Design and Construction Support Officer.

d. Analyzing problems assocated with civil engineering features of equipment and structures and developing corrective actions or special procedures.

e. Supervising and coordinating the civil engineering design and design review activities associated with modifications and new facilities.

f. Coordinating with the plant staff Technical Engineer, General Electric, Bechtel, and the Construction Coordinator in developing design and construction requirements.

g. Coordinating with the Procurement Support Coordinator in development of necessary procedures.

h. Coordinating with the Systems Engineering Coordinator - Electrical and Systems Engineering Coordinator - Mechanical where problems overlap.

| 5.3.1.36 VENTILATION COORDINATOR

| The Ventilation Coordinator is the Engineer-In-Charge - Industrial Section, Engineering and Research Department. The alternate is the Supervising Engineer-Building Facilities Branch, Engineering and Research Department. The Ventilation Coordinator reports to the Design and Construction Support Officer. The Ventilation Coordinator is responsible for:

| a. Reporting to the Headquarters Emergency Support Center.

| b. Staffing technical analysis, design, and construction requirement identification activities using resources primarily from the Industrial Section.

| c. Identifying additional resources needed, including General Electric or Bechtel resources, to the Design and Construction Support Officer.

| d. Analyzing problems associated with plant ventilation equipment and structures and developing corrective actions or special procedures.

| e. Supervising and coordinating the ventilation design and design review activities associated with modifications and new facilities.

| f. Coordinating with the plant staff Technical Engineer, General Electric, Bechtel, and the Construction Coordinator in developing design and construction requirements.

| g. Coordinating with the Procurement Support Coordinator in development of necessary procedures.

| h. Coordinating with the Systems Engineering Coordinator - Electrical and Systems Engineering Coordinator - Mechanical where problems overlap.

| 5.3.1.37 EMERGENCY OPERATIONS FACILITY ENGINEERING LIAISONS

| The Emergency Operations Facility Engineering Liaisons are designated engineering staff from the Mechanical and Electrical Divisions - Engineering and Research Department. The alternates are designated engineering staff from the same organizations. The EOF Engineering Liaisons report to the Design and Construction Support Officer and are responsible for:

| a. Reporting to the EOF or to a location as directed.

| b. Communicating plant data and status to emergency personnel at the Headquarters Emergency Support Center.

5.3.2 LOCAL SERVICES SUPPORT

This section identifies the local support sources with whom written agreements have been reached. The following support sources are described:

a) Radiation Management Corporation
b) Pottstown Memorial Medical Center
c) Linfield Fire Company
d) Local physicians
e) Local ambulance service

Figure 5-3 shows the notification methods used to activate these groups. Refer to Appendix A for agreement letters.

5.3.2.1 CANBERRA/RADIATION MANAGEMENT CORPORATION

Canberra Radiation Management Corporation (RMC) is a service organization under contract to Philadelphia Electric. Canberra/RMC employs personnel experienced in nuclear medicine and accident management.

Canberra/RMC has available, on a 24-hour basis, a Radiation Emergency Medical Team (REM Team) to respond to accidents. The team consists of experienced physicians, health physicists, and technicians and has portable medical and health physics equipment to render emergency treatment at accident sites and to conduct the initial evaluation of the radiation status of both patients and the environment. Transportation of the REM Team and its equipment will normally be by truck, but if required can take place by a helicopter converted for use as an ambulance for two prone patients. In regard to on-site medical assistance, the REM Team capabilities include:

1) Consultation and actual assistance to site first aid personnel and the attending physician.

2) Assistance in personnel decontamination.

3) Patient evacuation to Pottstown Memorial Medical Center or to the Radiation Medicine Center of the Hospital of the University of Pa.

Under the direction of the Philadelphia Electric Medical Department, RMC supervises the total management of radiation accident victims. To this end, an Emergency Medical Assistance Plan (EMAP) has been established. The EMAP distinguishes three levels of medical care:

1) First aid, decontamination, and preliminary patient evaluation at the site (such as provided by the REM Team).

2) Emergency care and patient stabilization in a supporting hospital.

3) When necessary, definitive evaluation and treatment at the Radiation Medicine Center, Hospital of the University of Pa.

The central point of the EMAP is the Radiation Medicine Center. This center has available:

1) Physicians, nurses, health physicists, radiochemists, and other medical personnel trained in the care of radiation accident victims.

2) A Radiosurgery Decontamination Suite to perform major surgery on radioactively contaminated patients.

3) A Radiation Exposure Treatment Suite for severely exposed patients. Treatment includes reverse isolation, bone marrow transplantation, white blood cell transfusion, and various other medical specialties available in a large medical center.

4) Surface and air transportation provisions for radioactively exposed and contaminated patients.

5) A Radiation Exposure Evaluation Laboratory for film and TLD badge evaluation, radiobioassay, whole body counting, chromosome analysis, phantom mock-up, radionuclide analysis of environmental samples using alpha, beta, and gamma spectroscopy, and neutron activation analysis.

5.3.2.2 POTTSTOWN MEMORIAL MEDICAL CENTER

The Pottstown Memorial Medical Center in Pottstown, Pa. provides facilities which include equipment for patient acceptance, emergency surgery, personnel dosimetry, and personnel decontamination. Hospital personnel will perform emergency treatment of contaminated patients, including resuscitation and stabilization. If required, more definitive evaluation and treatment would be performed at the Radiation Medicine Center of the Hospital of the University of Pa.

5.3.2.3 LINFIELD FIRE COMPANY

The Linfield Fire Company will provide firefighting assistance (personnel and equipment) to Limerick.

5.3.2.4 LOCAL PHYSICIANS

Local physicians, under an agreement with the Philadelphia Electric Medical Department, will act as Company physicians.

This service includes treatment on-site and treatment of contaminated victims.

5.3.2.5 AMBULANCE SERVICE

Under an agreement with Philadelphia Electric Company, a local ambulance service will transport accident victims, including those involving radiation exposure or contamination, to Pottstown Memorial Medical Center or to the Hospital of the University of Pennsylvania in Philadelphia.

5.3.3 PARTICIPATING GOVERNMENTAL AGENCIES

Discussions have been held and agreements have been reached with appropriate civil agencies which have responsibilities for coping with emergencies. The overall responsibility for the management of the effects of accidental off-site releases of radioactivity resulting from either a nuclear power plant or a transportation accident rests with the Pennsylvania Emergency Management Agency. Through the provisions of the Atomic Energy Development and Radiation Control Act, P.L. 1625 (1965), as amended, the Commonwealth organization having prime responsibility in matters of radiation hazards is the Bureau of Radiation Protection of the Department of Environmental Resources. The Pennsylvanis Emergency Management Agency has prime responsibility for emergency management and planning, and response coordination through the provisions of P.L. 1332. Accordingly, this Emergency Plan has been formulated to provide timely notification and close cooperation with these agencies.

In addition, arrangements have been made for timely notification of an emergency and for emergency support from the NRC Region I, Office of Inspection and Enforcement, the Department of Energy (DOE), Brookhaven Area Office Radiological Assistance Program. These civil agencies will respond to provide support in the event of an emergency in the areas indicated below. The designation and location of government emergency operations centers are listed in Table 7-2. Letters of agreement are in Appendix A.

5.3.3.1 PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

As outlined in Annex E, "Fixed Nuclear Facility Incidents" of the Commonwealth of Pennsylvania Disaster Operations Plan, the responsibilities of PEMA are to:

a) Serve as the lead State agency for emergency management and coordination of response activites.

b) Develop and maintain a comprehensive State Radiological Emergency Response Plan (RERP).

c) Coordinate State agency planning in support of the State plan.

d) Coordinate with and assist risk/support counties in the development of their plans.

e) Review county RERP to ensure they are in consonance with the State plan, comply with Federal government guidance for radiological response and ensure their implementation.

f) In cooperation with applicable State agencies and the American Red Cross, coordinate the resource management, including delivery to central resource receiving points, of available State equipment and supplies to satisfy unmet needs of risk and support counties.

g) Maintain listings of the reported unmet needs from risk and support counties, allocate State resources and request assistance from FEMA to make up shortfalls.

h) Establish and maintain agreements with supporting Federal agencies, adjacent States, volunteer organizations and fixed nuclear facilities to provide for coordination and integration of emergency response planning and operations.

i) Provide for the exchange of information during an incident with facilities, Federal agencies, State agencies, adjacent States, and affected counties.

j) Establish initial notification procedures to include a 24-hour response capability by PEMA.

k) Receive BRP recommendations for protective actions and upon directional authority from the Governor to PEMA coordinate the implementation of the actions.

l) Develop, evaluate and update time estimates for implementing protective actions to ensure that response times can be reduced to the extent possible.

m) Maintain prepositioned tapes with the National Oceanic and Atmospheric Administration's (NOAA) Weather Radio Stations for alerting and informing the public.

n) In coordination with the Governor's Press Office, serve as the State spokesperson in providing timely dissemination of emergency information regarding incident status and response actions to the media and public.

o) Assure that meteorological data is expeditiously forwarded to risk counties.

p) Maintain plans for the establishment of field emergency operations centers as required, and provide for stand-by communications capabilities.

q) Augment Federal, State and county communications with portable radios maintained by PEMA.

r) In coordination with BRP, develop requirements and procedures for the distribution and use of radiological survey and dosimetry resources.

s) Coordinate security arrangements for restricted access areas with PSP, and the National Guard, to include the designation of restricted access areas and entrance and exit controls. PEMA will coordinate the activation of the access control points.

t) Upon direction of the Governor, disseminate reentry criteria developed by BRP and coordinate reentry procedures.

u) Arrange for an annual conference to be conducted in conjunction with the respective risk counties at each fixed nuclear facility to acquaint news media personnel serving the area with emergency plans and points of contact.

v) Conduct an annual exercise to evaluate radiological emergency response plans and capabilities.

w) Conduct or coordinate periodic communications, radiological decontamination monitoring and health physics drills, as appropriate, with Federal emergency response organizations, adjacent States, State agencies and counties within the plume exposure and ingestion exposure pathway EPZs.

x) Participate in the annual exercise and communications drills conducted by each fixed nuclear facility.

y) Coordinate training for emergency management personnel in radiological emergency planning and operations.

z) Within the overall policy guidance established by the Governor's Press Secretary serve as the lead State agency, in coordination with BRP and the Department of Health, in developing and implementing a public education program regarding the nature of

radiation, its hazards and their effects and protective actions that can be taken.

aa) In coordination with the Governor's Press Secretary, develop and present at least annually, a public information program to keep the populace advised regarding the status and scope of radiological emergency response plans at the State, county and municipal levels and the capabilities that exist or are required for effective response operations. Updated information should be disseminated at least annually.

bb) In coordination with the Department of Health and the affected county emergency management agencies, develop procedures for distribution and administration of radioprotective drugs to designated emergency workders and institutional personnel.

cc) Partially activating the EOC in Harrisburg and appropriate offices at the Alert stage.

5.3.3.2 DEPARTMENT OF ENVIRONMENTAL RESOURCES, BUREAU OF RADIATION PROTECTION

As outlined in Annex E of the Commonwealth of Pennsylvania Disaster Operations Plan, the responsibilities of the BRP are to:

a) Maintain plans and develop procedures required to meet the criteria and planning standards in NUREG-0654, FEMA-REP-1, Rev. 1 related to incident assessment and radiological protection.

b) Conduct incident assessment, evaluate protective actions that might be taken and make recommendations to PEMA.

c) Develop and issue guidance to limit the radiological exposure of emergency workers during an incident and ensure that dose records are maintained, collected, analyzed and acted upon as required.

d) In coordination with PEMA, serve as the lead State agency, for providing technical guidance and assistance to State agencies and county and municipal governments regarding radiation detection, hazards of radiation exposure, decontamination and protective actions.

e) Coordinate with PEMA and the Department of Health and Agriculture regarding the interrelationship of their respective incident response plans and responsibilities.

f) Plan and coordinate the placement of offsite monitoring devices and interpret radiological monitoring measurements.

g) Develop plans for augmentation by Federal radiation regulating, monitoring and protection agencies and coordinate assistance from them.

h) Through PEMA, advise risk and support counties regarding a need for monitoring of evacuees at mass care centers.

i) Provide PEMA periodic evaluations of the situation and estimates of the radiation dose for the populace within the plume exposure pathway EPZ.

j) Maintain a watch system for nonduty hours to ensure that responsible persons within BRP can be contacted by the facilities and PEMA to activate the response mechanism in the evnt of an incident.

k) Maintain a dedicated telephone line between BRP headquarters and the PEMA Headquarters EOC.

l) Provide liaison personnel to the nuclear power plant's Emergency Operations Facility (EOF) and the PEMA EOC.

m) Establish criteria for reentry or relaxing protective actions and make recommendations to PEMA for transmittal to the Governor and ultimate decision relative to implementation of the recommendations.

n) In coordination with PEMA and the Department of Health, develop public education material to explain to the populace the nature of radiation, hazards involved and protective actions that can be taken to alleviate these hazards.

o) In coordination with PEMA, maintain contact on matters under BRP purview with appropriate individuals associated with fixed nuclear facilities located beyond, but within 50 miles of the Pennsylvania borders. Similarly establish contact with its counterpart agency in contiguous States regarding response to fixed nuclear incident affecting more than one State.

In addition, the Department of Environmental Resources has the following responsibilities as outlined in Annex E:

a) Take water samples from appropriate public reservoirs, water intake points, water treatment plants, ground water and surface water.

b) Maintain plans for timely notification of downstream water companies regarding contamination of water resources.

c) Conduct or arrange for laboratory analyses for radiocontamination of dairy and other agricultural products, food products from processor and retail establishments, and public water supplies.

d) Provide a response team representative to the PEMA Headquarters EOC and the Area EOCs upon their activation in the event of an incident.

5.3.3.3 PENNSYLVANIA STATE POLICE

Provisions have been made in the State plan for the Pennsylvania State Police to carry out protective actions affecting members of the public. Responsibilities of the State Police as set forth in Annex E of the Commonwealth of Pennsylvania Disaster Operations Plan are outlined below:

a) Assist risk counties in developing traffic control and security aspects of radiological emergency response planning.

b) In coordination with PEMA, the Department of Transportation, the National Guard and risk and support counties, plan for and implement procedures to control the orderly movement of people from the plume exposure pathway EPZ.

c) In coordination with PEMA, the National Guard, and the risk counties, plant entrance and exit control via access control points and security of designated areas within the plume exposure pathway EPZ of a fixed nuclear facility. Implement controls as coordinated by PEMA.

d) Assist PEMA and the Department of Transportation in the development and continuing analyses of projected traffic flow and road/highway capacities and the selection of major evacuation routes, traffic control points, and reception centers for evacuees. This also includes coordination of potential restrictions to use of the major routes and the identification of alternate evacuation routes.

e) In coordination with the Department of Transportation, conduct traffic surveillance to ensure that roads and highways designated as major evacuation routes are open and capable of handling the projected and actual traffic loads. Keep PEMA advised of proposed changes or rerouting of the traffic flow.

f) Augment communication systems of PEMA and risk or support counties upon request.

g) Assist risk counties, upon request, in providing security for prisoners being moved to other detention centers during an evacuation.

h) Respond to calls for assistance from the facility in the event of acts of terrorism or sabotage at a nuclear power plant.

i) Provide airlift and highway escort for movement of key emergency management personnel and critical support equipment to the EOF, field EOC and incident site.

j) Provide a liaison officer to risk county EOC upon its activation.

k) Provide a response team representative to the PEMA Headquarters EOC and Area EOCs upon their activation in the event of an incident.

5.3.3.4 NUCLEAR REGULATORY COMMISSION, REGION I, OFFICE OF INSPECTION AND ENFORCEMENT

The Office of Inspection and Enforcement, Region I, NRC, will dispatch personnel to the Emergency Operations Facility and to the Technical Support Center in the event of an emergency and will lend support in the areas of observation and accident evaluation. This agency's response will be governed by Region I Incident Response Supplement to NUREG-0845. PECo. will provide the necessary resources to support Region I's specific response to Limerick.

5.3.3.5 DEPARTMENT OF ENERGY, BROOKHAVEN AREA OFFICE, RADIOLOGICAL ASSISTANCE PROGRAM (RAP)

Upon notification of a hazard to public health and safety, the DOE Radiological Assistance Program will dispatch a RAP Team to the scene to advise and assist, as necessary, to minimize the public radiation exposure. This advice and assistance will take the form of medical and technical advice and environmental monitoring, and will support the efforts of the BRP, which has the primary responsibility.

5.3.3.6 COUNTY GOVERNMENTS

Pennsylvania statute requires the establishment of local emergency management agencies and defines appropriate powers and duties related to planning and response. Annex E of the Commonwealth of Pennsylvania Disaster Operations Plan defines "risk counties" as those within a 10-mile radius of a fixed nuclear facility. For Limerick, the Risk Counties are:

a) Montgomery County

b) Chester County

c) Berks County

The responsibilities assigned to these Counties in Annex E of the Commonwealth of Pennsylvania Disaster Operations Plan are:

a) Develop and maintain a comprehensive site-specific county RERP in consonance with Annex E to the Commonwealth Disaster Operations Plan.

b) Coordinate planning for incident response with the municipalities within the risk county and assist in the development of their RERP.

c) Identify county emergency organizations and personnel resources and task them to develop procedures in support of the RERP.

d) Identify individuals assigned functional responsibilities essential to the planning and implementation of the county RERP.

e) Develop a system for rapidly alerting county and municipal government heads, key staff, emergency forces, volunteer organizations, schools, hospitals, nursing homes, business and industry.

f) Ensure that the aleart and notification system is operable on a 24-hour basis. The system will be compatible with the four Emergency Action Level Guidelines referenced in Appendix 3 of Annex E.

g) In coordination with PEMA, disseminate public information material which would include but not be limited to information concerning:

(1) The plume exposure pathway EPZ

(2) Main evacuation routes

(3) Reception Centers and mass care/decontamination centers

(4) Protective Actions

(5) Contact points for additional information

(6) Special arrangements for the handicapped

(7) Educational information on radiation

h) Develop procedures for updating and distributing the above material annually to the permanent and transient population within the plume exposure pathway EPZ.

i) In coordination with PEMA, prepare and maintain in a current status emergency instructions and information concerning protective actions and maintain procedures for transmittal of this information to the public through the Emergency Broadcast System.

j) Plan the establishment of a county rumor control center and assign rumor control personnel. Coordinate rumor control activities with the State Rumor Control Center operated by the Governor's Press Secretary.

k) Develop provisions for notification of the resident and transient population in the event of an incident.

l) Coordinate selection of feeder evacuation routes, traffic control points and recommended changes in main evacuation routes with PEMA, the PSP and the Department of Transportation.

m) Coordinate with and assist district school superintendents and private school administrators in the development of their respective evacuation plans.

n) Assist hospitals, nursing homes, and other public institutions to develop their plans for protective response. Insure that municipalities develop plans for assisting handicapped and homebound invalids.

o) Coordinate with DPW regarding plans for the evacuation of hospitals and institutions operated by that Department.

p) Coordinate development of plans for the evacuation of county-operated prison and detention facilities.

q) Develop plans to provide first aid services, emergency fuel and road clearance along feeder evacuation routes.

r) Establish with the assistance of the Red Cross, mass care facilities for evacuees in the risk county support area.

s) Maintain plans for the radiological monitoring and decontamination of evacuees at mass care centers within the risk county.

t) In conjunction with PEMA, coordinate plans and obtain agreements with designated support counties for the movement and reception of evacuees.

u) Coordinate with and assist business and industry in the development of emergency plans.

v) Establish, equip and maintain an EOC.

w) Designate a location for an alternate EOC, if needed.

x) Ensure the dissemination of protective action recommendations received from the Department of Agriculture and/or PEMA regarding livestock protection and agricultural, dairy and food product control.

y) Maintain a current listing, with copy to PEMA, of unmet personnel and equipment needs.

z) Designate and develop plans for operation of a central resource receiving point.

aa) Conduct periodic drills and an exercise of the county RERP annually.

bb) Review and update county RERP at least annually and coordinate changes with PEMA, other state agencies as appropriate, and respective support counties.

cc) In coordination with PEMA, assist the Department of Health in the distribution of radioprotective durgs to designated emergency workers and institutional personnel.

dd) Prepare plans for distribution of radiological equipment.

ee) Establish and train requisite number of radiological decontamination monitoring teams for mass care centers located within the county and decontamination station(s) for emergency workers.

ff) Plan security for areas where the public is taking shelter or has evacuated, in coordination with PEMA, the PSP and the National Guard.

gg) In coordination with PEMA, prepare detailed plans for a controlled reentry into the evacuated area.

hh) Maintain records and reports acquired during an incident, prepare after-action reports, and participate in critiques.

ii) Be prepared to provide nontechnical administrative support to the State monitoring efforts conducted by BRP. Such support may include, but not be limited to, automobile drivers and data recorders. The county is not expected to provide monitoring teams to supplement the BRP/facility monitoring plan.

jj) Participate in offsite training provided by the facility as specified in Appendix 4, item 15 of Annex E.

kk) Participate in the annual State-county-facility news media conference arranged by PEMA and held in conjunction with risk counties areound the respective fixed nuclear facility.

ll) Through coordination with the facility and PEMA, ensure that facility plans for the evacuation of and reception of onsite individuals do not conflict with county evacuation plans.

mm) Register evacuees at mass care centers located within the county.

nn) In coordination with PEMA, provide for the radiological emergency response training of county and municipal personnel whould would be utilized for emergency operations during an incident.

oo) In coordination with PEMA and respective support counties identify:

(1) Traffic control points

(2) Reception centers

(3) Mass care centers

(4) Central Resource receiving point(s)

5.3.3.7 CONRAIL-HARRISBURG DIVISION

The two-track main line of Conrail - Harrisburg Division traverses the Limerick Exclusion Area. Therefore, arrangements have been made with Conrail to stop train passage through the Exclusion Area should emergency conditions arise which would necessitate this action.

5.3.3.8 STATE OF MARYLAND

The State of Maryland's border is located within the 50-mile ingestion pathway for Limerick. The State would be notified if protective actions are required within that area. No direct support is provided to Limerick Generating Station.

| 5.3.3.9 STATE OF NEW JERSEY

| The State of New Jersey's border is located within the 50-
| mile ingestion pathway for Limerick. The State would be
| notified if protective actions are required within that
| area. No direct support is provided to Limerick Generating
| Station.

| 5.3.3.10 STATE OF DELAWARE

| The State of Delaware's border is located within the 50-mile
| ingestion pathway for Limerick. The State would be notified
| if protective actions are required within that area. No
| direct support is provided to Limerick Generating Station.

| 5.3.4 INDUSTRY SUPPORT

Additional support is available throughout the nuclear industry. This support is in a variety of forms and includes reference lists of industry wide emergency resources available, trained personnel, and analytical laboratories.

5.3.4.1 INSTITUTE OF NUCLEAR POWER OPERATIONS (INPO)

INPO performs emergency preparedness review and evaluation functions for the nuclear power industry. INPO also establishes norms for nuclear power plant licensees.

The various divisions of INPO include the Radiological Protection and Emergency preparedness Division. Activities of this Division are:

a) Emergency Response Program - with the objective of developing and maintaining effective utility emergency response programs.

b) Utility Emergency Support Program - with the objective of organizing and coordinating external emergency response support to utilities.

c) Radiation Exposure Management Program - with the objective of achieving good management of personnel occupational radiation exposure at nuclear plants and low risk of radiation exposure to the public.

Implementing procedures establish responsibility for contact
| with INPO. When called upon, INPO can assist in quickly
applying the resources of the nuclear industry to meet the needs of the emergency.

5.3.4.2 NUCLEAR POWER PLANTS

Assistance has traditionally been afforded by one utility to another during any emergency. Contacts have been made with

neighboring nuclear licensees to provide a more formal basis for mutual support during nuclear incidents. Support, for example, will be in the form of trained health physics and chemistry personnel, radiation instrumentation, protective clothing, respiratory equipment, and shielding. These licensees are from Pennsylvania, New Jersey, and Maryland and are close enough for effective response.

5.3.4.3 LEAD NSSS (GENERAL ELECTRIC) REPRESENTATIVE

General Electric Company maintains an emergency response organization which can provide technical assistance in their home office and at the Limerick plant. This General Electric response may be activated by the Emergency Support Officer, Recovery Manager, or the D&C Support Officer. When the General Electric group is activated to the Limerick plant, a lead representative is designated and is responsible for:

a) Administration and supervision of General Electric representatives on-site and direct contact the the D&C Support Officer or Emergency Director.

b) Ensuring effective integration of General Electric personnel into the Philadelphia Electric organization and providing personnel in the necessary areas of expertise.

c) Analysis of problems and recommending corrective actions.

d) Coordinate information channels for the Philadelphia Electric organizations to the General Electric home office personnel.

e) Obtaining appropriate reviews and approvals from General Electric organizations for engineering and design tasks.

5.3.4.4 LEAD BECHTEL/CONTRACTOR REPRESENTATIVE

Bechtel or other contractors may be involved in the technical analysis or construction activities associated with the emergency response or recovery operation. Each such organization will designate a lead representative who will have the same responsibilities, within their scope of work, as described for the Lead NSSS (General Electric) Representative.

5.4 EMERGENCY ORGANIZATION - RECOVERY RESPONSE PHASE

This section describes the emergency organization which can be implemented after the initial response phase. The evolution from the initial response phase to the recovery response phase is expected to take place after plant conditions are sufficiently stable. The decision as to whether or not the recovery response phase organization is needed and the timing of the organizational change is made jointly by the Emergency Director, Site Emergency Coordinator, the Emergency Support Officer, and the Federal and State Government Liaison.. These individuals may also determine that certain elements of the recovery organization are not needed for the existing conditions. Figure 5-6 is a diagram of the full recovery response phase organization. The recovery response phase organization ensures proper management of augmented personnel resources, including Philadelphia Electric, General Electric, Bechtel, contractors, and other utilities, and the physical facilities needed to support them. The basic responsibilities of the positions shown in Figure 5-6 remain the same as described in Section 5.3 of this Plan. In the following paragraphs, the positions are unique to the recovery organization or are included because of the additional recovery responsibilities.

5.4.1 RECOVERY MANAGER

The Recovery Manager is a representative of the Office of the Vice President of the Electric Production Department (Vice President or Manager). The Recovery Manager has overall responsibility for design, analysis, construction, and implementation of activities associated with recovery from the emergency, and shall ensure that plans and significant actions have the concurrence of managers of affected organizations such as the Station Superintendent, the Superintendent, Nuclear Generation Division, and, as necessary, the NRC and Commonwealth of Pennsylvania.

5.4.2 EMERGENCY DIRECTOR

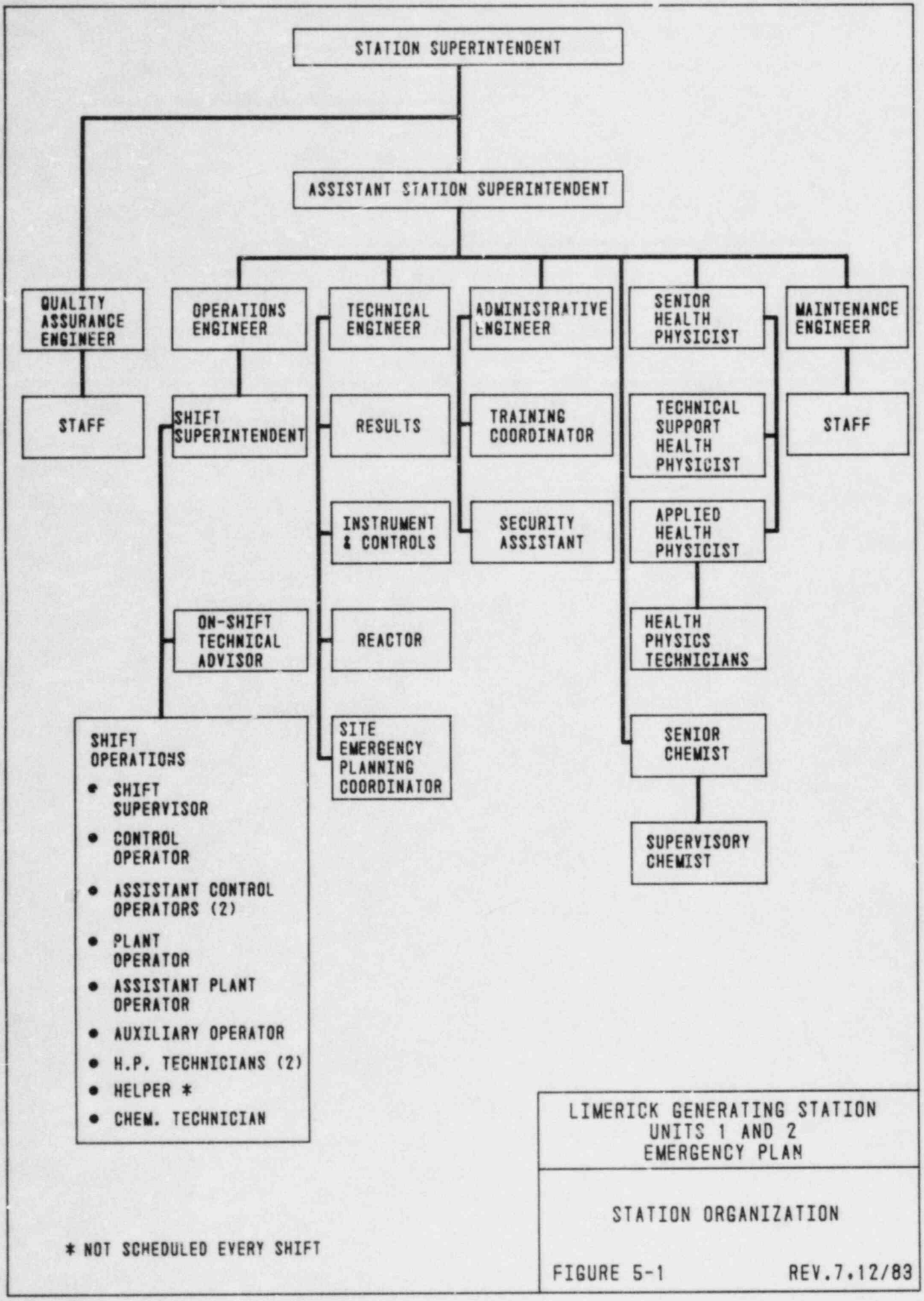
During the recovery phase, the Emergency Director position reverts to the position of the Station Superintendent (his alternate is the Assistant Station Superintendent), and he continues to have direct responsibility for plant operations. While retaining managerial responsibility for the normal station organization, the Emergency Director reports to the Site Emergency Coordinator in matters related to the recovery.

5.4.3 SITE EMERGENCY COORDINATOR

During the recovery phase, the Site Emergency Coordinator continues to be the Superintendent, Nuclear Generation Division (his alternate is the Superintendent-Nuclear Services Division. Depending upon the level of activities at the Emergency Operations Facility, the responsibilities of the Site Emergency Coordinator may be re-assigned to the Emergency Director (Station Superintendent) and/or the Recovery Manager and the position of Site Emergency Coordinator may be deleted.

5.4.4 DESIGN AND CONSTRUCTION SUPPORT OFFICER

The Engineering Design and Construction Support Officer has overall responsibility for managing the technical evaluation, design, and construction efforts of the recovery organization. In order to implement these responsibilities, the resources of PECo, GE, Bechtel, other contractors, service groups, and other utilities are aviiable and are activated by direct contact or through the Administration and Logistics Manager. Close liaison is maintained with the plant staff for review of plans and procedures.



LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

STATION ORGANIZATION

FIGURE 5-1 REV.7.12/83

EMERGENCY TEAM	INTERIM EMERGENCY TEAM (ON SHIFT) (NOTE 1)	EMERGENCY TEAM (PLANT STAFF)
RADIATION PROTECTION TEAM	SHIFT HEALTH PHYSICS TECHNICIAN	PRI. LDR.: APPLIED HEALTH PHYSICIST ALT. LDR.: HEALTH PHYSICS T.A. FIELD SURVEY GROUP PRI. LDR.: DESIGNATED MEMBER OF H.P. STAFF ALT. LDR.: DESIGNATED MEMBER OF H.P. STAFF TEAM ONE: PRI.: H.P. TECH. / PRI.: H.P. TECH. / ALT.: H.P. TECH. / ALT.: H.P. TECH. TEAM TWO: PRI.: H.P. TECH. / PRI.: H.P. TECH. / ALT.: H.P. TECH. / ALT.: H.P. TECH. PERSONNEL DOSIMETRY GROUP PRI.: DESIGNATED MEMBER OF HP&C STAFF ALT.: DESIGNATED MEMBER OF HP&C STAFF
DOSE ASSESSMENT TEAM		PRI. LDR.: SR. HEALTH PHYSICIST ALT. LDR.: HEALTH PHYSICIST
DAMAGE CONTROL TEAM	SHIFT SUPERVISOR (1) AUXILIARY OPERATOR	PRI. LDR.: ENGINEER – MAINTENANCE ALT. LDR.: ASSISTANT MAINTENANCE ENGINEER PRI.: DESIGNATED MEMBER OF MAINTENANCE DIVISION PRI.: DESIGNATED TEST ENGINEER ALT.: DESIGNATED MEMBER OF MAINTENANCE DIVISION ALT.: DESIGNATED TEST ENGINEER
PERSONNEL SAFETY TEAM	PLANT OPERATOR ASSISTANT PLANT OPERATOR	PRI. LDR.: HP - SR. T.A. ALT. LDR.: HP STAFF (T.A.) FIRST AID SEARCH & RESCUE GROUP PRI. LDR.: DESIGNATED MEMBER OF HP&C STAFF ALT. LDR.: DESIGNATED MEMBER OF HP&C STAFF PRI.: H.P./CHEM. TECH. ALT.: H.P./CHEM. TECH. PRI.: TEST ENG. ALT.: TEST ENG. PERSONNEL ACCOUNTABILITY GROUP PRI. LDR.: DESIGNATED TEST ENGINEER ALT. LDR.: DESIGNATED TEST ENGINEER PRI.: DESIGNATED TECH. ALT.: DESIGNATED TECH. PLANT SURVEY GROUP PRI. LDR.: H.P. TECH. ALT. LDR.: H.P. TECH. PRI.: H.P. TECH. ALT.: H.P. TECH.

LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

EMERGENCY TEAM COMPOSITION
SHEET 1 OF 3

FIGURE 5-2 REV.7, 12/83

EMERGENCY TEAM	INTERIM EMERGENCY TEAM (ON SHIFT) (NOTE 1)	EMERGENCY TEAM (PLANT STAFF)
CHEMISTRY SAMPLING AND ANALYSIS TEAM	CHEMISTRY TECH.	PRI. LDR.: SENIOR CHEMIST ALT. LDR.: SUPERVISORY CHEMIST ON HP & C STAFF PRI.: CHEM. TECH. ALT.: CHEM. TECH.
SECURITY TEAM	SECURITY FORCES IN ACCORDANCE WITH THE SECURITY PLAN	PRI. LDR.: SECURITY ASSISTANT ALT. LDR.: CAPTAIN OF THE GUARDS ACCOUNTABILITY GROUP PRI. LDR.: DESIGNATED SECURITY GUARD ALT. LDR.: DESIGNATED SECURITY GUARD ACCESS CONTROL GROUP PRI.: DESIGNATED SECURITY GUARD ALT. LDR.: DESIGNATED SECURITY GUARD PRI. AT TSC: DESIGNATED GUARD ALT. AT TSC: DESIGNATED GUARD PRI. AT EOF: DESIGNATED GUARD ALT. AT EOF: DESIGNATED GUARD PRI. AT MAIN GATE: DESIGNATED GUARD ALT. AT MAIN GATE: DESIGNATED GUARD
RECORDKEEPING AND COMMUNICATIONS (NOTE 2)	SHIFT SUPERINTENDENT SHIFT SUPERVISOR CONTROL OPERATOR	TECHNICAL SUPPORT CENTER PRI. LDR.: TEST ENGINEER PRI.: PERF. TA ALT. LDR.: TEST ENGINEER ALT.: PERF. TA PRI.: PERF. TA ALT.: PERF. TA PRI.: PERF. JTA ALT.: PERF. JTA PRI.: CLERICAL ALT.: CLERICAL EMERGENCY OPERATIONS FACILITY PRI.: TEST ENGINEER PRI.: PERF. TA ALT.: TEST ENGINEER ALT.: PERF. TA PRI.: PERF. TA ALT.: PERF. TA PRI.: PERF. JTA ALT.: PERF. JTA PRI.: CLERICAL ALT.: CLERICAL CONTROL ROOM OFF-SHIFT CONTROL OPERATOR AND ASSISTANT CONTROL OPERATORS
EMERGENCY DIRECTION	PRI.: SHIFT SUPERINTENDENT ALT.: SHIFT SUPERVISOR	PRI.: STATION SUPERINTENDENT ALT.: ASSISTANT STATION SUPERINTENDENT
OPERATIONAL SUPPORT CENTER COORDINATOR	SENIOR SHIFT PERSON (OTHER THAN CONTROL ROOM PERSONNEL) NOT INVOLVED ON-SCENE	PRI. COORD.: DESIGNATED TEST ENGINEER ALT. COORD.: DESIGNATED TEST ENGINEER

LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

EMERGENCY TEAM COMPOSITION
SHEET 2 OF 3

FIGURE 5-2 REV. 7, 12/83

EMERGENCY TEAM	INTERIM EMERGENCY TEAM (ON SHIFT) (NOTE 1)	EMERGENCY TEAM (PLANT STAFF)
DATA DISPLAY OPERATIONS	NONE	TECHNICAL SUPPORT CENTER PRI.: DESIGNATED MEMBER OF LIMERICK TESTS BR. PRI.: DESIGNATED MEMBER OF LIMERICK TESTS BR. ALT.: DESIGNATED MEMBER OF LIMERICK TESTS BR. ALT.: DESIGNATED MEMBER OF LIMERICK TESTS BR. EMERGENCY OPERATIONS FACILITY PRI.: DESIGNATED MEMBER OF LIMERICK TESTS BR. PRI.: DESIGNATED MEMBER OF LIMERICK TESTS BR. ALT.: DESIGNATED MEMBER OF LIMERICK TESTS BR. ALT.: DESIGNATED MEMBER OF LIMERICK TESTS BR.
TECHNICAL SUPPORT TEAM	SHIFT SUPERINTENDENT SHIFT SUPERVISOR SHIFT TECHNICAL ADVISOR	TECHNICAL SUPPORT CENTER PRI. LDR.: ENGINEER – TECHNICAL ALT. LDR.: RESULTS ENG. INSTRUMENTATION & CONTROLS ENG.
FIRE BRIGADE	SHIFT SUPERVISOR FIRE BRIGADE (NOTE 1)	ADDITIONAL FIREFIGHTING CAPABILITY WILL BE OBTAINED FROM OFFSITE FIRE COMPANY OR FROM PLANT STAFF AS REQUESTED BY THE FIRE BRIGADE.

NOTE 1. EXCEPT FOR CONTROL ROOM PERSONNEL, SHIFT PERSONNEL WHOSE FUNCTIONAL AREAS ARE NOT IMMEDIATELY IDENTIFIED AS BEING INVOLVED WILL REPORT TO THE SCENE TO ASSIST OR WILL REPORT TO THE OPERATIONAL SUPPORT CENTER.

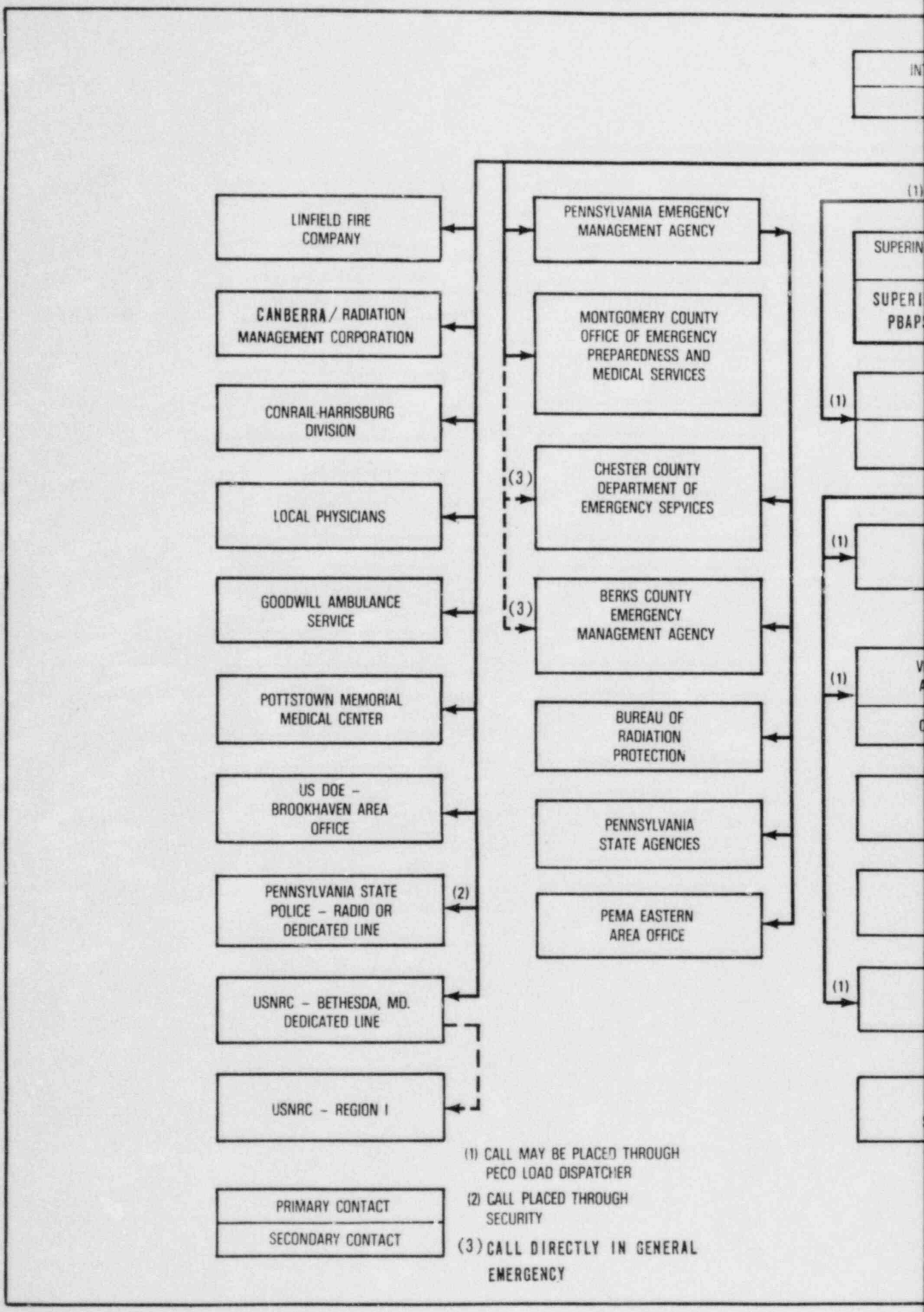
NOTE 2. EACH EMERGENCY TEAM INITIATES AND MAINTAINS RECORDS OF THEIR ACTIVITIES AS REQUIRED BY IMPLEMENTING PROCEDURES.

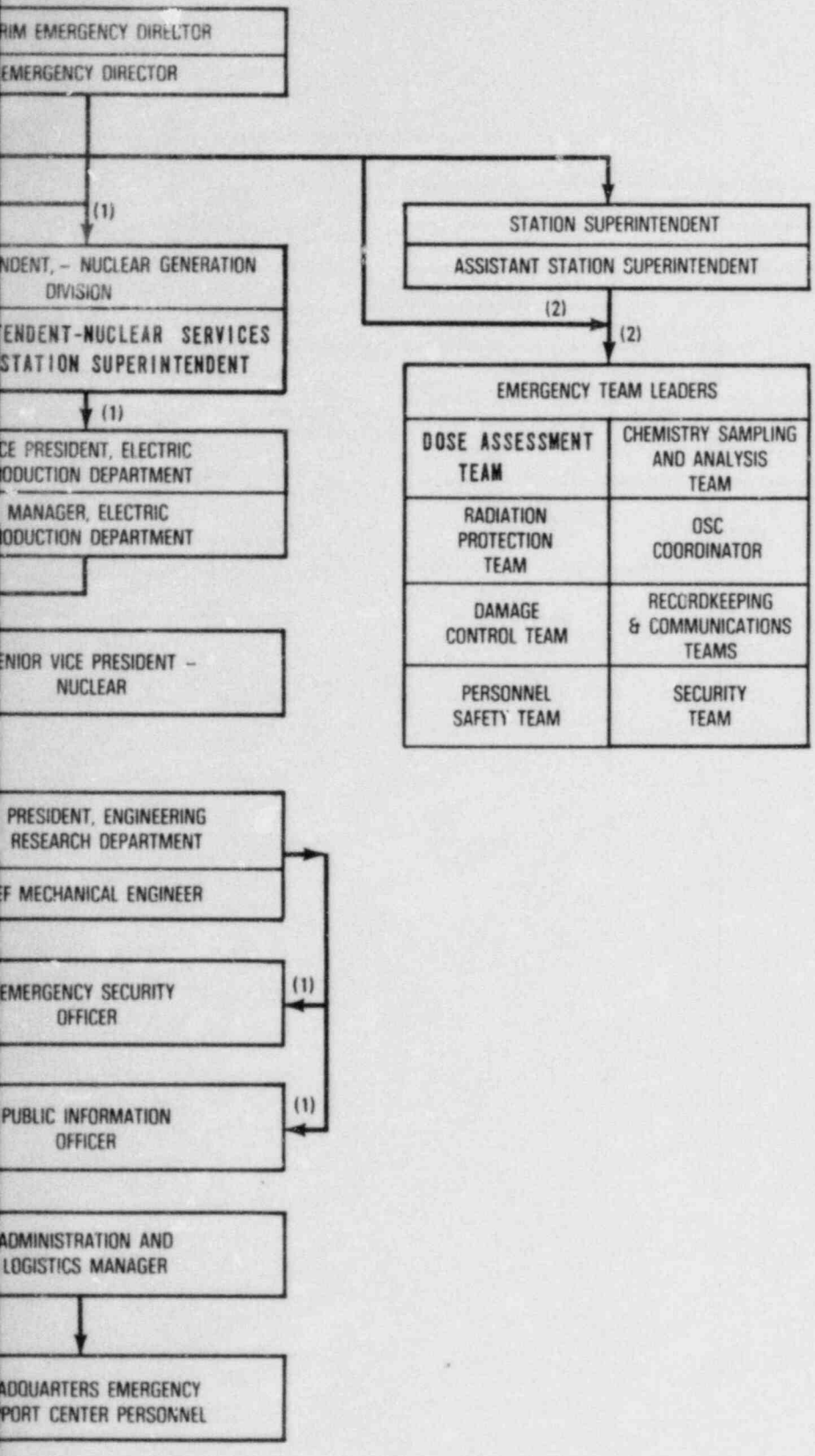
NOTE 3. CORPORATE OFFICE.

LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

EMERGENCY TEAM COMPOSITION
SHEET 3 OF 3

FIGURE 5-2 REV.7, 12/83


LINFIELD FIRE COMPANY
CANBERRA / RADIATION MANAGEMENT CORPORATION
CONRAIL-HARRISBURG DIVISION
LOCAL PHYSICIANS
GOODWILL AMBULANCE SERVICE
POTTSTOWN MEMORIAL MEDICAL CENTER
US DOE - BROOKHAVEN AREA OFFICE
PENNSYLVANIA STATE POLICE - RADIO OR DEDICATED LINE
(2)
USNRC - BETHESDA, MD. DEDICATED LINE
USNRC - REGION I
PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY
MONTGOMERY COUNTY OFFICE OF EMERGENCY PREPAREDNESS AND MEDICAL SERVICES
(3)
CHESTER COUNTY DEPARTMENT OF EMERGENCY SEPVICES
(3)
BERKS COUNTY EMERGENCY MANAGEMENT AGENCY
BUREAU OF RADIATION PROTECTION
PENNSYLVANIA STATE AGENCIES
PEMA EASTERN AREA OFFICE
(1)
(1)
(1)
(1)
PRIMARY CONTACT
SECONDARY CONTACT
(1) CALL MAY BE PLACED THROUGH PECO LOAD DISPATCHER
(2) CALL PLACED THROUGH SECURITY
(3) CALL DIRECTLY IN GENERAL EMERGENCY



LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

EMERGENCY NOTIFICATIONS

FIGURE 5-3 REV. 7, 12/83

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TIME FRAME	CONTROL ROOM	TECHNICAL SUPPORT CENTER	OPERATIONAL SUPPORT CENTER	EMERGE OPERATIONS
IMMEDIATE T = 0 THRU APPROXIMATELY T = 0.5 HOUR	• SHIFT SUPERINTENDENT • SHIFT SUPERVISOR • CONTROL OPERATOR • ASSISTANT CONTROL OPERATORS (2) • SHIFT TECHNICAL ADVISOR	• SHIFT HP TECHNICIAN IF DIRECTED BY SHIFT SUPERVISION	• PLANT OPERATOR • ASSISTANT PLANT OPERATOR • AUXILIARY OPERATOR • SHIFT HP TECHNICIAN • HELPER (IF ON SHIFT)	
SHORT TERM T = 0.5 HOUR THRU APPROXIMATELY T = 8 HOURS	• SHIFT SUPERINTENDENT • SHIFT SUPERVISOR • CONTROL OPERATOR • ASSISTANT CONTROL OPERATORS (2) • SHIFT TECHNICAL ADVISOR • OPERATIONS ENGINEER • COMMUNICATIONS SUPPORT TEAM MEMBER	• STATION SUPERINTENDENT • TECHNICAL ENGINEER • SENIOR HEALTH PHYSICIST • COMMUNICATIONS SUPPORT TEAM (S) • USNRC (5) • CONSULTANT (2) • OTHER MEMBERS OF PLANT STAFF WITH EXPERTISE IN AREA OF CONCERN • DATA DISPLAY OPERATORS • PERSONNEL SAFETY TEAM LEADER • DAMAGE CONTROL TEAM LEADER • SENIOR CHEMIST • PLANT SURVEY TEAM	• ASSISTANT PLANT OPERATOR • AUXILIARY OPERATOR • SHIFT HP TECHNICIAN • HELPER (IF ON SHIFT) • INITIAL GROUP OF OFF-SHIFT PLANT OPERATORS, ASSISTANT PLANT OPERATORS, AUXILIARY OPERATORS, HP TECHNICIANS AND TEST ENGINEERS TO REPORT • DESIGNATED TEST ENGINEER IN CHARGE	• SITE EMERGENCY • SR. HEALTH P • RADIATION SURV TEAMS OF 2 ME • CORPORATE COM REPRESENTATIVE • OTHER PLANT ST MAY BE ACTIVAT • DIRECTOR, RADIA PROTECTION • HEALTH PHYSI • PLANNING & S • PROCEDURES S • DATA DISPLAY • RECORDS & CO • DIRECTOR - E PLANNING
LONG TERM RELIEFS	• TEST ENGINEERS FOR COMMUNICATIONS SUPPORT TEAM • PLANT STAFF ENGINEER FOR OPERATIONS ENGINEER • NORMAL SHIFT RELIEF FOR OTHERS	• ROTATION AMONG TECHNICAL ENGINEER, HEALTH PHYS. - TECHS. STATION SUPERINTENDENT, ASSISTANT STATION SUPERINTENDENT, & RESULTS ENGINEER • TEST ENGINEERS FOR COMMUNICATIONS SUPPORT TEAM • DESIGNATED ALTERNATES FOR TEAM LEADERS	• ROTATION AS ARRANGED BY OPERATIONS ENGINEER FOR HP TECHNICIANS AND TEST ENGINEERS • NORMAL SHIFT RELIEF FOR OTHERS	• ROTATION AMON RAD. PROT., SUP SERVICES DIV & SUPERINTENDE GENERATION I D • HP TECHNICIANS SURVEY TEAMS • CORPORATE COM REPRESENTATIVE ARRANGED BY C COMMUNICATION

NOTE (1) INCLUDED HERE FOR COMPLETENESS. ACTUAL NEED AND TIMING DEPEND UPON EXISTING CONDITIONS.

CY ACILITY	HEADQUARTERS EMERGENCY SUPPORT CENTER	EMERGENCY SUPPORT CENTER (1)	CHEMISTRY/HP LABORATORY	SECURITY	EMERGENCY NEWS CENTER
				NORMAL POSTING CONTINUES EXCEPT ONE GUARD MAY BE SENT TO MAIN ACCESS GATE	
COORDINATOR SICIST TEAMS (2 BERS EACH) UNICATIONS FF MEMBERS) ON ST - APPLIED ED. COORD. PORT COORD. PER. RGENCY	• EMERGENCY SUPPORT OFFICER • SUPPORT PERSONNEL ACCOMMODATION GROUP • CORE PHYSICS COORD. • TRANSPORTATION COORDINATOR • PURCHASING COORDINATOR • ADMINISTRATIVE AND LOGISTICS MANAGER • DESIGN & CONSTRUCTION SUPPORT OFFICER • T&D SUPPORT COORDINATOR • STORES DIVISION COORDINATOR • CORPORATE COMMUNICATIONS REPRESENTATIVE • SUPPORT PERSONNEL PROCUREMENT COORD. • COMMUNICATIONS EQUIP. COORD. • INSURANCE COORD. • MEDICAL DIRECTOR	• SITE EMERGENCY COORDINATOR IN CHARGE • DESIGNATED TEST ENGINEER • TRAINING (GET): TRAINING COORDINATOR • SECURITY: SECURITY SUPERVISOR AND GUARDS • DOSIMETRY: HP STAFF & CONTRACTOR • SAMPLE ANALYSIS: CHEMIST AND CONTRACTOR • INSTRUMENT CALIBRATION & REPAIR: CONTRACTOR • ANTI-C'S: HP STAFF • RESPIRATORY EQUIPMENT: HP STAFF & CONTRACTOR • FOOD PREPARATION: CONTRACTOR	• RADIOCHEMIST • CHEMIST • CHEMISTRY TECHNICIAN	• SECURITY ASSISTANT • CAPTAIN OF THE GUARD • TWO GUARDS AT MAIN ACCESS GATE	• CORPORATE COMMUNICATIONS REPRESENTATIVE IN CHARGE • DESIGNATED PLANT STAFF MEMBER • NRC AND STATE REPRESENTATIVES • CORPORATE SPOKESMAN • TECHNICAL ADVISOR
DIRECTOR, - NUCLEAR ON . NUCLEAR SION ELIEVE RAD UNICATIONS ELIEF AS PORATE	• RELIEFS ARE DESIGNATED ALTERNATES FOR THESE POSITIONS	• SUPPORT FUNCTIONS WILL INCLUDE ADEQUATE STAFF TO PROVIDE RELIEFS	• ROTATION AS ARRANGED BY RADIOCHEMIST	• ROTATION AS ARRANGED BY SECURITY SUPERVISOR OR CAPTAIN OF THE GUARD	• ROTATION AS ARRANGED BY CORPORATE COMMUNICATIONS & PLANT STAFF TECHNICAL ENGINEER

**LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN**

**PERSONNEL AND FACILITIES
PLANNING BASIS SUMMARY**

FIGURE 5-5 REV. 7, 12/83

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6.0 EMERGENCY ACTIONS

This section identifies the measures to be used for each type of emergency previously classifed in Section 3. Criteria and action levels are provided for guidance of operators in determining when emergency plan implementation is required. Emergency measures begin with the realization by the Shift Supervision that a situation exists with a potential or real hazard comparable to one of the classes of emergencies listed in Section 3. Shift Supervision assesses the situation and classifies the emergency. Assuming the role of Interim Emergency Director, the Shift Superintendent initiates the notification process, activates the applicable emergency organization, and directs emergency measures.

6.1 ACTIVATION OF EMERGENCY ORGANIZATION

The methods described below are used to alert or activate the required personnel for each class of emergency. Means have been established by which activation messages may be authenticated or verified. Formats for initial emergency messages are shown in Appendix F.

6.1.1 EMERGENCY ORGANIZATION ACTIVATION FOR UNUSUAL EVENTS

This class is described in Section 3.1.1. Although conditions within this classification are not serious enough to constitute an emergency, upon discovery of an Unusual Event, efforts are to be expended to correct the condition and prevent degradation of plant safety. The Shift Superintendent will most likely become aware of an Unusual Event by verbal reports, or by direct observation of instrumentation and conditions in and around the plant. Appropriate Emergency Action Levels are described in Table 4-2.

Unusual Events are normally handled by the operating shift complement and may involve activation of Interim Emergency Teams. However, the Shift Superintendent may activate Emergency Teams if needed. Interim Emergency Teams are activated via the plant Public Address (PA) system. Emergency Teams are activated by the plant PA system during normal working hours or by telephone (as shown in Figure 5-3) during non-working hours. The Shift Superintendent notifies local support agencies (such as ambulance service) by telephone directly.

Unusual Events are reported to the PEMA and to Montgomery; PEMA notifies Chester, and Berks Counties to ensure that

these agencies are well informed and can address concerns of the public, government officials, and news media. The notification shall be within about 15 minutes from the time at which the operators recognize events have occurred which make declaration of an emergency class appropriate. This early notification also permits the government agency to decide on the degree of activation of its emergency resources. The notification method may be commercial telephone or the systems shown in Figure 7-2.

6.1.2 EMERGENCY ORGANIZATION ACTIVATION FOR ALERT

This class is described in Section 3.1.2. Alert Conditions meet or exceed the threshold for emergency conditions and, therefore, prompt notification is required to activate applicable portions of the emergency organization. Notification is initiated by shift supervision upon discovery and classification of the condition. Notifications will be within about 15 minutes after classification of the event. The notification sequence is shown in Table 4-2. Notification methods are shown in Figure 7-2. Interim Emergency Teams are activated via the plant PA system. Emergency Teams are activated by the plant PA system during normal working hours or by telephone (as shown in Figure 5-3) during non-working hours. These notifications result in activation of the Technical Support Center and the Operational Support Center.

The Superintendent - Nuclear Generation Division is notified by shift supervision or the Station Superintendent. The Superintendent - Nuclear Generation Division will notify the corporate response organization if necessary.

The Shift Superintendent assumes the role of Interim Emergency Director. The Station Superintendent assumes the role of Emergency Director when he is on-site and thoroughly cognizant of the situation, at which time the Shift Superintendent resumes his responsibilities and authority within the Control Room.

The notifications and extent of activation of PEMA and County organizations are in accordance with their emergency plans.

6.1.3 EMERGENCY ORGANIZATION ACTIVATION FOR SITE AREA EMERGENCY

This class is described in Section 3.1.3. Activation of the emergency organization is as described in Section 6.1.2. In

addition, the PECo Headquarters Emergency Support Center is activated through the notifications shown in Figure 5-3. The Office of the Vice President, Electric Production Department (either the Vice President or Manager) assumes the role of Emergency Support Officer. The Emergency Operations Facility is activated and functions under the direction of the Site Emergency Coordinator.

As appropriate for the existing emergency conditions, other portions of the emergency organization (such as Radiation Management Corporation, Conrail-Harrisburg Division, or US DOE, Brookhaven) are activated as shown in Figure 5-3.

6.1.4 EMERGENCY ORGANIZATION ACTIVATION FOR GENERAL EMERGENCY

This class is described in Section 3.1.3. Activation of the emergency organization is as described in Section 6.1.3.

6.2 ASSESSMENT ACTIONS

Assessment actions involve the acquisition and evaluation of data and conditions related to the emergency. Depending upon the type of emergency, assessment is accomplished in the Control Room, Emergency Operations Facility, Technical Support Center, and Headquarters Emergency Support Center. Evaluation of the information leads to determination of the status of the emergency and the plant, actions to be taken to ameliorate, contain, or correct the condition at its source, and off-site consequences.

On-scene personnel provide information to the Interim Emergency Director or Emergency Director in regard to status and the effectiveness of local corrective action. This information may result from radiological surveys, damage appraisal, or other direct observation. Plant instrumentation provides the capability to determine plant status under normal and emergency conditions including the operation and effectivenss of plant safety systems.

Radiological instrumentation includes: area radiation monitors, ventilation effluent radiation monitors, liquid effluent radiation monitors, primary containment radiation monitors, and miscellaneous process radiation monitors. Data from these sources would be augmented by plant and field surveys for radiation and airborne levels.

Analysis of off-site Environmental Monitoring Program dosimetry devices and samples would be initiated according

to procedures. This data will provide information as to the off-site integrated dose during the emergency. Dosimetric devices dedicated for emergency purposes are located near the devices which serve the routine environmental monitoring requirements. Fixed position dose rate meters are located at weather stations. This information and the meteorological instrumentation (wind speed, wind direction and pattern, and temperature) are used in assessing the off-site dose to the public. Procedures describing methods for calculating off-site doses are provided. The methods incorporate constants which simplify and speed up calculations.

A map of the local area is provided at the Headquarters Emergency Support Center and at the Emergency Operations Facility. The map is divided into sectors defined by compass points. Each sector is further divided and coded for ease in identifying the location of a particular dose rate measurement or environmental sample. Overlays placed over the map with centerline along the direction of wind flow enables the determination of off centerline dose rates.

While the assessment of accident consequences will be via calculations based on plant source terms, release rates and meteorological data, off-site radiation survey data will be of high value. The PECo Survey Groups may be augmented by teams from the BRP, from US DOE Brookhaven, and from Radiation Management Corporation. It is estimated that a PECo Survey Group can be readied, dispatched, and can return dose-rate readings by radio within 20-30 minutes from on-site. Similarly, using personal or company vehicles, the two-person Survey Groups should be able to initiate off-site survey results within one hour. These data will be available for continued assessment by the Emergency Director and the Site Emergency Coordinator.

Long term assessment shall be accomplished by direct surveillance of the environment via a program which involves analysis of various samples including vegetation, milk, and water as well as radiation levels from TLD measurements. This program will incorporate the existing Environmental Monitoring Program appropriately modified to adequately address the particular emergency needs. In addition, log sheets and other records developed by the various emergency centers and teams will be useful for accident assessment.

Technical evaluation of plant status and development of recommendations for corrective actions in regard to system

operation occur in the Technical Support Center and at the PECo Headquarters Emergency Support Center. The results of assessment actions are provided to the Bureau of Radiation Protection and the US NRC. Emergency centers and teams maintain logs or otherwise record pertinent data and events, including the time of occurrence. Continuing assessment, the use of logs or other records, and the transmittal of assessment data via designated communication links allow cognizant emergency organizations to be informed of emergency conditions. Followup messages include the following as applicable to the emergency:

1. Location of incident and date/time of occurrence.

2. Identification of personnel at communication points.

3. Emergency class.

4. Actual or potential radioactive release data (including type, source, quantity, rate and duration, height of release, chemical and physical form, prevailing weather and wind conditions, and river flowrate as applicable).

5. Actual or projected dose rates and integrated dose rates at the Exclusion Area Boundary and at other distances from the plant.

6. Projections of integrated doses for affected sectors and distances.

7. Estimates of surface radioactive contamination.

8. Status of emergency response actions.

9. Recommended emergency actions, including evaluation of protective action options.

10. Requests for assistance.

11. Prognosis for worsening or termination of the event based upon plant information.

6.2.1 RADIATION AND METEOROLOGICAL MONITORING SYSTEM

The Technical Support Center and Emergency Operations Facility staffs will utilize a computerized Radiation and Meteorological Monitoring System to assess the off-site radiological impact of emergencies. The Radiation and Meteorological Monitoring System (RMMS) is a computer-based data acquisition and analysis system which provides the capabilities for making near real-time, site specific estimates of atmospheric transport and diffusion and offsite doses during and following an accidental airborne radioactivity release.

The RMMS accomplishes this task by accessing near real-time release point data and meteorological data from one of two meteorological towers on the site. The release point data includes 15 minutes average of vent flow rate data and gross activity release rate data as measured by the vent effluent monitoring system. The meteorological data includes 15 minute averages of wind speed and direction and sigma theta and delta T measurements for stability determination.

The meteorological data and release point data are used with site specific terrain conditions to calculate atmospheric dispersion coefficients (X/Qs, depleted X/Qs) for each of the sixteen sectors using the methodologies of Regulatory Guide 1.111 and 1.145. The meteorological model incorporates such source characteristics as release mode (elevated, downwash, or wake-split) and building wake effects. The output from the model includes the plume dimension and position, and the location magnitude and arrival time of the peak relative concentration and relative concentrations at appropriate locations.

In order to calculate dose rates and integrated doses, the gross activity release rate is converted to an isotopic release rate by obtaining an isotopic breakdown of a release point grab sample and entering the data into the RMMS. The isotopic release rates are then used with the X/Qs and Regulatory Guide 1.109 dose conversion factors to calculate plume center line whole body, skin and thyroid dose rates. A finite plume model described in equation 7.42 in "Meteorology and Atomic Energy, 1968", provides capabilities for calculating whole body dose rates due to "gamma shine" from an elevated plume. Routines are also available to compute integrated individual and population doses. In the event of accidental airborne radioactivity, release, initial transport and diffusion estimates for the plume exposure EPZ

| can be obtained within 15 minutes following the classification of an incident. The RMMS can rapidly provide estimates of projected doses, PAG limits and maximum distances at which PAGS may be exceeded (not only to 10 miles). The methodology for estimating these projected doses assume that the release characteristics and meteorological conditions continue for a specified release duration determined by the RMMS operator. Following these initial estimates more refined analyses may be employed as additional data becomes available. To allow flexibility in data analysis and to provide calculational capability in the event meteorological data or release point data is inaccessible, manual data entry is possible for all variables used in determining X/Qs and doses.

| The RMMS data files and calculational capabililities are available to personnel in the control room, TSC, and EOF through interractive consoles located in thesefacilities. Communication ports are also provided to allow for remote interrogation of meteorological parameters and effluent transport and diffusion by the NRC and the appropriate State emergency response agency. The available data and format conform to the guidance specified in Regulatory Guide 1.23, Proposed Revision 1, Table B-3. Dose model results may also be accessed through these ports as this data becomes available for broadcast.

| Prior to the implementation of the computer based RMMS, site specific estimates of atmospheric transport and diffusion of offsite doses during and following an accidental airborne radioactivity release will be made by using a manual procedure. This manual procedure will become the backup method once the RMMS has become operational.

| The manual procedures use pre-determined atmospheric dispersion coefficients (X/Qs, etc.) based on the same criteria used in the RMMS system. The same program was used to establish the manual procedure X/Qs and calculate the RMMS X/Qs.

| The user of the manual procedure is directed to the correct X/Q value by a "flow chart" scheme in which the user selects stability class, plant effluent fow rate, wind speed and direction, and receptor location. The result is one value that fits all of the criteria.

| Plume centerline whole body, skin, and thyroid dose rates and integrated doses are calculated using the X/Qs,

Regulatory Guide 1.109 dose conversion factors, and isotopic release rates.

6.2.2 EMERGENCY RESPONSE FACILITY DATA SYSTEM

The Control Room, Technical Support Center, and Emergency Operations Facility will use an emergency response facility data system to aid in assessing plant response and status during emergencies. The Emergency Response Facility-Data System (ERFDS) is a computer based real-time Data acquisition and Display System which gathers and records selected plant parameters for display in the Control Room, Technical Support Center, and Emergency Operations Facility.

A subset of ERFDS displays are designed to aid the Control Room Operator in the performance of the Emergency Operating Procedures. These displays provide information pertinent to Reactivity Control, Reactor Core Cooling, Reactor Coolant System Integrity, Radioactivity Control, Containment Integrity, and Power System Status. These displays are available to personnel in the TSC.

ERFDS also provides concise displays of parameters selected for post-accident monitoring. These displays are designed to aid TSC personnel in assessing plant conditions and in assisting Control Room personnel in recovering from abnormal or accident conditions and in mitigating their consequences. The displays include parameter versus time and parameter versus parameter trending.

ERFDS utilizes high speed data recording, long term data storage, and a transient analysis program package to aid the TSC staff in reconstructing the accident sequence as well as tracking the plant steady state and dynamic behavior prior to and through the course of an event.

ERFDS provides containment and radioactive release information to the TSC and EOF personnel in order to aid in the evaluation of the magnitude and effects of actual or potential radioactive releases from the plant.

ERFDS displays are available in the Control Room, TSC, and EOF via interactive color graphic display consoles. Hardcopy output devices are available at each location.

6.2.3 ASSESSMENT WITHOUT INSTRUMENTATION

Should the effluent radiation monitors be off scale or otherwise inoperable, assessment of releases and off-site exposures can be made using the RMMS even though the communication link to the effluent radiation monitor is lost. The RMMS will prompt the operator for manual data entry of necessary release point data. This data can be obtained from containment monitor readings or grab samples. In the event the RMMS is inoperable, a complete manual backup procedure is available to calculate releases and offsite doses. The procedure for using the manual backup procedure is available to calculate releases and offsite doses. The procedure for using the manual backup procedure is provided in Emergency Plan Procedure No. EP-316 for LGS, also itemized in Appendix D.

6.2.3.1 CONTAINMENT MONITORS

Procedures and figures correlate the containment high range radiation monitor readings (R/hr) to the percent of fuel inventory released to the containment atmosphere as a function of time after plant shutdown. (Appendix B). The percentage of fuel inventory released can be converted to radioactivity (curies) available for release by multiplying by an isotopic spectrum determined by the Post Accident Sampling System (PASS). For periods when the PASS isotopic spectrum is not available, a default core activity spectrum of FSAR Table 15-6-14 can be used. Isotopic release rates can be entered into the RMMS or used with the manual backup methodology for estimating offsite doses.

6.2.3.2 GRAB SAMPLES

Particulate, Iodine, and Noble Gas grab samples can be obtained from the effluent monitors located at the release points. Analyses of the samples are performed in the counting room facilities to determine isotopic release rates. The release rates can be entered into the RMMS or used with the manual backup procedure to determine offsite doses.

6.2.3.3 POINT OF RELEASE SAMPLES

Helicopters can be used to obtain point release samples (i.e., top of stacks). Analyses of the samples are performed in counting room facilities and release rates can

be determined. Release rates are then used to calculate exposures.

6.2.3.4 PATHWAY SAMPLES

Samples obtained by helicopter or field survey teams in the plume pathway can also be used. Analysis data are back calculated to point of release and then exposures at locations of interest are calculated.

6.2.4 FIELD DETECTION AND MEASUREMENTS OF RADIOIODINES

Emergency kits contain radiation survey equipment which enables the Survey Teams to obtain dose rates, surface contamination, and airborne contamination including radioiodine measurements to supplement calculations based on effluent data. These emergency kits are located at emergency facilities outside the plant for ready accessibility. The equipment in these kits is dedicated for emergency use. Procedures define the steps necessary for inventory checks and calibrations.

Additional field survey capabilities are available with Department of Environmental Resources/Bureau of Radiation Protection, Department of Energy, and other governmental agencies. These surveys will be essentially independent of the facility's efforts.

Should the Site Emergency Coordinator deem it necessary, he may organize and coordinate field survey support from Department of Energy, Canberra/Radiation Management Corporation, and other utilities. Thus, additional trained manpower and instrumentation are readily available within a few hours. The Department of Energy and Canberra/Radiation Management Corporation have mobile labs which facilitate rapid analysis of field samples and thus enhance the assessment of radiological conditions.

6.3 CORRECTIVE ACTIONS

Corrective actions include those emergency measures taken to ameliorate or terminate an emergency situation at or near the source of the problem.

Corrective action may include a shutdown of the offending unit. When both units are operating, a shutdown of the second unit may also be advisable. A Fire and Damage Team is part of the on-site emergency organization. The Interim

Emergency Director (or Emergency Director) shall activate this team should he deem it necessary because of actual or potential jeopardy of plant equipment. This team is responsible for investigating an emergency situation as it affects plant equipment or safe operation of that equipment. Fire or physical damage to equipment may occur or be imminent. The Fire and Damage Team performs necessary corrective actions such as activation of fire protection systems, use of portable fire fighting equipment, and protecting vital equipment. The Team may recommend to the Emergency Director that equipment or a system be removed from service and isolated; or, that off-site fire fighting support be called in.

The Radiation Protection Team data may indicate that the air contains particulate and radioiodine contamination. A corrective action may involve isolation of building vents and utilizing the reactor enclosure recirculation mode to minimize release to the environment.

System design is aimed at automatic corrective actions, such as plant shutdown and system isolation, whenever operating parameters become abnormal. Operating procedures are written for manual control of these systems, should the automatic features fail. Personnel from the Operations Support Center are available for system or equipment operations which are performed outside of the Control Room.

6.4 PROTECTIVE ACTIONS

Protective actions are those emergency measures taken for the purpose of preventing or minimizing radiological exposure to persons which would be likely to occur if the action were not taken. Certain protective actions, such as local evacuation and respiratory protection, are also applicable for non-radiological emergencies, such as a fire. This section describes protective actions, emergency action levels or other criteria for application, and the area or population-at-risk involved (i.e. personnel on-site and the general public off-site).

Plant visitors who have not completed the required training program are escorted to ensure proper response under emergency conditions.

Public information material on protective actions is prepared and disseminated to provide clear instructions to

the population-at-risk. This information is prepared jointly by PECO and the PEMA.

6.4.1 PROTECTIVE COVER, EVACUATION, AND PERSONNEL ACCOUNTING

6.4.1.1 PLANT SITE

a. Action Criteria

Plant instrumentation, radiological surveys, direct observation, verbal reports, and the occurrence of specific events provide a basis for initiating protective actions. Table 6-1 summarizes the emergency exposure criteria for entry or reentry into areas for purposes of undertaking actions such as fire control; minimizing damage to facilities; reducing release of effluents; and for carrying out life saving activities. Table 6-2 lists the criteria for implementing various levels of evacuation. The criteria are sufficiently low that the protective actions will be completed before occupational limits outlined in 10 CFR, Part 20 are approached. In addition, the occurrence of a fire or the detection of toxic gases are criteria for non-emergency response organization personnel to evacuate to, at least, a local unaffected area. Extensive provisions are made for monitoring plant parameters. Control Room alarms (or combinations of alarms) provide an important basis for initiating protective actions. Alarms on area radiation monitors and continuous air monitors provide a mechanism for locally alerting personnel to the need to take protective action.

b. Notification Methods

Shift supervision will notify plant personnel of the existence of emergency conditions which may require initiation of protective actions. The plant PA system and the Evacuation Alarm System, which includes the River Warning System, are the means to be used. These methods are capable of providing warning to employees, working and non-working visitors, contractors and construction personnel, and other persons who may be in the public access areas or passing through the site. Notification can be initiated immediately following receipt of alarms

or identification of the emergency in some cases. In other cases, confirmation of emergency conditions through direct observation, verbal reports, or comparison of instruments may be prudent. In any event, it is anticipated that only several minutes should elapse between receiving an alarm or report and completion of notification.

The plant PA system and the Evacuation Alarm and River Warning System are described in Section 7 of this Plan.

c. Evacuation

PECO personnel and contractors filling emergency response organization positions are considered essential personnel. As such, they will report to their emergency response locations. They will not evacuate unless specifically directed to by the (Interim) Emergency Director. All other personnel are considered non-essential.

Local Evacuation

Local Evacuation is initiated primarily by area radiation monitor alarms and continuous air monitor alarms, but is also applicable for fire alarms, explosions, toxic material conditions, and radiation, contamination, and airborne radioactivity surveys which indicate conditions above applicable limits. The immediate response by individuals in the vicinity of such an alarm or condition is evacuation to an unaffected area, likely within the same building, but away from the localized condition. In the absence of readily available radiological survey information or other logical assessment of conditions, evacuation will be, at least, to a point where other area radiation monitors, continuous air monitors, or observation of local conditions show that the area is not affected. Based upon evaluation of Control Room instrumentation or other supporting information, the affected area and the local unaffected assembly area for evacuees will be transmitted over the plant PA system. The Interim Personnel Safety Team and the Interim Radiation Protection Team report to the scene to evaluate conditions, to provide information to the Control Room, and to perform other emergency

functions such as personnel accountability, decontamination, First Aid administration, and control of the spread of contamination.

Partial Plant Evacuation

Partial Plant Evacuation is initiated by the same mechanism as the Local Evacuation or by conditions which indicate that Local Evacuation assembly areas are not adequate. Notification for personnel to proceed with a Partial Plant Evacuation will be announced on the plant PA system. The affected area and assembly areas (if appropriate) will be announced. Partial Plant Evacuation involves the evacuation of personnel, except Control Room and emergency response organization personnel, from the affected building. Essential shift personnel will perform their emergency duties or report to the Operations Support Center.

During the period of Unit 1 operation with Unit 2 under construction, construction-related personnel (manual, non-manual, and subcontractor) will evacuate to areas east and northeast of the plant via access control gates. A method (such as badging, tags, or work chips) shall be implemented to assist in accounting for these personnel. These personnel are considered non-essential personnel.

Assembly areas for Partial Plant Evacuations are listed in Table 7-1. The actual decision to implement a Partial Plant Evacuation is the responsibility of the Interim Emergency Director or Emergency Director. This decision is based largely on his evaluation and judgement of the magnitude and severity of the situation on an individual case basis. Factors to be considered include: the area(s) affected; the number of personnel involved; the affect of personnel movement on the ability to combat the cause of the emergency; the potential for radiological exposure to personnel which would result from both evacuating and not evacuating; and the potential for escalation/spread of the emergency.

Site Evacuation

Notification of a Site Evacuation is by sounding of the Exclusion Area Evacuation Alarm, followed by an announcement over the plant PA system. The assembly area(s) and evacuation routes will be announced. Assembly areas are listed in Table 7-1. A taped message is broadcast in the vicinity of the Schuylkill River to warn personnel in these areas. Non-essential personnel (station personnel, visitors, and non-construction contractors), except for Control Room and emergency response organization personnel, will exit via the Security Stations and will proceed to the parking area(s) for transportation. Evacuees are expected to use their personal vehicles in evacuating to the designated assembly area(s). Designated assembly areas are located outside the protected area. Because plant access roads are maintained clear during the winter months, travel on these roads is expected to be possible at all times.

During the period of Unit 1 operation with Unit 2 under construction, construction-related personnel (manual, non-manual, and subcontractor) will evacuate as for a Partial Plant Evacuation and then proceed in personal vehicles to the designated assembly area.

d. Personnel Accountability

The Interim Personnel Safety Team and Security forces shall follow implementing procedures for personnel accountability. The Personnel Safety Team and additional Security personnel assist when they are activated. For Local Evacuations and Partial Plant Evacuations, information from evacuees is an important means of accounting for plant personnel. For Partial Plant and Site Evacuations, construction-related personnel working on Unit 2 are accounted for at the point of egress using means such as badges, tags, or work chips. For Site Evacuations, plant personnel and contractor personnel working on Unit 1 are accounted for at the security exit point and the security computer is used to generate a list of those persons who have not evacuated. This list is compared with a listing of those who are at the assembly areas. Personnel

not evacuated and not at an assembly area would be considered unlocated. The results of the personnel accountability effort are reported to the Interim Emergency Director or Emergency Director who shall take the necessary steps to initiate search and rescue operations for missing persons.

e. Monitoring of Evacuees

Evacuees are checked for contamination. Necessary personnel and vehicle decontamination efforts are initiated at the assembly area using in-plant equipment or emergency kit supplies. Priority for decontamination shall be given to personnel found to have the highest levels of contamination. Any personnel suspected, or known, to have ingested or inhaled radioactivity shall be given a whole body count, as soon as conditions permit, to assess their internal exposure. Dosimetric devices of evacuees are to be recovered and processed as soon as practicable. Where neutron exposure is suspected, techniques are applied and samples obtained which will provide data for estimating neutron dose. Implementing procedures describe these techniques and samples.

f. Search and Rescue

If, as a result of personnel accounting procedures, it is determined that an individual is missing, attempts shall be made to discover his location without resorting to Search and Rescue by interviewing the evacuees and the personnel in the Control Room, Technical Support Center, and assembly areas, and by repeated PA system announcements. Search and Rescue operations shall be initiated if an individual is definitely known to be trapped or injured in a high radiation area or if an individual is known to be missing and all other attempts to contact the individual have failed.

Procedures for any Search and Rescue operation must necessarily be general and will depend on the plant conditions at that time. Normally, it is expected that such operations will be authorized by the (Interim) Emergency Director and initiated from the OSC. They may also be initiated from the Control Room. In either case, Search and Rescue operations

will not be undertaken without notifying the Interim Emergency Director or the Emergency Director. Planned radiation exposures, in excess of normal station administrative guidelines are not permitted without the authorization of the Interim Emergency Director or the Emergency Director. Injuries are reported to the Interim Emergency Director or Emergency Director who assesses the need for off-site medical support.

Table 6-1 summarizes emergency exposure criteria. A minimum of three people will constitute a Search and Rescue team. Participation will be voluntary. The team shall don appropriate clothing and respiratory equipment. High range gamma survey instrument, flashlights or spotlights, high range self-reading dosimeters, and a stretcher or blanket shall be part of their basic equipment unless clearly not required by existing conditions. If immediately available, portable radio (walkie-talkie) communication should be established between the Search and Rescue Team and the Control Room.

g. Re-entry

Re-entry is a deliberate process involving no unnecessary radiation exposure and shall be delayed until personnel are accounted for and necessary attention has been directed to injured or contaminated evacuees. Necessary protective clothing and equipment, such as for the Search and Rescue Teams, must be available before re-entry is authorized.

The Emergency Director shall be kept informed continuously as to hazard conditions and the condition of plant equipment by the Shift Superintendent.

As the re-entry is a planned process, the planned exposure of team members will be limited to normal occupational limits outlined in 10 CFR,, Part 20.101. The Radiation Protection Team Leader shall advise the Emergency Director as to stay times, dose rates and exposures.

6.4.1.2 OFF-SITE AREAS

a. Action Criteria

Notification that an Alert Condition (or more severe classification) exists is the criterion for Montgomery, Berks, and Chester Counties and the PEMA to implement their emergency plans. In accordance with Annex E of the Commonwealth of the Pennsylvania Disaster Operations Plan, the PEMA notifies the BRP which serves as the lead Commonwealth agency for technical assistance to Commonwealth agencies, Counties, and local government regarding radiological health and incident assessment. The BRP contacts Limerick Generating Station to verify that an emergency exists and to obtain technical information, and then makes recommendations to the PEMA regarding protective actions for the public. The BRP Support Plan for Fixed Nuclear Facility Incidents utilizes the PAGs in the US Environmental Protection Agency (EPA) Manual of Protective Action Guides and Protective Actions.

Philadelphia Electric will provide follow-up information to the BRP or other appropriate off-site authorities. The follow-up information will keep these authorities appraised of existing or potential radiological releases, meteorological conditions, projected doses and contamination levels, licensee actions, recommend protective actions and other information pertinent to the authorities' responsibilities. The information may be provided over open communication paths or in person to BRP personnel. If the follow-up is made because of a change in emergency classification, the notification formats in Appendix F will be used.

b. Notification Methods

Annex E of the Commonwealth of Pennsylvania Disaster Operations Plan addresses notification to the general public and others in regard to protective cover and evacuation.

Philadelphia Electric Company has begun design work for an alerting system which is intended for use by the Counties, in conjunction with the Emergency

Brodcast System (EBS), to provide notification to the general public.

Annex E assigns Risk Counties responsibility to: develop a system for rapid notification, in priority order, of County and local government heads, key staff, emergency forces, volunteer organizations, schools, hospitals, nursing homes, business and industry; ensure that the alert and notification system is operable on an around-the-clock basis; prepare and disseminate public information material on protective actions to provide clear instructions to the population at risk; prepare and maintain material current for dissemination through the Emergency Broadcast System; and to include provisions in the alert plan for notification of transients.

The PEMA will notify other States within the ingestion pathway EPZ should such action be necessary.

c. Protective Actions for the Public

Using Bureau of Radiation Protection guidelines, the Interim Emergency Director, Emergency Director or Site Emergency Coordinator will make protective action recommendations to the BRP. These protective action recommendations will be based on existing and potential plant conditions, existing or potential radiological releases, and existing or projected meteorological data.

The BRP makes recommendations to the PEMA in regard to protective actions for the public. (In the event that BRP is unavailable, PECo would provide protective action recommendations directly to PEMA and the Counties.) PEMA reviews these recommendations with the Governor. PEMA implements the Governor's decision on the appropriate protective action.

The BRP Support Plan for Fixed Nuclear Facility Incidents and the PEMA Annex E discuss and assign responsibilities relating to sheltering, evacuation, and thyroid prophylaxis. Implementation of the sheltering option involves notification to the public and the availability of shelter.

Notification is discussed in Section 6.4.1.2.b. In the general climate of Pennsylvania, the BRP considers any building which is reasonably winter worthy to be adequate for two hours protection from inhalation hazards.

The evacuation option involves notification, traffic control, security, considerations for special evacuations such as hospitals, and mass care for evacuees. Annex E of the Commonwealth of Pennsylvania Disaster Operations Plan assigns responsibilities to various Commonwealth agencies and to Counties to ensure the capability to implement measures in each of these areas.

The usefulness of certain compounds containing stable iodines as agents to block thyroidal uptake of radioiodines is recognized by the Commonwealth. Thyroid blocking agents are predistributed to the counties and certain Commonwealth agencies for use by emergency workers. The Pennsylvania Department of Health is responsible for directing the use of these agents by off-site emergency workers.

6.4.2 USE OF ON-SITE PROTECTIVE EQUIPMENT AND SUPPLIES

Various equipment used for radiological purposes is readily available at the station. This equipment includes protective clothing, respiratory equipment, and radioprotective drug for thyroids. Routine use of the clothing and respirators is part of the applied radiation protection program.

Additional equipment is available in the station storeroom and in emergency kits at specific locations. Under emergency conditions, the number of persons requiring protective equipment would be limited by measures such as protective cover or evacuation and should consist primarily of emergency team members.

6.4.2.1 INDIVIDUAL RESPIRATORY PROTECTION

Respiratory protective devices are issued to make it possible to significantly reduce the internal exposure to radionuclides. Self-contained breathing apparatus (SCBA) or airline respirators shall be used in emergencies involving

oxygen deficient atmospheres, areas of suspected or known high airborne radioactivity, or unknown conditions. Implementing procedures detail criteria for respirator use based upon atmospheric content. Respiratory equipment is maintained at storage areas in the plant, as well as at the various emergency control centers. Self-contained breathing apparatus are available for Control Room personnel.

6.4.2.2 PROTECTIVE CLOTHING

Supplies of this apparel include coveralls, rubber gloves, shoe covers and boots, caps and hoods, and plastic suits. Inventories are maintained for normal plant use by the health physics and maintenance personnel. Emergency supplies shall be kept at the Control Room area and other emergency response facilities. This clothing shall be issued to emergency teams and other personnel required to enter known or suspect areas of radioactive contamination, and to personnel required to work in or occupy contaminated areas. For other than emergency workers, normal street clothing is considered to be adequate protective apparel for the process of departing the plant.

6.4.2.3 USE OF RADIOPROTECTIVE DRUGS

For virtually every significant postulated accident at a nuclear power station, the release of radioiodines with the associated risk of thyroid exposure would present the greatest demand for

protective action. The usefulness of certain compounds containing stable iodine as agents to block thyoridal uptake of radioiodines has been widely recognized for some time. It is also recognized that the benefits derived are also accompanied by a degree of risk due to side effects that may occur. The current advice presented by competent medical authorities is that 130 mg KI (to administer 100 mg Iodide) will produce the highest percent of blockage with the lowest risk probability. Since these compounds are considered to be pharmaceuticals, this protective action of using iodine compounds as blocking agents required approval of the U.S. Food and Drug Administration (USDHEW), who developed guidance for the use of radioprotective drugs (reference: 43FR58798 and NCRP Report 55).

A supply of this reagent is part of the Technical Support Center. A supply of KI tablets or solution may also be stored in the emergency kits. In the event that radioiodines in the plant environs pose a radiological problem, the Philadelphia Electric Company Medical Director has authorized the use of KI tablets. The Radiation Protection Team leader shall be responsible for distribution of the reagent per approved procedure. Such distribution shall be limited to specific emergency workers judged in need of treatment.

6.4.3 CONTAMINATION CONTROL MEASURES

6.4.3.1 PLANT SITE

In the event of radioactive contamination of ground surfaces within the Limerick Generating Station Exclusion Area Boundary, access to such areas shall be controlled. Incidents resulting in such contamination would likely be associated with serious Site or General Emergency conditions in which Site Evacuation would have occurred. Implementing procedures detail the survey and analysis techniques and the criteria, in terms of contamination levels, for quarantining the Exclusion Area, of portions thereof, and for returning to normal use. Procedures also cover the decontamination of vehicles and equipment and the collection of wastes for disposal.

Methods available to the Interim Emergency Director and the Emergency Director to implement a quarantine include the Exclusion Area Evacuation Alarm, River Warning System, and notification to Conrail-Harrisburg Division. Additional resources, such as the Pennsylvania Fish Commission or Department of Military Affairs may be requested through the PEMA.

For a radioactive liquid release, the emergency action level is an effluent monitor or sample indicating a release in excess of Technical Specification limits. Shift supervision utilizes implementing procedures to notify Montgomery and Chester Counties and to obtain river water samples. A list of downstream water users is maintained to ensure that they are notified. Should contamination of site drinking water sources be suspected, water samples shall be analyzed.

6.4.3.2 OFF-SITE AREAS

Criteria for controlling ingestion of or exposure to radioactive contamination are contained in the plans of the various State agencies. Included are:

a. Isolation or quarantine and area access control.

b. Control of the distribution of affected commercial agricultural crops.

c. Control of public water supplies.

d. Means for providing advisory information regarding the use of affected home food and water supplies.

e. Criteria for permitting return to normal use.

Action levels and responsibilities for execution of these measures are included. Contaminated areas will be posted to control access until time allows for decontamination methods. PEMA is the Ccommonwealth agency responsible for these actions and will be assisted by other State agencies and/or Philadelphia Electric Company upon request.

6.5 AID TO AFFECTED PERSONNEL

This section of the plan describes measures which will be used to provide necessary assistance if any persons are injured and/or radiologically exposed.

6.5.1 EMERGENCY PERSONNEL EXPOSURE CRITERIA

An emergency situation transcends the normal requirements for limiting exposure. There are suggested levels of exposure acceptable in emergencies. Even under these conditions, every reasonable effort to minimize exposure shall be made and personnel shall be provided with appropriate monitoring devices.

Three categories of risk versus benefit must be considered.

a. Saving the human life and reduction of injury.

b. Protection of health and safety of the public.

c. Protection of property.

In order to avoid restricting actions that may be necessary to save lives, it shall be left to the judgment of the individual to determine the amount of exposure that he will accept to perform an emergency action that will result in the saving of human life. Plant personnel are instructed in radiation effects and the risks involved for emergency doses.

Basic guidelines provided to emergency team members are contained in Table 6-1. These guidelines and knowledge of radiation effects allow on-site emergency response personnel to make informed decisions as to the amount of exposure they are willing to accept to accomplish the wide range of emergency actions (such as decontamination, assessment, and first aid) which may be needed. It is acknowledged that these guidelines exceed 10 CFR, Part 20 limits and that they apply to specific emergency activities. Although these exposures are on a voluntary basis, planned exposures shall be authorized by the Emergency Director (based on the recommendation of the Radiation Protection Team Leader, if time permits).

Once the emergency conditions have been mitigated, steps shall be taken to recover from the incident. All actions from this point shall be preplanned in order to limit exposures. Normal exposure limits shall be used and access to radiation areas shall be controlled. All reasonable measures shall be taken to maintain the radiation exposure of off-site emergency personnel who provide rescue, First Aid, decontamination, ambulance or medical treatment services to within applicable quarterly limits specified in 10 CFR, Part 20. To the extent permitted by the existing emergency conditions, this is accomplished by removal of patients to low radiation areas, preliminary decontamination, or use of shielding. Emergency access procedures provide for issuing self-reading and permanent-record (TLD-type) dosimetry to such personnel. Records of these doses shall be developed and maintained by PECo.

6.5.2 DECONTAMINATION AND FIRST AID

On-Site personnel decontamination facilities for emergency conditions include showers and sinks which drain to the liquid radioactive waste processing system, and cleaning agents at the primary health physics decontamination area in the plant. Special decontamination materials and personnel decontamination procedures are available in this area for use under the direction of health physics supervision.

The site emergency organization includes a Personnel Safety Team. Leaders and Interim Leaders of this team are trained in first aid procedures.

An on-site medical room has been outfitted with surgical equipment and medical supplies in sufficient quantities that when used by a physician, the treatment capability will exceed that of a typical first aid room. First aid kits are strategically located throughout the site for treatment of simple and minor injuries. First aid training is described in Section 9 of this Plan.

6.5.3 MEDICAL TRANSPORATION

Transporation of injured personnel, who may, or may not, be radioactively contaminated, to medical treatment facilities is provided by local ambulance service (see agreement letter in Appendix A). In addition, Canberra/Radiation Management Corporation has access to helicopters which can be converted for use as ambulance helicopters. Shielding for the pilot and attendant during transportation of contaminated patients would be supplied. The Interim Emergency Director or Emergency Director may authorize transport of injured personnel by company vehicles or privately owned vehicles when necessary.

Communications with the ambulance company will be by commercial telephone lines or by dispatching organization.

6.5.4 MEDICAL TREATMENT

Arrangements for medical treatment have been made withthe following:

a) Canberra/Radiation Management Corporation - The capabilities and facilities available through Canberra/RMC are discussed in Section 5 of this Plan.

b) Pottstown Memorial Medical Center - The services provided by Pottstown Memorial Medical Center are described in Section 5 of this Plan.

c) Local physicians - PECo has established agreements with two local physicians who will provide on-site medical treatment.

Training for personnel at Pottstown Memorial Medical Center, for personnel at facilities available through Canberra/PMC, and for the local physicians is addressed in Section 8 of this Plan. Written agreements are in Appendix A.

| Communications with these facilities and personnel will be
| by commercial telephone lines.

TABLE 6-1

EMERGENCY OCCUPATIONAL EXPOSURE CRITERIA (NOTE 1)

	FUNCTION	PROJECTED WHOLE BODY DOSE	THYROID DOSE
1.	Life saving and reduction of injury, including removal of injured persons	75 REM	Note 2
2.	Operation of equipment or undertaking corrective action to mitigate an emergency	25 REM	125 REM
3.	Other emergency activities such as performing assessment actions, personnel decontamination, routine first aid, ambulance service, and medical treatment	10CFR20 Limits	10CFR20 Limits
4.	Re-entry/recovery	Administrative Guidelines	Administrative Guidelines

Note 1 - Values based on EPA-520/1-75-001

Note 2 - No specific upper limit is given since in the extreme case complete thyroid loss might be an acceptable risk for saving a life.

TABLE 6-2

CRITERIA FOR LOCAL, PARTIAL PLANT, AND SITE EVACUATION

Local Evacuation

1. Area Radiation Monitor alarm.
2. Continuous Air Monitor (CAM) alarm.
3. Localized, uncontrolled or unexpected release, leakage, or spill of radioactive or toxic material.
4. Survey results which show that ARMs or CAMs should have alarmed or which show unexpectd conditions above specified limits for the area.

Partial Plant Evacuation

1. Area Radiation or Continuous Air Monitor alarms show that the affected area is not localized.
2. Airborne radioactivity exceeds 100 times maximum permissible concentration (MPC) or 3×10^{-7} microcuries/cc (unidentified).
3. Radiation levels greater than 100 mrem/hr in normally accessible portions of the affected building.

Site Evacuation

1. Actual or potential radioactive release exceeding emergency action levels for Alert or Site Emergency.
2. Any General Emergency declared.
3. Toxic or hazard gas release.

7.0 EMERGENCY FACILITIES AND EQUIPMENT

Emergency facilities and equipment are provided to ensure the capabilities for the prompt, efficient assessment and control of situations over the entire spectrum of possible emergency conditions. The facilities and associated equipment are described in this section. Table 7-2 lists State and local emergency operations centers.

7.1 EMERGENCY FACILITIES

This section describes the various Philadelphia Electric Company facilities used during an emergency.

7.1.1 Station Control Room

The station Control Room is the location for immediate assessment and coordination of corrective actions for essentially all emergency conditions. The Control Room is equipped with the readout and controls for all critical plant systems, the readout and assessment aids related to radiological and meteorological monitoring systems, and access to all station communications systems.

The station Control Room is likely to remain an important emergency response center throughout most emergency situations in view of the probable need to operate and monitor plant systems to ameliorate, contain, or correct the cause of the condition. The ventilation, shielding, and structural integrity are designed and built to permit continuous occupancy during the postulated design basis accident.

7.1.2 Emergency Operations Facility

The Emergency Operations Facility (EOF) is located at Philadelphia Electric Company's Plymouth Service Building (Ridge Pike and Chemical Road, Plymouth Meeting, Pa.) which is approximately 17 miles from the plant. The EOF serves as the central location for coordinating response activities between site and off-site groups and for coordination of radiological and environmental assessment. Space and facilities are provided for PECo, NPC, Commonwealth, and other appropriate emergency personnel. The EOF is activated at a Site or General Emergency.

The Emergency Operations Facility equipment includes:

a) Communications equipment for contact with various emergency centers and organizations (see Figure 7-2).

b) Maps, overlays/nomographs, and calculational aids used in projecting and evaluating off-site doses and in tracking effluents.

c) Supplies and equipment for off-site monitoring teams and other emergency personnel.

d) Sanitary and food preparation facilities.

e) Emergency Response Facility Data System.

f) Radiation and Meteorological Monitoring System.

7.3.3 Technical Support Center

The Technical Support Center (TSC) is located in a building on the plant site, east of the water treatment facility. The TSC has the space and facilities for plant management and designated technical staff to analyze plant conditions and to make operational recommendations to Control Room personnel. The TSC also becomes a primary communications center to relieve Control Room personnel of this responsibility. The TSC is activated under Alert, Site Emergency, and General Emergency. The TSC provides the same radiological habitability as the Control Room.

The TSC equipment includes:

a) Emergency Response Facility Data System.

b) Radiation and Meteorological Monitoring System.

c) Maps, overlays/nomographs, and calculational aids used in projecting and evaluating off-site doses and in tracking effluents.

d) Supplies and equipment for monitoring teams and other emergency personnel.

e) Sanitary and food preparation facilities.

f) Communications equipment for contact with various emergency centers and organizations.

A copy of the following documents shall be stored in, or be accessible to, the Technical Support Center:

1) General Arrangement Drawings

2) Piping and Instrumentation Diagrams (P&IDs)

3) Electrical schematics

4) Selected piping system isometrics

5) FSAR and Technical Specifications

6) Emergency Plan and Emergency Plan Procedures

7) Plant Procedures.

7.1.4 Operations Support Center

The Operations Support Center (OSC) is a designated area in the Turbine Building at elevation 269 near the control room. Under emergency conditions, the shift Plant Operator, Assistant Plant Operator, Health Physics Technician, and Auxiliary Operator report to this area when not performing emergency duties. Other personnel, such as plant staff members, health physics technicians, and other non-Control Room operators, may also be directed to report to this area in anticipation of assignments relating to the emergency. Communications permit assignment of duties to operational support personnel without the necessity for entrance into the Control Room. Depending upon existing plant conditions, the Interim Emergency Director or Emergency Director may elect to have the onshift operators and a limited number of others report to one of the offices in the Control Structure adjacent to the Control Room and relocate the Operational Support Center to the Administration Building or to the Technical Support Center, as appropriate. The OSC shall contain respiratory protection equipment, protective clothing, flashlights, and portable survey instruments. The OSC is activated during an Alert, Site Emergency, or General Emergency.

7.1.5 Emergency Support Center

Emergency conditions may require long-term and/or extensive support from organizations such as contractors, other utilities, Radiation Management Corporation, or Federal and State agencies. The Emergency Support Center provides the physical facilities, including the capability for expanded telephone service, for these organizations as well as for the Recovery Manager's organization during the recovery response phase (see Section 5). Space is available along the main plant entrance road for trailers and other temporary facilities. The scope of functions which may be accomplished in this Emergency Support Center and the physical layout will depend upon the conditions prevailing at the time. However, advance planning anticipates the outline shown in Figure 7-1 and the following functions.

a) Access Control. The main access gate would be closed and guard(s) posted. Authorized support personnel would be issued passes or other identification which would allow them to proceed to a receiving facility. The receiving facility may be

in the Technical Support Center or in a temporary facility such as a trailer.

b) Training. In-coming support personnel would be given indoctrination in topics such as plant layout, security, access limitations, dosimetry requirements, and other areas related to their support functions.

c) Dosimetry. Dosimetry appropriate for the individual's support function would be issued and applicable records initiated to control exposures. Statements of exposure history would be requested.

d) Security. Authorized support personnel would be issued passes or other identification to identify escort requirements or access limitations, such as access only to the Technical Support Center or to the plant.

e) Facilities for medical aid, sample preparation and analysis, instrumentation calibration and repair, food preparation, and sanitary facilities are designated as shown in Figure 7-1.

7.1.6 PECo Headquarters Emergency Support Center

The PECo Headquarters Emergency Support Center (HESC) located at the Philadelphia Electric Company offices at 2301 Market Street in Philadelphia. Corporate support personnel (see Section 5.0) report here when activated. The main support activities are controlled from a single floor in the building with additional personnel reporting to locations throughout the building. This center has a map of the Limerick area to enable tracking and evaluation of off-site radiological consequences. Communications with Limerick and the EOF, and access to as-built drawings, P&ID's, and plant procedures enable technical evaluation of problems by engineering personnel. The HESC is under the direction of the Emergency Support Officer and is activated at a Site or General Emergency.

7.1.7 Emergency News Center

The Emergency News Center (ENC) is located in the Philadelphia Electric Company offices in Philadelphia. The Emergency News Center will have the equipment, facilities, and documents to accommodate the media and for conducting press conferences. The Emergency News Center has communications links with the EOF and HESC. The ENC is activated at a Site or General Emergency.

7.2 COMMUNICATIONS SYSTEMS

The Limerick Generating Station communication capabilities ensure the performance of vital functions in transmitting and receiving information throughout the course of an emergency. The systems available at the various emergency facilities are described below. The use of a dedicated phone switch, backup radio links, microwave transmission and commercial phones results in flexible communications plans capable of responding to local and wide-area service outages. Communications are also discussed in the FSAR, Section 9.5.2.

7.2.1 Intra-Plant Public Address (PA) System

The PA system is a 6-channel system permitting simultaneous use of one page line and five party lines. Loudspeakers powered by individual amplifiers are located throughout the plant and in remote structures. The PA system is powered from a Class IE bus to provide continuous operation under all plant operating conditions. A PA station is located in the Control Room, the Operational Support Center, and in the Technical Support Center.

7.2.2 Private Automatic Branch Exchange Telephone System (PABX)

The PABX is a commercial telephone system on-site, installed by Bell of Pennsylvania and providing communication throughout the plant and remote structures and with off-site parties. PABX extensions are located in the Control Room, the Technical Support Center, and the Operational Support Center. The power supply for this system is supplied from normal plant AC power with a backup supply from an independent battery and inverter system. Separate PABX systems are located at the EOF, HESC, and ENC. These systems allow outside communications.

7.2.3 Intra-Plant Maintenance Telephone System

The intra-plant maintenance telephone system is a part of the PABX system and consists of telephone jacks into which portable dial-type telephone sets may be plugged. The telephone jacks are in various plant locations (predominantly in areas of high maintenance activity) and have the effect of expanding the PABX capability.

7.2.4 Radio Communication

A fixed base FM radio provides backup communication capability between the Station Control Room and PECo Philadelphia Headquarters, as well as other generating stations. Radio capability is also provided between the

Control Room and the Montgomery County Office of Emergency Preparedness and Medical Services.

7.2.5 Evacuation Alarm and River Warning System

The Evacuation Alarm System consists of a siren tone generator, PA system speakers, and a roof siren. The evacuation alarm is manually initiated by a selector switch in the Control Room. The selector switch also selects the evacuation alarm coverage in the following areas:

a) Unit 1 drywell

b) Unit 2 drywell

c) Whole plant, including initiation of the roof siren and the river broadcast speakers.

The River Warning System consists of a tape recorder, a microphone, river broadcast speakers, and an output feedback monitoring system. The tape recorder can transmit recorded messages and the microphone can transmit warning instructions through the river broadcast speakers.

The power supply for this system is fed from a Class IE bus.

| 7.2.6 Dedicated Telephone Switch

| A dedicated telephone switch provides rapid and reliable communications in the event of an emergency. This switch is independent of the PABX lines used for normal or backup communications. This switch allows rapid dialing and conferencing of emergency response personnel. The switch will be powered from an emergency diesel feed. Ties will be provided between the switch and the PABX as backup. Figure 7-2 provides a simplified schematic of those facilities that are linked by this switch individually or in a conference mode.

7.2.7 Portable Radios

A supply of walkie-talkie radios are maintained on-site. Such radios are used in a variety of operations such as off-site and remote on-site radiological surveys, security, and search and rescue. The radios link the Field Survey Groups with the TSC, their initial assembly area, and the EOF.

| 7.2.8 Trunk Lines

| Incoming and outgoing trunk lines are provided from the local telephone company to the various PECO facilities. These lines are used to conduct normal communications.

| 7.2.9 Tie Lines

| Leased tie lines link various locations. One-way tie lines | are provided between LGS, the EOF, the HESC and the ENC. | These lines provided rapid direct dialing between | facilities.

| 7.2.10 Microwave Transmission

| Private microwave lines consisting of two-way lines | supplement the one-way tie lines. These tie lines link LGS, | the EOF, the HESC, and the ENC.

| 7.2.11 Fascimile Transmission

| High speed and quality fascimile equipment is located at the | TSC, EOF, HESC, and ENC.

| 7.2.12 Data Transmission

| Data transmission lines will be provided between the TSC, | EOF, and Control Room. These will be used by the PMMS and | EPFDS.

7.3 ASSESSMENT FACILITIES

7.3.1 On-site Systems and Equipment

Facilities and equipment are provided to determine and assess conditions associated with various emergencies and to provide input for decision-making. Section 6.2 also discusses assessment equipment and actions.

Post-accident monitoring equipment includes noble gas effluent monitors and iodine and particulate filters on the north vent stack. The equipment is located to permit access for retrieval of samples under accident conditions. High range radiation monitors are provided in the primary containment. This equipment is more fully described in FSAR Section 1.13 (items II.B.3 and II.F.1) and FSAR Sections 7.5.1, 7.6, and 11.5.

Seismic instrumentation includes time-history accelerographs, peak recording accelerographs, and seismic switches as discussed in the FSAR, Section 3.7.4.

Meteorological data is provided to the Station Control Room from Meteorological Tower #1 and from the Satellite Tower. Data includes wind speed, wind direction, and temperature. Meteorological monitoring is described in the FSAR, Section 2.3.3. Indication of Schuylkill River flow at Pottstown is available in the Station Control Room.

Fire protection systems are described in the FSAR, Section 9.5.1.

Table 7-5 lists the environmental radiological monitoring stations.

Off-site environmental radiological monitoring is described in the Environmental Report. Installed radiological monitoring equipment and facilities, including process, area, and effluent, are listed in Tables 7-3 and 7-4 and are described in the FSAR, Chapters 11 and 12. Typical portable monitors and sampling equipment which are available for both on-site and off-site environmental radiological monitoring are listed in Appendix E.

Chemical laboratories are located in the radwaste enclosure. A radiochemistry section is provided. The laboratories are adjacent to the counting room for convenience in transporting prepared samples for counting.

7.3.2 Off-Site Monitoring

The following off-site monitoring capabilities include both special emergency facilities and regular capabilities which may be used in times of emergency.

a) The PECo Environmental Monitoring Program provides several dosimeter and airborne particulate sampling stations which are available for long-term analysis of an emergency. Table 7-5 lists the environmental radiological monitoring stations.

b) The Canberra/Radiation Management Corporation health physics capabilities, utilizing their Environmental Monitor Van and Whole Body Counter Van, using battery operated equipment or the generators in the vans, include the following:

1) Evaluation of beta, gamma, or neutron levels.

2) Evaluation of alpha, beta, or gamma surface or skin contamination.

3) Collection and evaluation of air particulate samples.

4) High level radiation measurements (up to 15 KR/hr)

5) Environmental sample analysis - preliminary sample preparation and gross analysis of samples.

6) Single channel analysis of gamma emitters.

7) Urine bioassay for most beta or gamma emitters.

8) Whole body counting utilizing the PMC Mobile Whole Body Counting Van(s)

9) Low level quantitative and qualitative gamma analysis of samples.

c) The Bureau of Radiation Protection, Department of Environmental Resources, Commonwealth of Pennsylvania, is capable of providing off-site field monitoring capability within approximately two hours after mobilization.

d) The US DOE Brookhaven Area Office provides additional field monitoring resources.

7.4 ASSEMBLY AREAS

The primary function of an assembly area is to provide a specific location to assemble, account, monitor, decontaminate, and administer first aid for evacuees. Use of assembly areas facilitates further evacuation steps should such action become necessary. Personnel assigned emergency operational responsbilities can recruit support personnel to augment emergency teams if the need develops (i.e., search and rescue operations might be initiated from an assembly area).

The designation of an assembly area does not imply the provision of special facilities or equipment. The normal inventory of routinely available protective clothing, respirators, portable radiation survey instruments, first aid boxes, and counting equipment are available in the plant and similar equipment designated for emergency use is located at the Technical Support Center and Emergency Operations Facility.

Assembly areas for the various levels of evacuation are listed in Table 7-1. Under emergency circumstances, in the selection of assembly areas, consideration should be given to areas and personnel which may be affected should existing conditions spread or become more severe. The assembly areas were selected upon the basis of ease of access, adequate space to accommodate the expected number of persons, and compatibility with plans for subsequent evacuation levels.

7.5 ON-SITE FIRST AID AND MEDICAL FACILITIES

First-aid kits are located in designated areas throughout the station and are checked and replenished as necessary. Stretchers are also provided at designated locations. This equipment is adequate for normal industrial first-aid use. At least one person (a member of the Interim Personnel

Safety Team) is trained in first-aid as described in Table 8-1 and is on-site at all times.

7.6 DAMAGE CONTROL EQUIPMENT

Damage control equipment consists of normal and special purpose tools and devices utilized in the course of maintenance functions throughout the station. Personnel assigned to the Fire and Damage Team and the Personnel Safety Team are cognizant of the locations of equipment which may normally be required in an emergency condition. The Interim Emergency Director has access to keys for tool storage, shops, and other locations where appropriate damage control equipment may be stored. In addition, emergency kits containing radiation survey equipment, respiratory equipment, and anti-contamination clothing are maintained. Appendix E lists the locations and types of equipment designated for emergency use.

TABLE 7-1

EVACUATION ASSEMBLY AREAS

TYPE OF EVACUATION	ASSEMBLY AREAS
Local Evacuation	Local Unaffected Area within plant
Partial Plant Evacuation	
Technical Support Center Staff	Technical Support Center Display Area
Health Physics Technicians Operators (except Control Room Operators)	Operations Support Center
Chemistry Technicians	Chemistry Laboratory
Other Unit 1 Personnel	Normal Working Areas
Site Evacuation	
Non-essential personnel	Upper Parking Lot,
Emergency Teams	TSC, OSC, Control Room Chemistry Laboratory

Note 1 - During Unit 1 operation with Unit 2 under construction, if the hazard has the potential to spread to Unit 2, construction related workers shall assemble between the Main Construction Office and the Change House or the Upper Parking Lot and Post 3.

TABLE 7-2

DESIGNATION OF FEDERAL, STATE, AND LOCAL
EMERGENCY OPERATIONS CENTERS

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1. Pennsylvania Emergency Management Agency
   Emergency Operations Center - Harrisburg, Pa.
   Notification Recipient: Day Shift - Operations Section
   Back Shifts - PEMA Duty Officer

2. Montgomery County Office of Emergency Preparedness
   and Medical Services
   Emergency Operations Center - Eagleville, Pa.
   Notification Recipient: All Shifts - Shift Supervisor

| 3. Chester County Department of Emergency Services (1)
   Emergency Operations Center - West Chester, Pa.
   Notification Recipient: All Shifts - Shift Supervisor

| 4. Berks County Emergency Management Agency(1)
   Emergency Operations Center - Leesport, Pa.
   Notification Recipient: All Shifts - Shift Supervisor

5. US DOE, Brookhaven Area Office
   Emergency Operations Center - Brookhaven National Laboratory
   Notification Recipient: Day Shift - Safety and Environmental
   Protection Officer
   Back Shifts - Security Office

6. US NRC
   Emergency Operations Center - Bethesda, Maryland
   Notification Recipient: All Shifts - Duty Officer

7. US NRC - Region I
   King of Prussia, Pa.
   Call is relayed by EOC in Bethesda to Region I

| 8. Maryland Civil Defense and Disaster Preparedness Agency(1)
| Emergency Operation Center - Pikesville, Maryland
   Notification Recipient: Day Shift -
   Back Shifts -

| 9. New Jersey State Police(1)
   Emergency Operation Center -
   Notification Recipient: Day Shift -
   Back Shifts -

TABLE 7-2 (Cont.)

10. Delaware(1)
    Emergency Operation Center -
    Notification Recipient: Day Shift -
    Back Shifts -

11. Conrail - Harrisburg Division
    Location - Harrisburg, Pa.
    Notification Recipient: Day Shift - Office of the Division Superintendent
    Back Shifts - Movement Director or Dispatcher

12. Pennsylvania Department of Environmental Resources, Bureau of Radiation Protection
    Emergency Operations Center- Harrisburg, Pa.
    Notification Recipient: Day Shift-Office
    Back Shift-PEMA Duty Officer

(1) Receive notification from PEMA rather than directly from plant.

TABLE 7-3 (Page 1 of 2)

PROCESS AND EFFLUENT RADIATION MONITORING SYSTEMS(1)

MONITORED PROCESS	DETECTOR LOCATION	CHANNEL RANGE
Main Steam Line	Immediately Downstream of Main Steam Isolation Valve	1 to 10^6 mr/hr
Reactor Enclosure Exhaust	Reactor Enclosure Exhaust Duct	0.01 to 10^2 mr/hr
Refueling Area Exhaust	Refueling Area Exhaust Duct	.01 to 10^2 mr/hr
Control Room (CR) Supply	Main Intake Ventilation Duct	10 to 10^3 micro Ci/cc
CR Emergency Fresh Air	Emergency Fresh Air Supply Duct	10 to 10^7 counts/min
Standby Gas Treatment	Downstream of High Efficiency Particulates Air (HEPA) Filters in SGTS	10 to 10^7 counts/min
Residual Heat Removal (RHR) Service Water	Discharge Lines From RHR Heat Exchangers Exchangers	10 to 10^6 counts/min
North Stack	Cross Section of North stack at El. 402 ft.	10 to 10^6 counts/sec
	Normal Range	10^{12} to 10^1 micro Ci/cc
	Wide Range	10^7 to 10^5 micro Ci/cc
South Stack	Cross Section of South Stack at El. 402 Ft.	10 to 10^6 counts/sec
	Noble Gas	10^7 to 10^1 micro Ci/cc
	Particulate	10^{12} to 10^6 micro Ci/cc
	Iodine	10^{11} to 10^8 micro Ci/cc

TABLE 7-3 (Cont'd) (Page 2 of 2)

MONITORED PROCESS	DETECTOR LOCATION	CHANNEL RANGE
Recombiner Compartment Exhaust	Recombiner Compt. H_2/O_2 Units Exhaust Ducts	10 to 10^6 counts/min
Mech Vacuum Pump & Steam Seal Exhaust	Downstream of Junction of Mechanical Vacuum Pump Exhaust and Steam Seal Exhaust	10 to 10^6 counts/min
Radwaste Enclosure Exhaust	Main Exhaust Duct of Radwaste Enclosure	10 to 10^6 counts/min
Air Ejector Effluent	Steam Jet Air Ejector (SJAE) Discharge Pipes to Recombiner	10 to 10^6 mR/hr
Primary Containment Leak Detection	Primary Containment at El. 292 Ft.	10 to 10^7 counts/min
Hot Shop Exhaust	Ventilation Exhaust Duct from Maintenance Hot Shop	10 to 10^7 counts/min
Radwaste Discharge	Radwaste Drain Line to Cooling Tower Blowdown Line	10^{-8} to 10^{-3} micro Ci/cc
Service Water	Main Pipe to Cooling Tower	10^{-8} to 10^{-3} micro Ci/cc
Reactor Enclosure Cooling Water	Reactor Enclosure Cooling Water Upstream of Pumps	10^{-8} to 10^{-3} micro Ci/cc

(1) Data obtained from FSAR Table 11.5-1.

TABLE 7-4 (Sheet 1 of 4)

AREA RADIATION MONITORING SYSTEM EQUIPMENT(1)

SENSOR NUMBER	DESCRIPTION	RANGE (mrem/hr)
RE01-M1-1N001	Reactor core isolation cooling (RCIC) pump compartment	.01-10^4
RE01-M1-2N001	RCIC pump compartment	.01-10^4
RE02-M1-1N001	High pressure coolant injection (HPCI) pump compartment	.01-10^4
RE02-M1-2N001	HPCI pump compartment	.01-10^4
RE03-M1-1N001	Sump compartment	.01-10^4
RE03-M1-2N001	Sump compartment	.01-10^4
RE04-M1-1N001	Control rod drive (CRD) pumps area	.01-10^4
RE04-M1-2N001	CRD pumps area	.01-10^4
RE05-M1-1N001	Turbine auxiliary bay hallway	.01-10^4
RE05-M1-2N001	Turbine auxiliary bay hallway	.01-10^4
RE06-M1-1N001	Isolation valve compartment	.01-10^4
RE06-M1-2N001	Isolation valve compartment	.01-10^4
RE07-M1-1N001	Condensate pump compartment	.01-10^4
RE07-M1-2N001	Condensate pump compartment	.01-10^4
RE08-M1-1N001	RHR division I compartment	.01-10^4
RE08-M1-2N001	RHR division I compartment	.01-10^4
RE09-M1-1N001	RHR division II compartment	.01-10^4
RE09-M1-2N001	RHR division II compartment	.01-10^4
RE10-M1-1N001	Steam vent area stairwell	.01-10^4
RE10-M1-2N001	Steam vent area stairwell	.01-10^4
RE11-M1-1N001	Railroad access airlock	.01-10^4
RE11-M1-2N001	Railroad access airlock	.01-10^4
RE12-M1-1N001	Hallway, condensate filter demineralizers	.01-10^4
RE12-M1-2N001	Hallway, condensate filter demineralizers	.01-10^4
RE13-M1-1N002	Condenser area	1.0-10^6
RE13-M1-2N002	Condenser area	1.0-10^6
RE14-M1-1N002	Reactor drywell	1.0-10^6
RE14-M1-2N002	Reactor drywell	1.0-10^6
RE15-M1-1N001	CRD hydraulic control unit (HCU) area east	.01-10^4
RE15-M1-2N001	CRD HCU area east	.01-10^4
RE16-M1-1N001	CRD HCU area west	.01-10^4
RE16-M1-2N001	CRD HCU area west	.01-10^4
RE17-M1-1N001	Neutron monitoring	.01-10^4

TABLE 7-4 (Cont'd) (Sheet 2 of 4)

SENSOR NUMBER	DESCRIPTION	RANGE (mrem/hr)
	system area	
RE17-M1-2N001	Neutron monitoring system area	.01-10^4
RE18-M1-1N001	Neutron monitoring drive mechanism	.01-10^4
RE18-M1-2N001	Neutron monitoring drive mechanism	.01-10^4
RE19-M1-1N002	Turbine auxiliary bay hallway east	1.0-10^6
RE19-M1-2N002	Turbine auxiliary bay hallway east	1.0-10^6
RE20-M1-1N002	Turbine auxiliary bay hallway west	1.0-10^6
RE20-M1-2N002	Turbine auxiliary bay hallway west	1.0-10^6
RE21-M1-1N001	Reactor water cleanup heat exchanger area	.01-10^4
RE21-M1-2N001	Reactor water cleanup heat exchanger area	.01-10^4
RE22-M1-1N001	Reactor water cleanup pump area	.01-10^4
RE22-M1-2N001	Reactor water cleanup pump area	.01-10^4
RE23-M1-1N001	Standby liquid control system area	.01-10^4
RE23-M1-2N001	Standby liquid control system area	.01-10^4
RE24-M1-1N001	Reactor water cleanup inst rack area	.01-10^4
RE24-M1-2N001	Reactor water cleanup inst rack area	.01-10^4
RE25-M1-1N001	Turbine auxiliary bay	.01-10^4
RE25-M1-2N001	Turbine auxiliary bay	.01-10^4
RE26-M1-1N001	Washdown area	.01-10^4
RE26-M1-2N001	Washdown area	.01-10^4
RE27-M1-1N001	Reactor water cleanup filter area	.01-10^4
RE27-M1-2N001	Reactor water cleanup filter area	.01-10^4
RE28-M1-1N001	Equipment compartment exhaust filters area	.01-10^4
RE28-M1-2N001	Equipment compartment exhaust filters area	.01-10^4
RE29-M1-1N001	Drywell head laydown area	.01-10^4
RE29-M1-2N001	Drywell head laydown area	.01-10^4
RE30-M1-1N001	Dryer/separator area	.01-10^4
RE30-M1-2N001	Dryer/separator area	.01-10^4
RE31-M1-1N001	Spent fuel pool	.01-10^4
RE31-M1-2N001	Spent fuel pool	.01-10^4

TABLE 7-4 (Cont'd) (Sheet 3 of 4)

SENSOR NUMBER	DESCRIPTION	RANGE (mrem/hr)
RE32-M1-1N001	New fuel storage vault	.01-10⁴
RE32-M1-2N001	New fuel storage vault	.01-10⁴
RE33-M1-1N001	Pool plug laydown area	.01-10⁴
RE33-M1-2N001	Pool plug laydown area	.01-10⁴
RE34-M1-1N001	Hydrogen/oxygen analyzers area	.01-10⁴
RE34-M1-2N001	Hydrogen/oxygen analyzers area	.01-10⁴
RE35-M1-1N001	Gaseous radwaste recombiner hallway	.01-10⁴
RE35-M1-2N001	Gaseous radwaste recombiner hallway	.01-10⁴
RE41-M1-0N001	Sludge discharge mixing pump room	.01-10⁴
RE42-M1-0N001	Radwaste enclosure hallway	.01-10⁴
RE43-M1-0N001	Concentrate storage discharge pump room	.01-10⁴
RE44-M1-0N001	Laundry drain processing room	.01-10⁴
RE45-M1-0N001	Floor drain filter holding pump room	.01-10⁴
RE46-M1-0N001	Fuel pool holding pump room	.01-10⁴
RE47-M1-0N001	Precoat tank & pump room	.01-10⁴
RE48-M1-0N001	Remote shutdown control area	.01-10⁴
RE49-M1-0N001	Radwaste cask loading area area	.01-10⁴
RE50-M1-0N001	Railroad car airlock	.01-10⁴
RE51-M1-0N001	Radwaste enclosure hallway	.01-10⁴
RE52-M1-0N001	Hot maintenance shop	.01-10⁴
RE53-M1-0N001	Entrance, turbine enclosure railroad	.01-10⁴
RE54-M1-0N001	Hopper compartment	.01-10⁴
RE55-M1-0N001	Radwaste exhaust fan area	.01-10⁴
RE56-M1-0N001	Control room	.01-10⁴
RE57-M1-0N001	Turbine area operating floor	.01-10⁴
RE58-M1-0N001	Standby gas treatment filter room	.01-10⁴
RE59-M1-0N001	Source storage & calibration room	.01-10⁴
	(local) A turbine enclosure crane	.01-10⁴
	(Local) B turbine enclosure crane	.01-10⁴
R1AH-TA-101	(Local) refueling platform	.01-10⁴

TABLE 7-4 (Cont'd) (Sheet 4 of 4)

SENSOR NUMBER	DESCRIPTION	RANGE (mrem/hr)
RIAH-TA-201	(Local) refueling platform	.01-10^4

(1) Data obtained from FSAR Table 12.3-8.

TABLE 7-5 (Page 1 of 2)

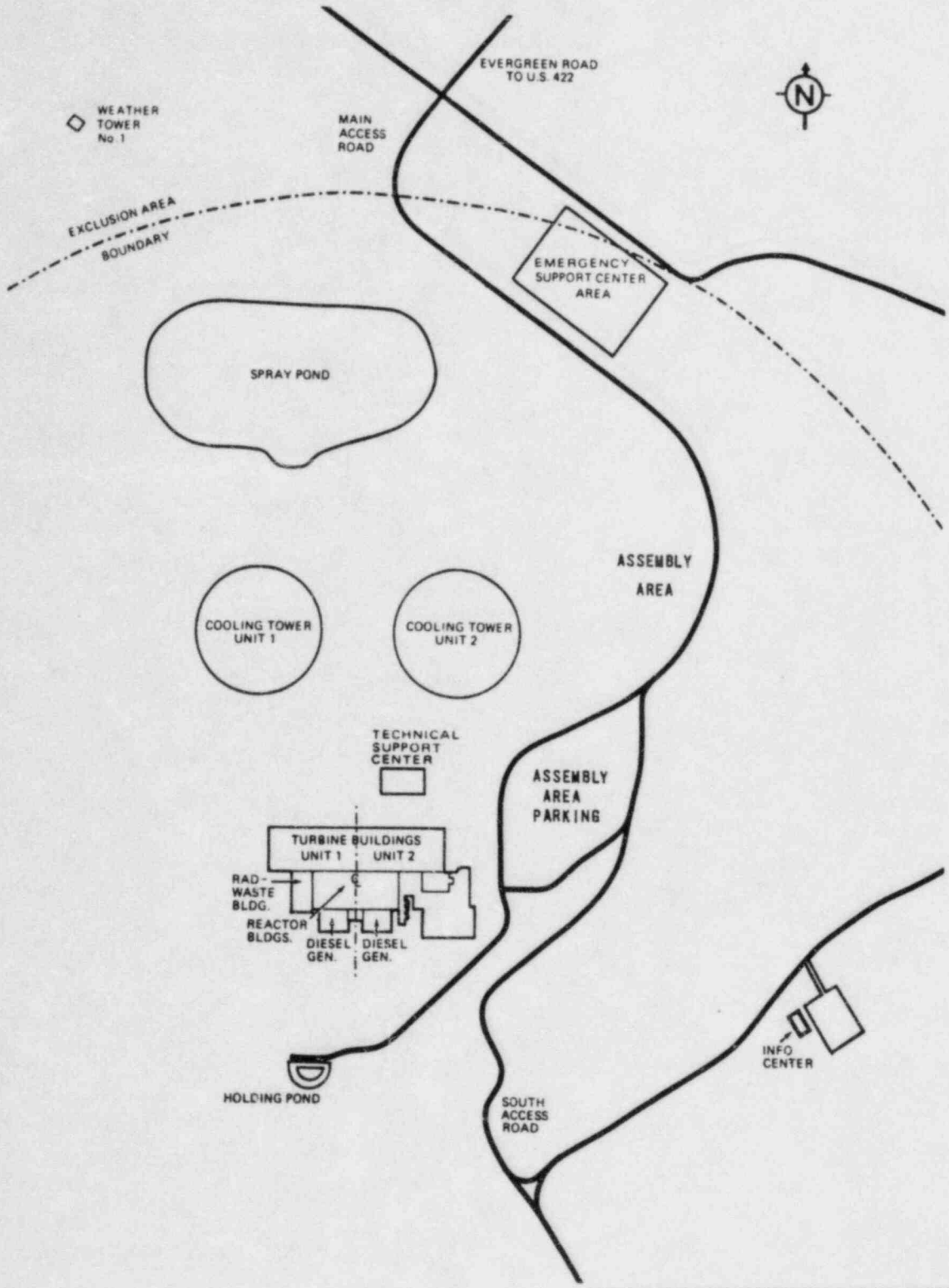
EMERGENCY ENVIRONMENTAL RADIOLOGICAL MONITORING STATIONS

MEDIA	STATION GROUP	STATION NUMBER	DIRECTION	DISTANCE (MILES)
Air Particulates and Radioiodine	Site	10S3	E	0.5
		11S1	ESE	0.5
		14S1	SE	0.6
		34S1	NNW	0.6
	Intermediate Distance	2B1	NNE	1.5
		17B1	S	1.6
		26B1	W	1.7
		29B1	WNW	1.8
		35B1	NNW	1.9
		6C1	NE	2.1
		9C1	E	2.2
		13C1	SE	2.9
		15D1	SE	3.2
		20D1	SSW	3.1
		31D1	NW	3.0
	Distant	22G1	SW	17.6
		13H4	SE	28.8
TLD(1)	Site	36S1	N	0.6
		3S1	NNE	0.6
		5S1	NE	0.4
		7S1	ENE	0.5
		10S3	E	0.5
		11S1	ESE	0.5
		14S1	SE	0.6
		16S2	SSE	0.6
		18S1	S	0.3
		23S2	SW	0.6
		26S3	WSW	0.4
		27S1	W	0.5
		29S1	WNW	0.5
		34S2	NNW	0.6
	Intermediate Distance	2B1	NNE	1.5
		6C1	NE	2.1
		9C1	E	2.2
		10F3	E	5.3
		13C1	SE	2.9
		15D1	SE	3.2
		13E1	SE	4.4
		16F1	SSE	5.1
		17B1	S	1.6
		19D1	S	3.6
		20D1	SSW	3.1
		20F1	SSW	5.2

TABLE 7-5 (Cont'd)

MEDIA	STATION GROUP	STATION NUMBER	DIRECTION	DISTANCE (MILES)
		24D1	SW	3.9
		26B1	W	1.7
		29B1	WNW	1.8
		29E1	WNW	4.9
		31D1	NW	3.0
		31D2	NW	3.8
		35B1	NNW	1.9
	Distant	5H1	NE	25.8
		13H3	SE	28.2
		18G1	S	12.9
		22G1	SW	17.6
Surface Water		10F2	Graterford Intake Pumping Station	
		16B2	Linfield Bridge	
		15F4	Phila. Suburban Water Co.	
		24S1	Limerick Generating Station Intak	
		24S2	Fricks Lock Boat House	
Drinking Water		15F5	Phila. Suburban Water Co.	
		15F6	Phoenixville Water Co.	
		13H2	Belmont-Phila. Water Co.	
		28F3	Pottstown Water Authority	
Milk(2)		36E1	N	
		36G1	N	
		5C1	NE	
		9G1	E	
		9E1	E	
		10C1	ESE	
		11E1	ESE	
		17E1	SSE	
		17C1	S	
		17D1	S	
		18C1	S	
		21B1	SW	
		22F1	SW	
		25B1	WSW	

(1) Ten additional stations are planned for installation.
(2) Dairy farm selection is subject to change.

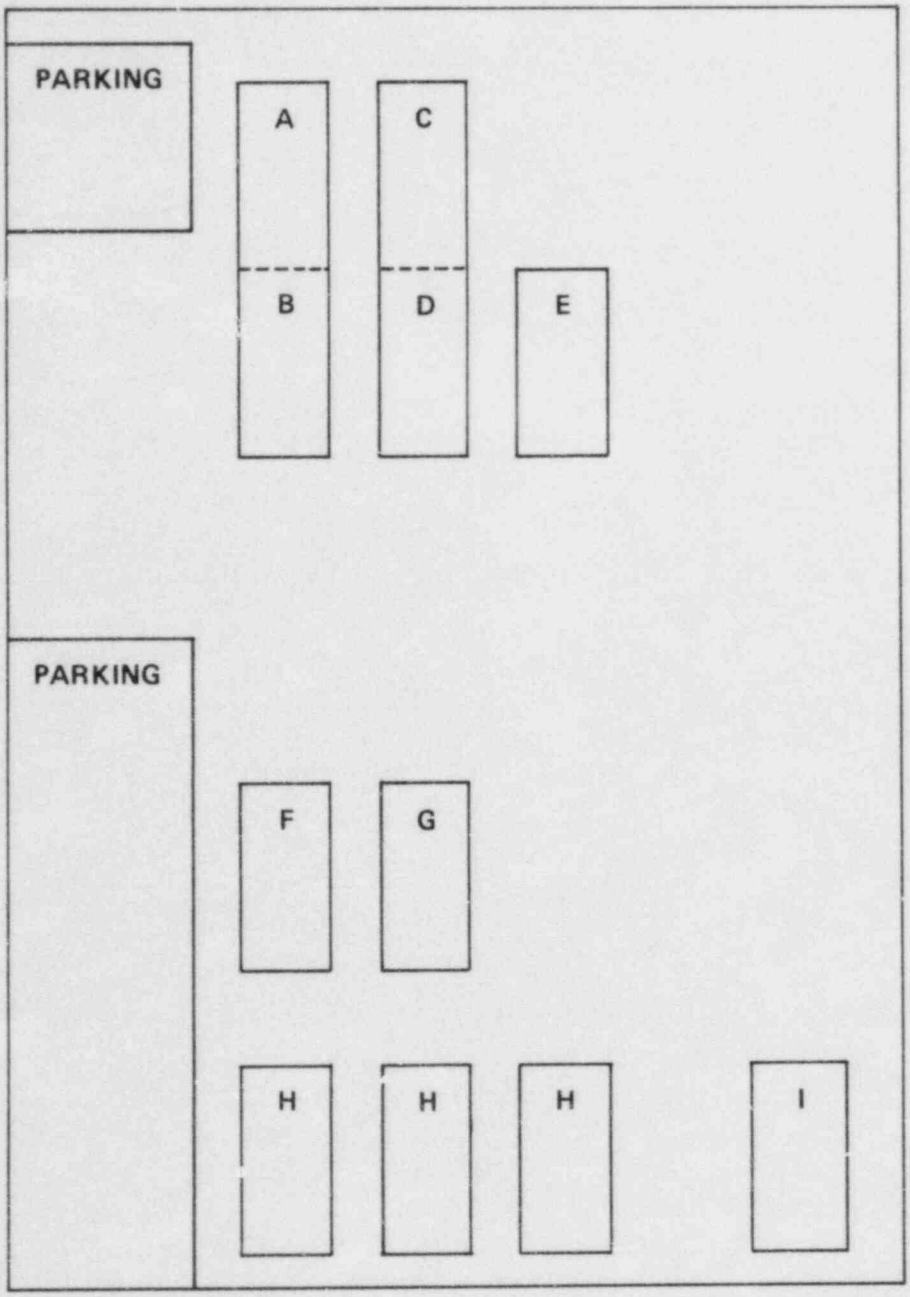


LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

EMERGENCY SUPPORT
CENTER CONCEPTUAL PLAN
SHEET 1 OF 2

FIGURE 7-1 REV.7, 12/83

A - PERSONNEL RECEIVING
B - DAILY DOSIMETRY
C - INITIAL TRAINING
D - DOSIMETRY ISSUE AND SECURITY
E - FOOD PREPARATION
F - MEDICAL
G - TELEPHONE CENTER
H - RMC/ENVIRONMENTAL MONITOR CONTRACTOR, INSTRUMENTATION, AND ANALYSIS
I - SANITARY FACILITY

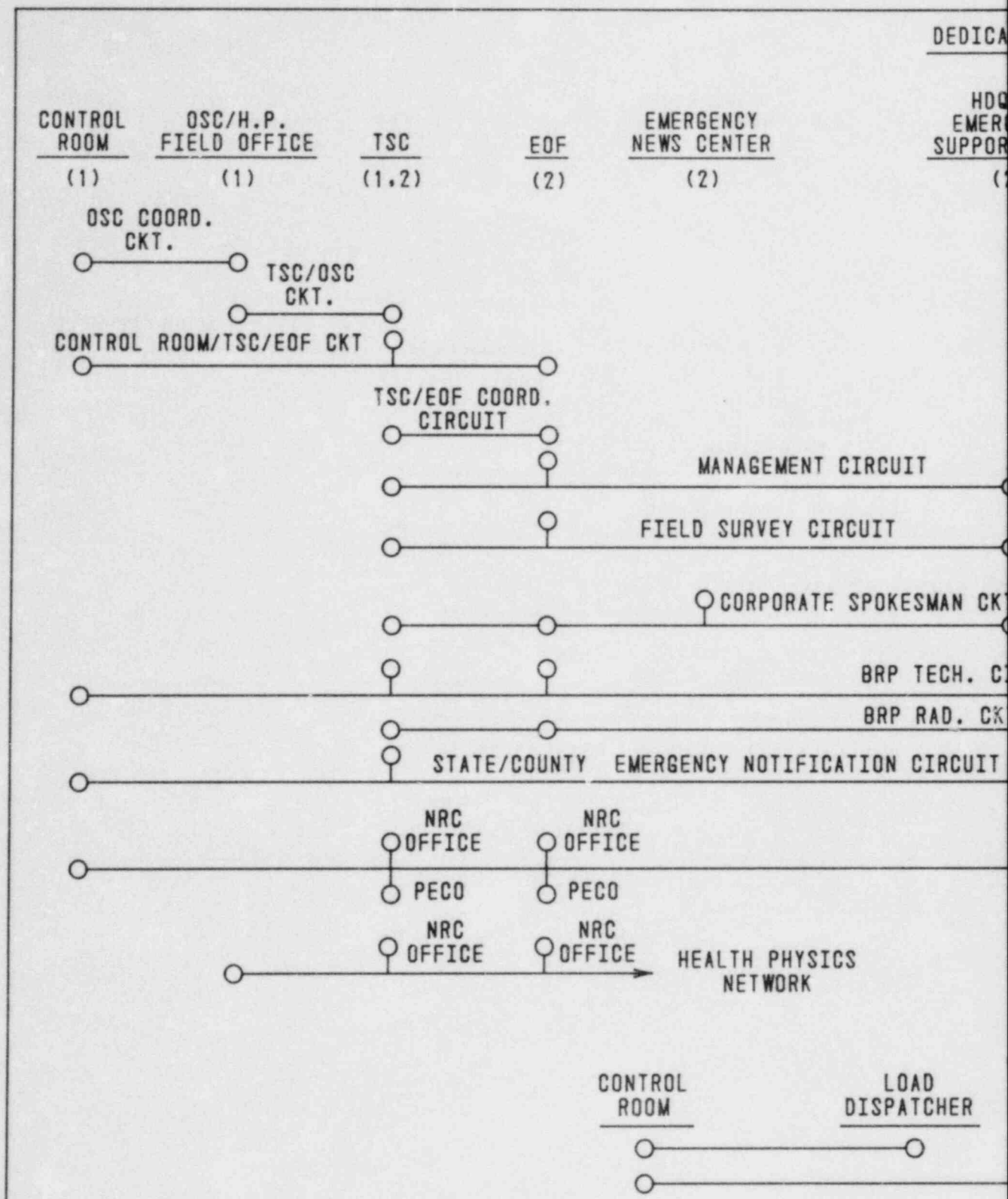


LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

EMERGENCY SUPPORT CENTER
CONCEPTUAL PLAN
SHEET 2 OF 2

FIGURE 7-1

REV. 2, 06/82


DEDICA
CONTROL ROOM
(1)
OSC/H.P. FIELD OFFICE
(1)
TSC
(1,2)
EOF
(2)
EMERGENCY NEWS CENTER
(2)
HDQ
EMER
SUPPOR
(
OSC COORD. CKT.
TSC/OSC CKT.
CONTROL ROOM/TSC/EOF CKT
TSC/EOF COORD. CIRCUIT
MANAGEMENT CIRCUIT
FIELD SURVEY CIRCUIT
CORPORATE SPOKESMAN CK
BRP TECH. C
BRP RAD. CK
STATE/COUNTY EMERGENCY NOTIFICATION CIRCUIT
NRC OFFICE
NRC OFFICE
PECO
PECO
NRC OFFICE
NRC OFFICE
HEALTH PHYSICS NETWORK
CONTROL ROOM
LOAD DISPATCHER
(1) PA STATION LOCATION
(2) TELECOPY PROVIDED

D SWITCH CONNECTIONS

S
ICY
CTR. | PEMA | MONTGOMERY COUNTY | BERKS COUNTY | CHESTER COUNTY | BUREAU OF RAD. PROT. | USNRC, KING OF PRUSSIA | USNRC, BETHESDA, MD.

UIT

NRC EMERGENCY NOTIFICATION SYSTEM (ENS)

RADIO
MONTGOMERY
COUNTY

LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

EMERGENCY
COMMUNICATION LINKS

FIGURE 7-2 REV. 7, 12/83

8.0 MAINTAINING EMERGENCY PREPAREDNESS

Personnel and equipment shall be maintained in a state of preparedness to ensure that the provisions of this Emergency Plan and implementing procedures can be accomplished in emergency conditions. This section describes the means to achieve and maintain this preparedness and the means to maintain this Emergency Plan and implementing procedures.

Personnel are assigned, in this Emergency Plan, to emergency organization positions in a manner to benefit from their previous experience and training and from the expertise needed in their normal responsibilities. Therefore, qualification to assume an emergency organization position is met by virtue of holding the designated position in the Corporate or plant staff organization and by completion of the training required by Table 8-1.

8.1 ORGANIZATIONAL PREPAREDNESS

8.1.1 TRAINING

The objectives of training are:

a) To familiarize personnel with the contents and manner of implementation of the Emergency Plan and the implementing procedures;

b) To train personnel with respect to the performance of the specific duties assigned to them in the Emergency Plan and in applicable implementing procedures;

c) To keep personnel informed of any changes in the Emergency Plan and the implementing procedures; and

d) To maintain a high degree of preparedness at all levels of the Emergency Plan response organization.

To accomplish these objectives, the initial training and periodic retraining described in Table 8-1 shall be performed. Many emergency response positions filled by corporate support personnel use the same individuals for both Limerick and Peach Bottom Atomic Power Station. In such cases, training credit for tasks and functions which are common to both plants may be coordinated. Functions which are unique to Limerick will be covered in coordinated programs or specific sessions for Limerick will be used. Training and qualification for job positions, such as Licensed Operator, Chemistry Technician, Health Physics Technician, and General Employee Training, are recognized as a base upon which the specific Emergency Plan training described in Table 8-1 may be built. Practical training

and hands-on demonstration of required skills are parts of the training and qualifications for job positions. Where such skills are used in both routine and emergency functions, skill demonstrations are not covered in Table 8-1.

Training of local support service personnel (ambulance, physicians, and fire company) who may enter the site to perform emergency tasks is provided by Philadelphia Electric Company. This training is also described in Table 8-1.

8.1.2 DRILLS AND EXERCISES

Emergency drills and exercises have the following objectives:

a) To test the adequacy of the effectiveness, timing, and content of implementing procedures and methods;

b) To test emergency equipment and communication networks including the public notification system;

c) To ensure that the emergency organization personnel are familiar with their duties and responsibilities.

Drills and exercises will be conducted as realistically as is reasonably possible. Preplanned descriptions or scenarios for drills and exercises will be prepared to define the objectives and methods and to form a basis for evaluating adequacy of performance. Scenarios will identify the simulated events, describe the expected response by the emergency organization including a sequence of events or timing if applicable, and provide for observer(s). Advance material, information, or training to be provided to official observers and evaluators will be noted. Scenarios may be developed in such a manner as to accomplish more than one periodic requirement. For example, an annual emergency exercise scenario may include a simulated radiation/ medical casualty and, therefore, fulfill two exercise/drill provisions. Scenarios for annual exercises are submitted to NRC for review of adequacy of scenario and expected response.

Records of exercises and drills, including dates, times, places, and participants as appropriate, shall be developed and maintained. Critiques of exercises and drills will be held and written evaluations will be prepared. Federal and State observers or evaluators will be invited to critiques of exercises in which they participated as observers or evaluators. As indicated by evaluation, weak areas in training, procedures, or equipment will be identified in the written evaluation.

In order to ensure that corrective action is taken for weak areas (including procedural changes) identified during exercises and drills, the following management controls are implemented.

a) For areas which appear to require rapid correction, the individual responsible for conduct of the exercise or drill shall forward a copy of the written evaluation and appropriate recommendations to the Emergency Planning Coordinator. The Emergency Planning Coordinator shall evaluate such recommendations and take the action needed to accomplish appropriate changes.

b) During the annual Emergency Plan review (refer to Section 8.2.1), the reviewer shall evaluate weak areas which are identified in the written evaluations of drills and exercises conducted since the previous annual review and shall propose any appropriate changes in the report of the review.

c) The Emergency Planning Coordinator shall track the corrective actions as a means to assure that corrections are made in a reasonable time.

8.1.2.1 JOINT FEDERAL, STATE, AND LOCAL EXERCISES

On a frequency established by Federal Regulations (10 CFR 50,44 CFR 350), an exercise using a scenario appropriate for a Site or General Emergency shall be performed. The exercise will test as a minimum the following aspects of the Emergency Plan.

a) Notification and activation of PEMA, the NRC, applicable County agencies, and local civil agencies and service organizations (such as for medical or firefighting assistance) appropriate for the scenario.

b) Notification and activation of the PECo Headquarters Emergency Support Center and Emergency News Center.

c) Activation of the Emergency Operations Facility, Operations Support Center, and Technical Support Center and those Interim Emergency Teams and Emergency Teams appropriate for the scenario.

d) Content of implementing procedures applicable to the scenario.

e) Functioning of appropriate emergency equipment and communications.

f) Personnel capability to perform duty assignments.

The scheduling of this exercise will be coordinated with PEMA with the intent of enabling PEMA to participate in a full-scale exercise every year and to enable Maryland, New Jersey, and Delaware to participate in a full-scale exercise every three years, considering the reactor licenses in each State.

8.1.2.2 ANNUAL EMERGENCY EXERCISES

Annually (plus or minus 3 months) except in the year in which the exercise in 8.1.2.1 is performed, an exercise using a scenario appropriate for a Site or General Emergency involving a simulated radioactive material release or high radiation condition shall be performed. Scenarios will be varied from year to year. The exercise as a minimum will test the following aspects of the Emergency Plan.

a) Notification of PEMA, the NRC, applicable County agencies, local civil agencies and service organizations (such as for medical or firefighting assistance) appropriate for the scenario. County agencies and appropriate local service organizations should be activated.

b) Notification of PECo Headquarters Emergency Support Center and Emergency News Center personnel.

c) Activation of the Emergency Operations Facility, Operational Support Center, and Technical Support Center.

d) Activation of Radiation Survey Teams. Performance of on-site and off-site surveys and collection of environmental sample media. Simulation of recovery of off-site environmental monitoring devices should be included.

e) Activation of Interim Emergency Teams and Emergency Teams appropriate for the scenario.

f) Content of implementing procedures applicable to the scenario.

g) Functioning of appropriate emergency equipment and personnel capability to perform duty assignment.

8.1.2.3 RADIATION/MEDICAL DRILLS

Annually (plus or minus 3 months), a drill shall be conducted simulating a serious personnel injury combined with radiation overexposure or extensive contamination. These drills shall test the following aspects.

a) Personnel Safety Teams, administration of first aid, and decontamination methods at the plant.

b) Transportation by ambulance or other appropriate transport of the victim(s) to a medical facility (Pottstown Memorial Medical Center and/or the Radiation Medical Center at the Hospital of the University of Pennsylvania).

c) Emergency response by plant, local physician, hospital, and RMC personnel as appropriate for the scenario.

d) Content of implementing procedures applicable to the scenario.

e) Functioning of appropriate emergency equipment.

8.1.2.4 FIRE DRILLS

Fire drills will be performed quarterly. Annually the Linfield Fire Company will be requested to participate in a fire drill. These drills will test the response of the Fire Brigade and the availability/condition of equipment. Fire drills which include the Linfield Fire Company will test the notification method and emergency access procedures, will serve to verify equipment compatibility (as applicable), and will refresh fire company personnel with Limerick firefighting capabilities.

8.1.2.5 COMMUNICATION DRILLS

The following communication system tests shall be performed at the indicated frequency, commencing with issuance of the operating license for Unit 1. Communication system tests with off-site agencies, which are not performed in conjunction with another drill or exercise, will include information regarding the content of actual emergency notifications.

a) The prompt notification channel between the Control Room and PEMA, Montgomery County, Chester County, and Berks County shall be tested monthly.

b) The commercial phone between the Control Room and the US DOE Brookhaven Area Office shall be tested quarterly.

c) The communications link between the plant and the Bureau of Radiation Protection for transmittal of technical data shall be tested monthly.

d) The USNRC Emergency Notification System from the Control Room to the US NRC offices in Bethesda, Maryland shall be tested monthly.

e) Communications used by field survey teams shall be tested during the annual radological emergency drill.

f) Communications with ingestion pathway States will be conducted by the notifying organization. That organization will establish the frequency of testing.

Other communications are via normal telephone lines and are used on a regular basis. In addition, they will be tested and evaluated during the annual exercise.

8.1.2.6 RADIOLOGICAL MONITORING/HEALTH PHYSICS DRILLS

Semi-annually, a drill involving the Plant Survey Group and the Field Survey Group will be performed. The drill will cover the following aspects:

a) Notification and activation.

b) Collection and anlysis of environmental samples (e.g. air, water, and vegetation) and procedures for handling environmental monitoring TLD's.

c) Communications

d) Recordkeeping

e) Proper functioning of applicable emergency equipment including the post-accident sampling system.

f) Content of implementing procedures.

8.2 REVIEW AND REVISION OF THE EMERGENCY PLAN AND PROCEDURES

8.2.1 EMERGENCY PLAN REVIEW

This Emergency Plan shall be reviewed annually by a member of the Electric Production Department Staff, not immediately responsible for emergency preparedness, appointed by the Superintendent, Nuclear Generation Division. The review will encompass the need for changes based upon the following aspects.

a) Written critiques and evaluations of drills. Such records identify any deficiencies or more desirable methods, procedures, or organizations. Followup actions on suggested changes shall be reviewed.

b) Changes in key personnel involved in the organization or procedures.

c) Changes in the plant organization structure.

d) Changes in the functions and capabilities of supporting agencies. Refer to Section 8.2.4.

e) Changes in State or Federal regulations.

f) Modifications to the plant or site which would affect emergency planning.

g) Recommendations received from other organizations, such as the State and Federal agencies, or other nuclear facilities.

h) Changes in construction or operating status.

i) Significant changes in the surrounding area to include population density and land usage.

j) Adequacy of training and readiness testing.

k) Adequacy of emergency equipment maintenance.

l) Interfaces with State and County emergency management agencies.

m) Changes in other plant operating or administrative procedures.

The results of the review shall be documented in a letter from the reviewer to the Station Superintendent. The letter shall state the areas reviewed (those listed above, as a

minimum), the results for each area, and the action to be taken to correct weak areas.

If the review indicates that minor changes are needed, the reviewer shall formalize the proposed changes and submit them for review by the Plant Operations Review Committee (PORC).

If the review indicates that substantive changes are needed, a three person review committee shall be convened by the Superintendent, Nuclear Generation Division to develop the necessary changes. The committee shall consist of one member from the Limerick staff, one member from the Electric Production Department not on the Limerick staff, and one member appointed by the Nuclear Review Board (NRB). The review committee shall recommend the necessary changes to the PORC. The recommended changes with the PORC's evaluation and any additional PORC recommendations shall be presented to the NRB Committee for review. The NRB shall make a recommendation regarding the proposed changes to the Vice-President of the Electric Production Department. Upon approval by the Vice-President, the approved changes shall be incorporated into the Emergency Plan or appropriate implementing procedures.

8.2.2 IMPLEMENTING PROCEDURE REVIEW

Implementing procedures shall be revised to reflect changes in the Emergency Plan. Additionally, implementing procedures are reviewed and revised, independent of the annual Emergency Plan review, according to plant Administrative Procedures.

The telephone number list for emergency organizations and personnel shall be reviewed and updated (if needed) at least quarterly.

8.2.3 METHOD OF APPRISING PERSONNEL

Revised pages of the Emergency Plan shall be prepared and distributed to personnel and groups on a Distribution List. Holders of the Emergency Plan will be requested to acknowledge receipt of the revised pages. The receipts shall be returned to the Emergency Preparedness Section.

If changes to the Emergency Plan affect contractor support personnel or groups, these personnel shall be informed with the of such changes. Contractor groups will be responsible for apprising their personnel of these changes. Station supervision shall apprise their personnel of the changes in the Emergency Plan and the implementing procedures. All changes will be incorporated into the training programs, as appropriate.

8.2.4 REVIEW AND UPDATING WRITTEN AGREEMENTS

Agreement letters shall be reviewed during the annual Emergency Plan review for any necessary change or updating. Agreement letters may include a termination statement which allows for a continuation of the agreement by year unless written notice from either party to discontinue the agreement is given sixty days prior to termination. The reviewer shall contact the off-site support organization and confirm the continuation of the agreement. The reviewer shall document the date of confirmation and the individual within the off-site support organization who confirmed the agreement.

8.3 MAINTENANCE AND INVENTORY OF EMERGENCY EQUIPMENT AND SUPPLIES

To ensure the operational readiness of emergency equipment and supplies, implementing procedures define the schedules and tasks for performing maintenance, surveillance, calibration, testing, and inventory of such items. Completion of these activities is documented and any deficiencies are corrected.

Decontamination and survey kits shall normally be sealed when not in use. The content of these kits shall be inventoried semi-annually and after each use. Emergency survey instruments shall be operationally checked and calibrated in accordance with methods and at frequencies defined in implementing procedures. Supplier recommendations are considered in developing such procedures. Instruments which do not function properly or are removed from survey kits for calibration shall replaced with functional instruments.

8.4 PUBLIC EDUCATION

The response of the public to any emergency event will be more predictable and more likely to be consistent with government officials' instructions if the public has received sufficient prior education. An aware and informed public greatly reduces the problem for those responsible for emergency management.

Philadelphia Electric Company maintains an Information Center near the Limerick site. This is open to the public. Organized visits by school classes, and social, civic and technical groups are frequent. A Company speakers' bureau accepts invitations from various organizations to discuss and debate topics germaine to nuclear power stations and

TABLE 8-1 (Sheet 1 of 9)

INITIAL TRAINING AND PERIODIC RETRAINING

PERSONNEL CATEGORY/POSITIONS	INITIAL TRAINING AND PERIODIC RETRAINING
1. Directors of plant emergency organization: Interim Emergency Director and Emergency Director Station Superintendent Assistant Station Superintendent Shift Superintendents Shift Supervisors (Federal, State and County emergency management coordinators are invited to attend	Initial Training: Instruction in scope, organization, responsibilities, and functions of this Emergency Plan and associated implementing procedures. Command authority, emergency classification, and communication/notification methods are emphazised. Annual Retraining: Review of areas covered by initial training with emphasis on changes in the Emergency Plan and associated implementing procedures since the previous training period.
2. Personnel responsible for assessment activities and plant technical support: Station Superintendent Assistant Station Superintendent Engineer-Operations Engineer-Technical Senior Chemist Senior Health Physicist Shift Superintendents Shift Supervisors Shift Technical Advisors	Initial Training: In addition to the topics listed under Initial Training for Item 1 above, initial training will emphasize the instruments and implementing procedures used for projecting radiological consequences. Activation of the various emergency centers and control of radiation survey teams are included. Annual Retraining: Review of areas covered by initial training with emphasis on changes in the Emergency Plan, associated implementing procedures, and equipment associated with assessment since last training period.

TABLE 8-1 (Cont'd) (Sheet 2 of 9)

PERSONNEL CATEGORY/POSITIONS	INITIAL TRAINING AND PERIODIC RETRAINING
3. Radiation survey and evaluation: Shift HP technicians HP technicians assigned to Radiation Survey Teams Senior Health Physicist Applied Health Physicist Dose Assessment Team Personnel Dosimetry Group Environmental Sampling Coordinator Plant Survey Group Health Physics and Coordinator	Initial Training: Activation methods. Survey equipment, methods, and purpose. Reporting survey results and evaluation of results. Collection of environmental samples. Survey and sample locations. Activation of the Emergency Operations Facility and Operations Support Center. Overview of the Emergency Plan scope, organization, and emergency classification. Practical drills to demonstrate performance of appropriate emergency duties are included. Annual Retraining: Same as Initial Training, with emphasis on changes in methods and equipment since the previous training period.
4. Fire and Damage Activation Team: Shift Supervisors Auxiliary Operators Engineer-Maintenance Assigned plant staff members	Initial Training: methods. Familiarization with Limerick firefighting equipment. Coordination with off-site fire company and emergency access procedures. Use of equipment and firefighting techniques. Leaders of the Fire Brigade receive firefighting training at the PECo Gas Operations Fire School (or equivalent) as soon as practicable within one year after appointment to the position.

TABLE 8-1 (Cont'd) (Sheet 3 of 9)

PERSONNEL CATEGORY/POSITIONS	INITIAL TRAINING AND PERIODIC RETRAINING
	Periodic Retraining: Leaders of the Fire Brigade receive retraining at the PECo Gas Operations Fire School (or equivalent) every five years after initial training. Other team members receive retraining in firefighting from graduates of the Fire School (or equivalent) every two years.
5. Personnel Safety Team: Plant Operators Assistant Plant Operators Assigned plant staff members First Aid Group Personnel Accountability Group Plant Survey Group	Initial Training: Instruction in the scope, functions and responsibilities in the Emergency Plan and implementing procedures as they apply to evacuation planning, assembly areas, accountability, and personnel monitoring, decontamination techniques, emergency radiation exposure guidance, Security Procedures as they apply to this function, and transportation and hospitalization procedures for radiation and contamination victims. At least one member of the First Aid Group and the Interim Team Leader receive training from the PECo Safety Department in first aid procedures in accordance with American Red Cross. Practical drills to demonstrate performance of appropriate emergency duties and procedures are included. Periodic Retraining: Annual retraining will include the areas described for Initial Training (except first aid training) with emphasis on procedure and equipment changes since the last training period. First aid refresher training is

TABLE 8-1 (Cont'd) (Sheet 4 of 9)

PERSONNEL CATEGORY/POSITIONS	INITIAL TRAINING AND PERIODIC RETRAINING
	given every two years by the PECo Safety Department.
6. Firefighting support: Linfield Fire Company	Initial and Annual Retraining Personnel are provided a briefing on firefighting aspects at LGS. Aspects covered are: plant layout, equipment locations, equipment compatibility, radiation protection practices, notification and emergency access, Limerick contact personnel and organization responsibilities. Changes in these areas since the last training period will be emphasized.
7. Medical support: Local physicians Ambulance services Pottstown Memorial Medical Center	Initial and Annual Retraining (Local Physicians): Under the direction of the PECo Medical Department, Canberra/Radiation Management Corporation conducts a seminar which covers notification and emergency access, Limerick contact personnel, basic radiation protection practices, organizational responsibilities, medical management of radiation accident patients, procedures for transportation and hospitalization, and capabilities, and methods for definitive evaluation and treatment of radiation accident patients.
	Initial and Annual Retraining (Ambulance Personnel): Personnel are offered a briefing which covers notification methods, emergency access procedures and Limerick contact personnel, radiation protection prac-

TABLE 8-1 (Cont'd) (Sheet 5 of 9)

PERSONNEL CATEGORY/POSITION	INITIAL TRAINING AND PERIODIC RETRAINING
	tices, organizational responsibilities, and transportation and reception of radiation accident patients at Pottstown Memorial Medical Center and at the Radiation Medicine Center, University of Pennsylvania, Philadelphia. Initial and Annual Retraining (Hospital Personnel): Under the direction of the PECo Medical Director, RMC conducts a seminar which covers notification, basic radiation protection practices, organizational responsibilities, and reception, medical management, and definitive evaluation and treatment of radiation accident patients. The type and degree of assistance from RMC and the Radiation Medicine Center, University of Pennsylvania, Philadelphia, is covered.
8. Security: Security Assistant Sgt-of-the-Guard Security Guards	Initial Training: Instruction in the scope, organization, and responsibilities assigned in the Emergency Plan. Emergency access procedures (such as for ambulance and fire truck); security personnel functions related to activation of the TSC; site security for emergencies; contingency plans for security badging of support personnel. Practical drills to demonstrate performance of emergency duties and procedures are included. Annual Retraining: Same as Initial Training with emphasis

TABLE 8-1 (Cont'd) (Sheet 6 of 9)

PERSONNEL CATEGORY/POSITIONS	INITIAL TRAINING AND PERIODIC RETRAINING
	on changes in applicable portions of the Emergency Plan and associated implementing procedures affecting the security function.
9. Site Emergency Coordinator: Superintendent, Nuclear Generation Division Superintendent, Nuclear Services Superintendent, Peach Bottom Atomic Power Station	Initial Training: Instruction in the scope, organization, responsibilities, and functions of this Emergency Plan and associated implementing procedures. Command authority, emergency classification, notification requirements and methods, display equipment capabilities, and responsibilities of off-site agencies are emphasized. Radiation Survey Team functions, dose projection methods, environmental monitor locations, and local geography and transportation routes are covered. Plans for establishment of the Emergency Support Center are reviewed. Annual Retraining: Same as Initial Training with emphasis on changes in the Emergency Plan and associated implementing procedures since the last training period.
10. Corporate support: Emergency Support Officer and alternate Recovery Manager and alternate Federal and State Government and alternate Corporate spokesman Admin. & Logistics Manager and alternate	Initial Training: Instruction in scope, organization, responsibilities, and functions of the Emergency Plan. Emphasis is given to the responsibilities of each group, methods of implementation and the necessary interfaces. The specific methods for notification and activation are covered.

TABLE 8-1 (Cont'd) (Sheet 7 of 9)

PERSONNEL CATEGORY/POSITIONS	INITIAL TRAINING AND PERIODIC RETRAINING
Support Personnel Procurement Coordinator and alternate Comm. Equip. Coordinator and alternate Purchasing Coordinator and alternate Transportation Coordinator and alternate Stores Div. Coordinator and alternate T&D Support Coordinator and alternate Insurance Coordinator and alternate Emerg. Security Officer and alternate Emerg. Medical Director and alternate Core Physics Coordinator and alternate Supp. Pers. Accom. Coordinator and alternate Design & Construction D&C Support Officer and alternate Public Info. Officer and alternate EOF Eng. Liaisons Inst. & Cont. Coordinator and alternate QA/QC Coordinator and alternate Licensing Coordinator and alternate Civil Eng. Coordinator and alternate System-Eng.-Mech. and alternate System-Eng.-Elec. and alternate Maintenance Coordinator and alternate	Command authority, emergency classification, off-site agency functions, and communication links are reviewed. Annual Retraining: Same as Initial Training with emphasis on significant changes to the Emergency Plan and associated implementing procedures which affect these positions.

TABLE 8-1 (Cont'd) (Sheet 8 of 9)

PERSONNEL CATEGORY/POSITIONS	INITIAL TRAINING AND PERIODIC RETRAINING
Ventilation Coordinator and alternate Procedures Support Coordinator and alternate Training Coordinator and alternate Emerg. Prep. Coordinator and alternate HP&C Coordinator and alternate	
11. Support Group Admin. & Logistics Mgr. and alternate Support Personnel Procurement Coordinator and alternate Support Personnel Accom. Coordinator and alternate Support Pers. Accom. Group - Schuylkill Division	Initial Training: Activation methods. Instruction in specific functions and methods of coordinating group activities. Review of resource listings and needs. Annual Retraining: Same as Initial Training with emphasis on changes to the Emergency Plan applicable to the group and resource changes.
12. TSC and EOF equipment operations personnel: TSC communicators, recordkeepers, and display operators EOF communicators, recordkeepers, and display operators.	Initial Training: Activation of the EOF and TSC. Communication circuits and purposes. Hands-on operation and use of display equipment, records, and communication equipment. Annual Retraining: Same as Initial Training with emphasis on changes in the Emergency Plan, associated implementing procedures, and equipment since the last training period.

TABLE 8-1 (Cont'd) (Sheet 9 of 9)

PERSONNEL CATEGORY/POSITIONS	INITIAL TRAINING AND PERIODIC RETRAINING
13. Chemistry Sampling and Analysis Team: Senior Chemist Assigned Chemistry Tech's Assigned Plant Staff members	Initial Training: Activation and notification. Sampling and analysis equipment and procedures. Anticipated results under emergency conditions. Annual Retraining: Same as Initial Training with emphasis on equipment and associated procedure changes since the last training period.
14. Operations Support Center Coordinator: Assigned Plant Staff members Shift personnel	Initial and Annual Training: Activation and purpose of the OSC. Communications and record-keeping. Associated implementing procedures.
15. Dose Assessment Team Senior Health Physicist Technical Health Physicist Assigned Staff Members	Initial Training and Annual Training Training with emphasis on equipment and procedures used for projecting radiological consequences.

9.0 RE-ENTRY AND RECOVERY

In any emergency, the immediate action is directed to limiting the consequences of the incident in a manner that will afford maximum protection to the plant personnel and the general public. Once the immediate corrective and protective actions have established an effective control over the incident situation, the emergency actions can shift into the reentry and recovery phase, where all actions will be planned and deliberate. The decision to shift to the recovery phase will be made jointly by the Emergency Director, Site Emergency Coordinator, Emergency Support Officer, and the Federal and State Government Liaison.

Because it is not possible to anticipate in advance all of the conditions that may be encountered in recovery from emergencies, reliance is placed in the technical expertise and logistics support capabilities of the emergency organization described in Section 5 of this Plan to develop and implement recovery plans which will meet the needs of existing and potential conditions.

9.1 RE-ENTRY

All re-entry operations and procedures will be planned prior to re-entry. Re-entry operations will be performed by a re-entry team which is under the leadership of the Emergency Director. The Emergency Director may delegate this responsibility to the Assistant Station Superintendent. The team shall consist of personnel knowledgeable in radiation survey procedures, radiation protection techniques, and plant layout. Their entrance into plant areas requires detailed planning of the operation prior to initiation of the entrance. In the re-entry planning process, the team will gather available information on the nature of the emergency and its present status by methods such as discussions with the operations personnel on-shift in the Control Room and in the Technical Support Center, and by interviewing evacuees in the assembly area(s). Technical support in the form of advice from knowledgeable members of the Engineering and Research Department will be sought as required. The authority to initiate re-entry rests with the Emergency Director. The Emergency Director shall be kept informed by the Shift Superintendent as to known hazardous conditions and plant status which might affect re-entry efforts.

Re-entry is a deliberate process involving no unnecessary radiation exposure and shall not interfere or interrupt

personnel accountability or attention to injured or contaminated evacuees. Necessary protective clothing and equipment, such as for the Search and Rescue Groups, must be available before re-entry is authorized.

As the re-entry is a planned process, the exposure of team members will be limited to normal occupational limits outlined in 10CFR 20.101. The Health Physicist shall advise the Emergency Director as to stay times, dose rates and exposures.

9.2 RECOVERY

A recovery plan, from a practicable standpoint, must be flexible enough to adapt to existing, rather than theoretical conditions. Detailed plans and procedures for recovery operations will be written at the time they are needed. Procedures have been developed for entering contaminated/radiation areas and for decontamination of personnel and equipment, and are used in the normal Health Physics program. These procedures are readily adaptable for use during recovery operations.

APPENDIX A

LETTERS OF AGREEMENT

CONTENT

LGS EP

EXHIBIT A-1

Letter of Agreement
from
Pennsylvania Emergency Management
Agency (PEMA)
will be provided at
a later date.

LGS EP

EXHIBIT A-2

Letter of Agreement
from
Pennsylvania Department of Environmental
Resources/Bureau of Radiation
Protection
will be provided at
a later date.

LGS EP

EXHIBIT A-3

Letter of Agreement
from
Montgomery County Office of
Emergency Preparedness
and
Medical Services
will be provided at
a later date.

LGS EP

EXHIBIT A-4

Letter of Agreement
from
Chester County Department
of Emergency Services
will be provided at
a later date.

LGS EP

EXHIBIT A-5

Letter of Agreement
from
Berks County Emergency
Management Agency
will be provided at
a later date.

Department of Energy
Brookhaven Area Office
Upton, New York 11973
516-345-3430

May 21, 1979

G. M. Leitch, Superintendent
Limerick Generating Station
P.O. Box A, Sanatoga Branch
Pottstown, PA 19464

Dear Mr. Leitch:

SUBJECT: LIMERICK GENERATING STATION

Since your nuclear facility is located in Region I, the Brookhaven Area Office is charged with the responsibility for providing radiological assistance in the event of an emergency. Such assistance can be requested at all times by calling 516-345-2200 and asking for radiological assistance indicating the nature of the incident, the location, and how to contact authorities to coordinate our response.

The Department of Energy (DOE) will respond to requests for radiological assistance from licensees, Federal, state and local agencies, private organizations, or individuals involved in or cognizant of an incident believed to involve source, byproduct, or special nuclear material as defined by the Atomic Energy Act of 1954, as amended, or other ionizing radiation sources.

Unless the DOE or a DOE contractor is responsible for the activity, ionizing radiation source, or radioactive material involved in an incident, DOE radiological assistance will be limited to advice and emergency action essential for the control of the immediate hazards to health and safety. Radiological emergency assistance will be terminated as soon as the emergency situation is under control. Therefore, responsibility for postincident recovery, including further action for the protection of individuals and the public health and safety, should be assumed by the appropriate responsible Federal, state of local government, or private authority as soon as the emergency conditions are stabilized.

If you have any further questions or desire further information, feel free to contact me.

Very truly yours,

Robert Friess/jwe

Robert Friess
Technical Assistant
to the Area Manager

cc: B. H. Grier, Office of Inspection & Enforcement, Nuclear Regulatory Commission, Region I

G. P. Dix, Division of Operational and Environmental Safety, HQ

LGS EP
EXHIBIT A-7

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket Nos. 50-352
50-353

JUL 23 1979

Philadelphia Electric Company
Limerick Generating Station
ATTN: Mr. G. M. Leitch
Station Superintendent
P. O. Box A. Sanatoga Branch
Pottstown, Pennsylvania 19464

Gentlemen:

This letter is being sent in response to your request regarding the participation of the Nuclear Regulatory Commission in the event of an emergency at the Limerick Generating Station - Units 1 & 2.

The primary role of the NRC during a radiation emergency is that of conducting investigative activities associated with the incident and verifying that emergency plans have been implemented and proper agencies notified. In addition, however, if NRC personnel are dispatched to the scene, they will, as needed, assist in coordination with the Department of Energy Radiological Assistance Team and provide to state and local agencies advisory assistance associated with investigating and assessing hazards to the public.

Sincerely,

Boyce H. Grier
Director

LGS EP
EXHIBIT A-8

Pottstown Memorial Medical Center

June 26, 1979

William F. Hushion, M.D.
Medical Director
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Dear Doctor Hushion:

The Pottstown Memorial Medical Center confirms their desire to cooperate with Philadelphia Electric Company and Limerick Generating Station by the acceptance of casualties resulting from accident either of a radiation and/or non-radiation source.

It is understood that written procedures detailing the actions to be followed for the treatment of these patients will be implemented and that hospital personnel will on a continuing basis receive instructions regarding this plan of action and will make periodic "dry runs" as needed.

It is further understood that Philadelphia Electric Company will provide any specialized health physics equipment as may be necessary.

Sincerely yours,

Albert P. Pollick

Albert P. Pollick
President

sel

rmc

PRESIDENT

radiation management corporation

UNIVERSITY CITY SCIENCE CENTER

3508 MARKET STREET
PHILADELPHIA, PA 19104
(215) 243-2960

April 9, 1980

Mr. Graham Leitch
Station Superintendent
Limerick Nuclear Generating Station
Limerick, Pa.

SUBJECT: Emergency Medical Assistance Program (EMAP)

Dear Mr. Leitch:

This confirms an agreement between Radiation Management Corporation (RMC) and Philadelphia Electric Company, wherein RMC agrees to furnish certain services to nuclear generation stations operated by Philadelphia Electric Company. These services comprise a program that is identified by RMC as an Emergency Medical Assistance Program (EMAP). With regard to Limerick Generating Station, the EMAP contains the following provisions:

1. Semi-annual review of plant procedures, equipment and supplies and hospital procedures; one of these audits will be in conjunction with (7.) below;

2. Twenty-four-hour-per-day availability of expert consultation on management of radiation accidents;

3. Availability of Bioassay Laboratory for evaluation of radiation accidents;

4. Twenty-four-hour-per-day access to a Radiation Emergency Medical Team consisting of a physician, certified health physicist, and technicians with portable instrumentation to location of accident victim;

5. Availability and access to a medical center equipped for the definitive evaluation and treatment of radiation injuries;

6. Annual training for the plant, ambulance and hospital personnel who may be directly or indirectly involved in the execution of the radiation medical emergency program;

7. Preparation of an "accident" scenario for use as a training aid in a radiation medical emergency drill;

8. Coordination of a radiation medical emergency drill based on the scenario; umpired, video taped and critiqued by RMC;

continued.....

rmc

9. Submission of two Drill Evaluation Reports; one relating to the observations made at the station, and another relating to observations made at the hospital; and

10. Participation in an annual one-day seminar in Philadelphia on the management of radiation accidents for physicians. Each plant may send one physician, and each utility company may send one physician.

ACCIDENT RESPONSE

Consultantion and laboratory services by RMC personnel are at no charge, except incremental costs associated with consultative activities, such as travel, lodging and other related expenses.

RADIATION MANAGEMENT CORPORATION

Roger E. Linnemann, M.D.
PRESIDENT

REL/sl

cc: William F. Hushion, M.D.

William F. Hushion, M. D.
Medical Director
Philadelphia Electric Company
2301 Market Street
Philadelphia, PA 19101

Dear Dr. Hushion:

This is to confirm our meeting with you at which time we reviewed the arrangements for the Goodwill Ambulance Unit to respond to a call for assistance to the Limerick Atomic Power Station which is located within our ambulance coverage area.

Our organization is prepared to respond within the limits of our resources to a call for ambulance service. It is further understood that Radiation Management Corporation will provide initial and followup training on an annual basis.

Sincerely,

Richard C. Leigh
CHAIRMAN AMBULANCE COMM.

LGS EP
EXHIBIT A-11

Organized — 1913 Chartered — 1916

Linfield Fire Company No. 1

LINFIELD • PENNSYLVANIA

9-17-79

The Linfield Fire Co. #1 will provide all needed fire potection, for the Phila, Eletric ,Power generating station located on Longview Rd, and Evergreen Rd in Limerick Township, The Fire company agrees to respond when ever called for Fire or emergency services.

Fire Phone; 323-3000

Chief Home 495-7050

Linfield Fire Chief.
Lloyd Swavely

SP3-346 (8-74)

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA STATE POLICE

Troop K
2201 Belmont Avenue
Phila., Penna., 19131

July 27, 1979

Mr. G. M. Leitch, Station Superintendent
Philadelphia Electric Company
P. O. Box A, Sanatoga Branch
Pottstown, Pennsylvania 19464

Dear Mr. Leitch:

This letter confirms agreement that the Pennsylvania State Police will respond to situations at Limerick Generating Station which require police participation including control of access to the Exclusion Area which surrounds the plant.

The Exclusion Area Boundary includes parts of both Montgomery County and Chester County. Pennsylvania State Police Troop K, at Limerick Station, and, Troop J Lancaster, at the Embreeville Station, cover this area.

Telephone numbers:

Commander, Troop K, Phila., Capt. Alexander Balnis, 215 877 4500

Commander, Troop K Limerick Station, Lt. John J. Flannery 215 495 7055

Commander, Troop J, Lancaster, Capt. Wayne E. Kerr 717 299 0441

Commander, Troop J Embreeville Station, Lt. Ronald R. Sharpe 215 269 5355

Very truly yours,

Alex. Balnis

CAPTAIN ALEXANDER BALNIS
Commander, Troop K

Copy to:
Commander, Troop J, Lancaster
Commander, Embreeville Station

CONRAIL

LGS EP
EXHIBIT A-13

May 10, 1979

Mr. R. A. Mulford
Project Manager
Philadelphia Electric Company
2301 Market Street
Post Office Box 8699
Philadelphia, PA 19101

Dear Mr. Mulford:

This refers to your letter dated May 1, 1979 concerning the control of rail traffic through the exclusion area of your Limerick Generating Station located about 1.7 miles southeast of the Borough of Pottstown in Montgomery County.

In October, 1978 we realigned the former Reading Division of Conrail and the tracks located within the exclusion area are now under the control of our Harrisburg Division.

The Harrisburg Division is under the direction of Mr. A. G. Lageman, III, Division Superintendent, and you can be assured of his complete cooperatior for the control of rail traffic in the exclusion area in case of any emergency situation.

Mr. Lageman is located in Room 200, Conrail Building, 600 Corporate Circle, Harrisburg, PA 17110 and can be reached by telephone during business hours on 717-255-1450. The emergency telephone number for the Harrisburg Division is 717-652-3772 and is available 24 hours a day, seven days a week.

Very truly yours,

R P McFeaters

R. P. McFeaters
Regl. Superintendent-
Transportation
Eastern Region

LGS EP
EXHIBIT A-14

CHARLES W. DELP, JR., M. D.
810 E. PHILADELPHIA AVENUE
BOYERTOWN, PA. 19512

AREA CODE 215
367-2259

10 April 1980

LETTER OF AGREEMENT

Dear Dr. Hushion:

This is to confirm that I agree to the following:

In the event of an accident at Limerick Nuclear Power Station, Limerick, Pa. involving radiation exposure of personnel. I will supply medical assistance on the site and assume the responsibility for the medical supervision of the patient(s) until he/they arrive(s) at a medical facility such as Pottstown Memorial Hospital, Pottstown, Pa., or until such time that my services are no longer required; all this provided that no other urgent medical duties, in my judgment, preclude my availability for the purpose mentioned above, in which case I will take steps to reduce the period of non-availability to a minimum.

It is understood that a similar agreement as the above is made with Dr. Forrest Mann, Pottstown, Pa. It is further understood that a Radiation Emergency Medical Team will be dispatched immediately upon notification of a radiation emergency at the plant by Radiation Management Corporation, Philadelphia, Pa., and that the physician on this team, upon arrival, will assist me in the duties described above.

(Signed) Charles W. Delp, Jr. M.D.

Pa. License No.
MD-025563 L

Date 10 Apr 80

LETTER OF AGREEMENT

Dear Dr. Hushion:

This is to confirm that I agree to the following:

In the event of an accident at Limerick Nuclear Power Station, Limerick, Pa. involving radiation exposure of personnel. I will supply medical assistance on the site and assume the responsibility for the medical supervision of the patient(s) until he/they arrive(s) at a medical facility such as Pottstown Memorial Hospital, Pottstown, Pa., or until such time that my services are no longer required; all this provided that no other urgent medical duties, in my judgment, preclude my availability for the purpose mentioned above, in which case I will take steps to reduce the period of non-availability to a minimum.

It is understood that a similar agreement as the above is made with Dr. (name), W Reading (city), Pa (state). Pa.
It is further understood that a Radiation Emergency Medical Team will be dispatched immediately upon notification of a radiation emergency at the plant by Radiation Management Corporation, Philadelphia, Pa., and that the physician on this team, upon arrival, will assist me in the duties described above.

Pottstown, Pa.
(City and State)

4/16/82
(Date)

(sign)
(Name)
Physician licensed in the state(s) of: Pennsylvania, license no. 021773.

902 Temple Dr.
Pottstown, Pa 19464
Phone 215-323-8593

PH Pottstown Memorial Medical Center
215 327-7105

APPENDIX B

TIME-DISTANCE-DOSE INFORMATION

CONTENT

APPENDIX B

METHODOLOGY FOR USING CONTAINMENT RADIATION MONITOR POST-LOCA DOSE RATES VS TIME CURVES

EXPLANATION

In a Design Basis Accident (DBA) like a LOCA, the containment radiation monitor dose rate curves are intended to indicate the quanity of airborne activity released from the fuel and from the primary coolant system to the containment. This activity is theoretically available for leakage or release to the environment. The setpoints on this monitor could be used to indicate to the operator that the Emergency Action Levels (EAL) corresponding to the Site and General Emergency or the ALERT level increase of 1000 in dose rate, were reached and that evaluation of all other data should be considered prior to declaring such emergencies.

PROCEDURES

The theoretical curves of gross gamma dose rate vs time are presented for 7 potential source terms. Listed below are the procedures for using the curves.

1. Determine the time (t) after reactor shutdown.

2. Obtain actual radiation monitor readings at time (t) after shutdown from the containment high range radiation monitors or the containment area radiation monitor.

3. On the theoretical dose rate curves, locate the actual dose rate readings at time (t).

4. Determine the percent (%) fuel inventory released to the containment air corresponding to the measured gamma dose rate, i.e., by interpolating between curves.

5. Utilizing the table attached, a relation between the % fuel inventory to the approximate source and damage estimate can be obtained.

6. To obtain Curies inventories multiply the % fuel inventory by the isotopic distribution given in FSAR Table 15.6-14 after adjusting for the appropriate delay time.

APPENDIX B

NOTE:

(1) These curves account for the finite containment volume and shield wall seen by the detector but do not account for any monitor physical or shielding characteristics or calibration uncertainties.

(2) The curves assume that both airborne noble gases and iodines are significant. Sprays (if used) would make the iodine and particulate contribution (presently about 50%) insignificant. However, particulate plateout on the monitor casing and direct shine doses from components may make the readings unreliable.

(3) Curve uncertainties are on the order of a factor of 5 to 10.

TABLE 1

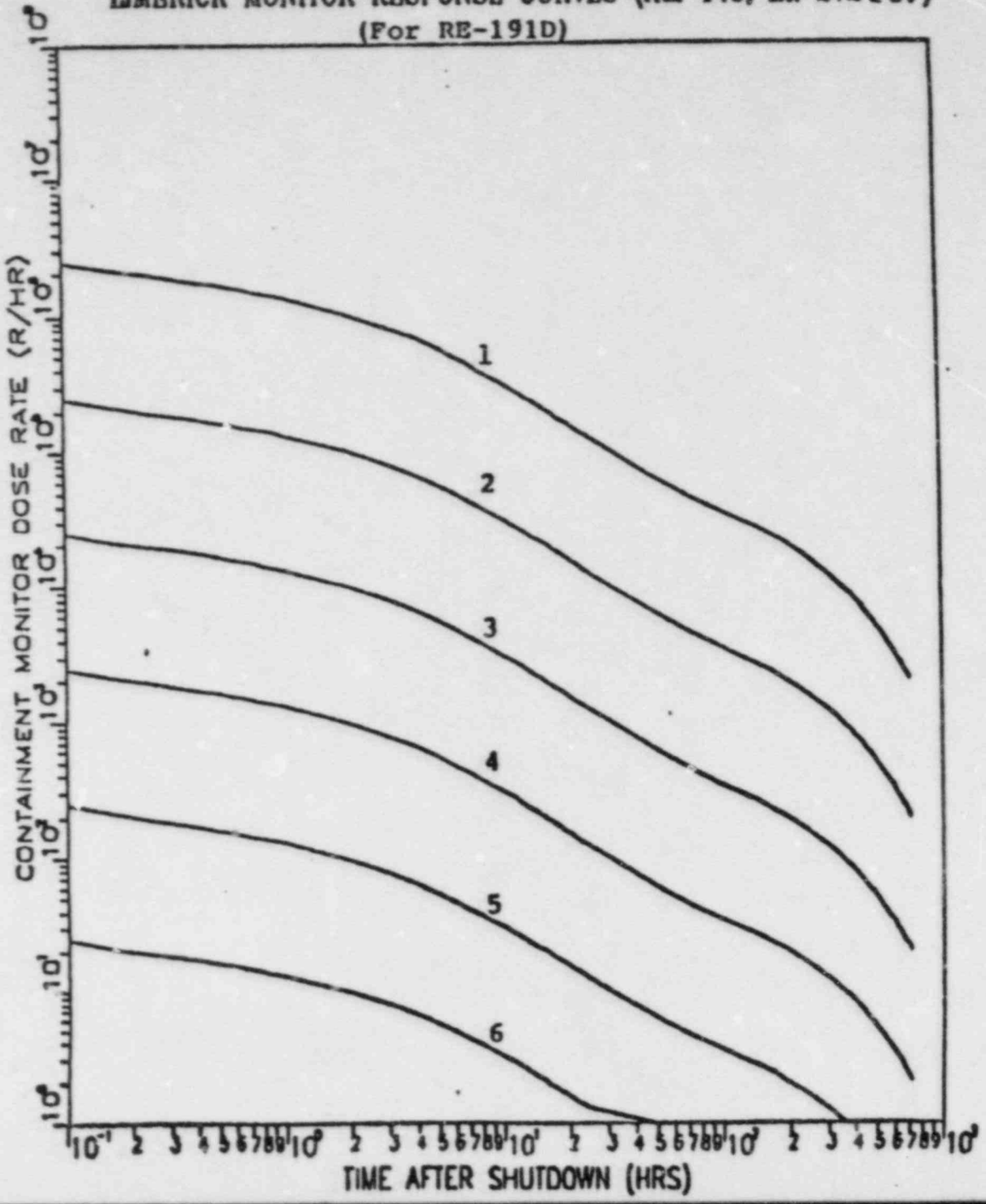
Percent of Fuel Inventory Airborne in the Containment Vs. Approximately Source and Damage Estimate

Curve No.	% Fuel * Inventory Released	Approximate Source and Damage Estimate
1	100.	100% TID-14844, 100% fuel damage, potential core melt.
	50.	50% TID noble gases, TMI source.
2	10.	10% TID, 100% NRC gap activity, total clad failure, partial core uncovered.
	3.	3% TID, 100% WASH-1400 gap activity, major clad failure.
3	1.	1% TID, 10% NRC gap, Max. 10% clad failure.
4	.1	.1%TID, 1% NRC gap, 1% clad failure, local heading of 5-10 fuel assemblies
5	.01	.01% TID, .1% NRC gap, clad failure of 3/4 fuel element (36 rods).
6	10^{-3}	.01% NRC gap, clad failure of a few rods
	10^{-4}	100% coolant release with spiking.
7	5×10^{-6}	100% coolant inventory release
	10^{-6}	Upper range of normal airborne noble gas activity in containment

*100% Fuel Inventory = 100% Noble Gases +25% Iodine + 1% particulates.

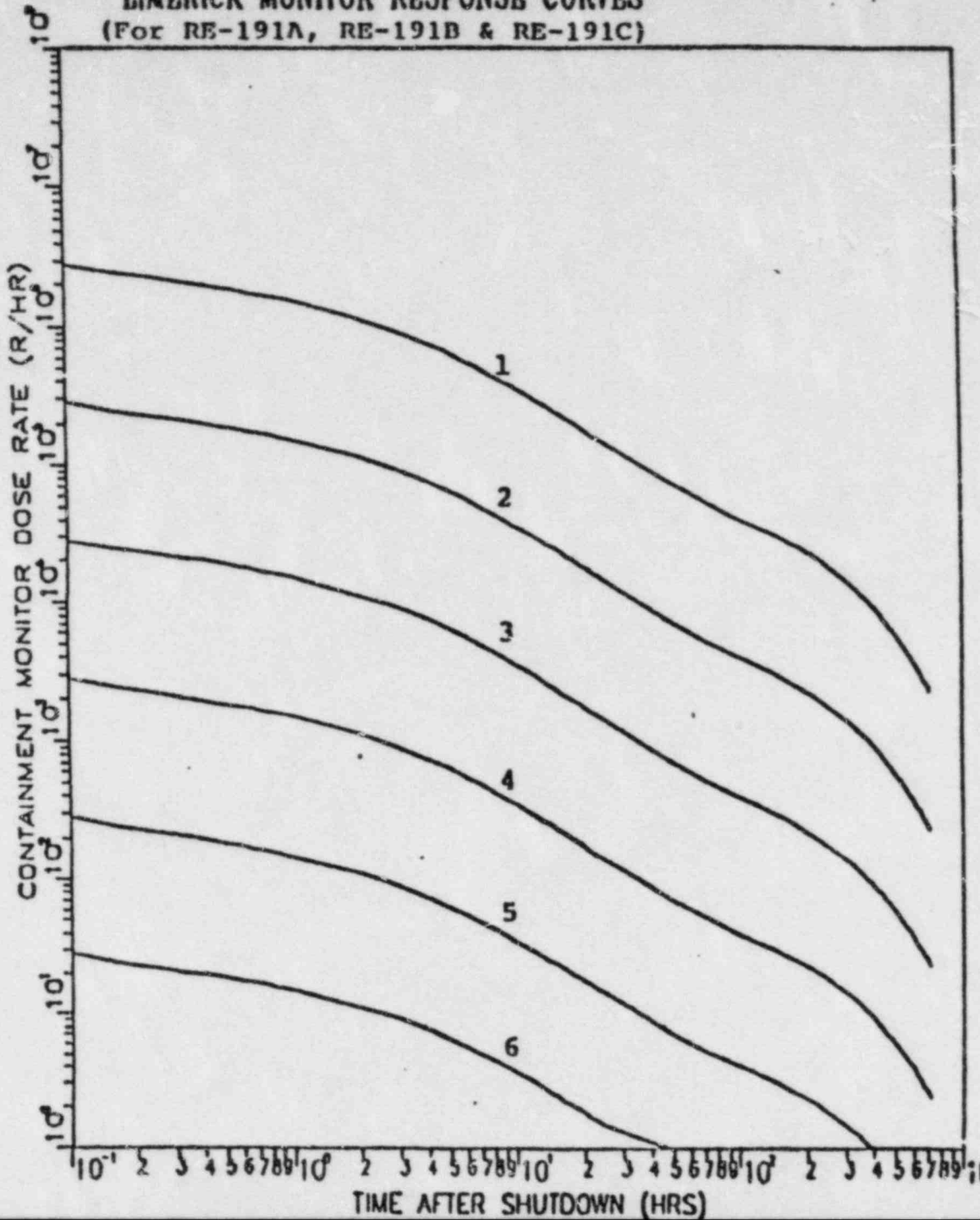
LIMERICK MONITOR RESPONSE CURVES (Az. 148, El. 272 ft.)

(For RE-191D)

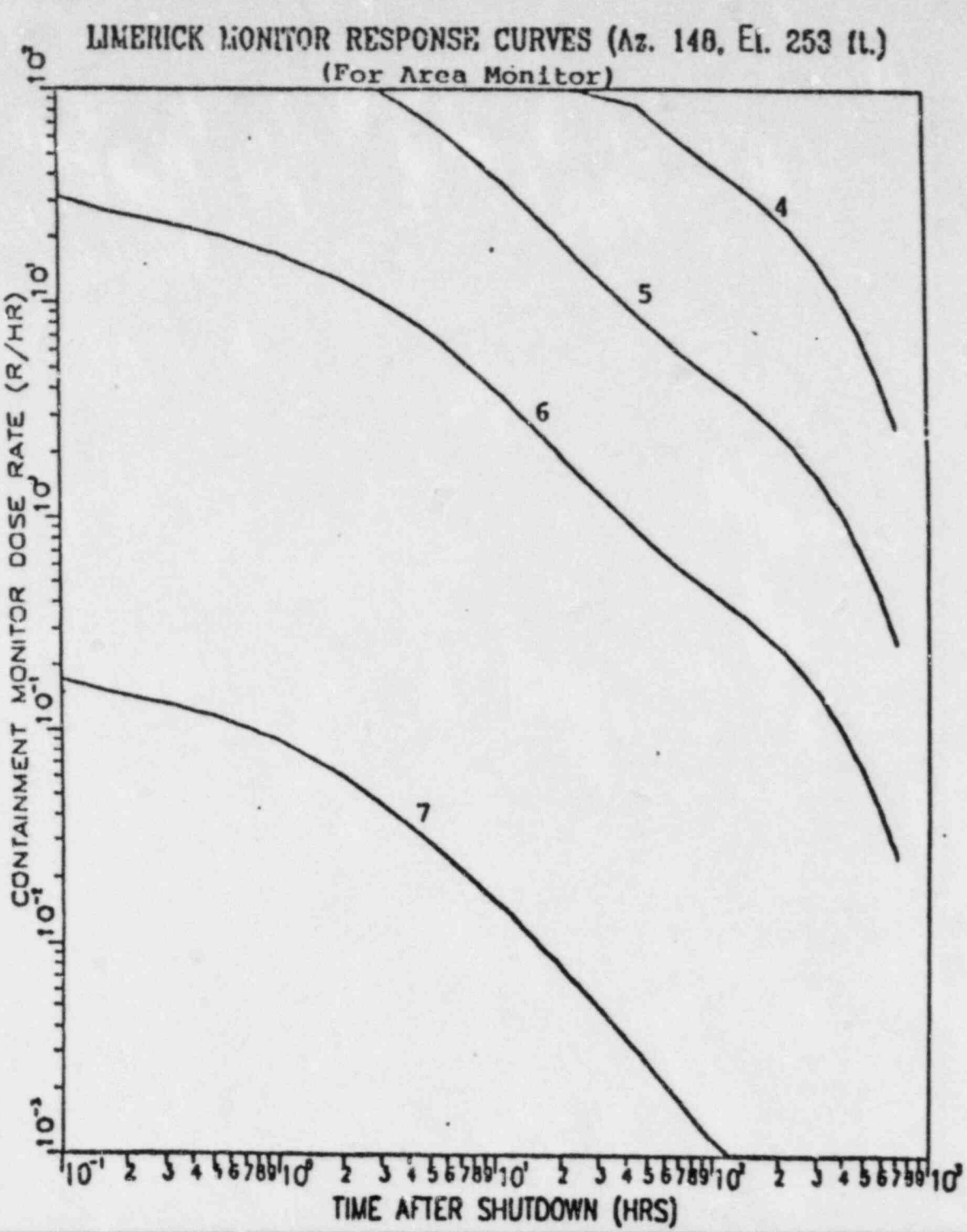


1 - 100% TID
2 - 10% TID
3 - 1.0% TID
4 - 0.1% TID
5 - 0.01% TID
6 - 0.001% TID

LIMERICK MONITOR RESPONSE CURVES
(For RE-191A, RE-191B & RE-191C)



1 - 100% TID
2 - 10% TID
3 - 1.0% TID
4 - 0.1% TID
5 - 0.01% TID
6 - 0.001% TID



4 - 0.1% TID
5 - 0.01% TID
6 - 0.001% TID
7 - 100% REACTOR COOLANT

149999

APPENDIX C

MAPS OF VICINITY OF LIMERICK GENERATING STATION

CONTENT

L

TAB

1980 POPULAT
0 -

DIRECTION	0 - 1	1 MILE SECTOR TOTAL	1 - 2	2 MILE SECTOR TOTAL	2 - 3	3 MILE SECTOR TOTAL	3 - 4	4 MILE SECTOR TOTAL	4 - 5	5 MI SECT TOTA
N	44	44	586	630	627	1,257	397	1,654	753	2,4
NNE	62	62	713	775	245	1,020	478	1,498	161	1,6
NE	27	27	50	77	215	292	289	581	286	8
ENE	27	27	50	77	207	284	410	694	201	8
E	9	9	156	165	398	563	386	949	401	1,3
ESE	38	38	180	218	277	495	251	746	339	1,0
SE	0	0	386	386	159	545	4,806	5,351	3,850	9,2
SSE	6	6	221	227	277	504	2,900	3,404	1,384	4,7
S	3	3	339	342	298	640	118	758	348	1,1
SSW	12	12	502	514	307	821	375	1,196	209	1,4
SW	47	47	165	212	180	392	280	672	286	9
WSW	59	59	212	271	549	820	445	1,265	699	1,9
W	32	32	56	88	1,522	1,610	1,319	2,929	1,381	4,3
WNW	59	59	434	493	2,791	3,284	10,856	14,140	3,095	17,2
NW	0	0	345	345	2,443	2,788	7,406	10,194	1,565	11,7
NNW	21	21	879	900	1,626	2,526	1,497	4,023	1,366	5,3
RING TOTALS:	446		5,274		12,121		32,213		16,324	
RADIAL TOTALS:	0-1		0-2		0-3		0-4		0-5	
	446		5,720		17,841		50,054		66,378	

(1) Based on residential meter count of May, 1980

EP

C-1

N ESTIMATE(1)
MILES

5 - 6	6 MILE SECTOR TOTAL	6 - 7	7 MILE SECTOR TOTAL	7 - 8	8 MILE SECTOR TOTAL	8 - 9	9 MILE SECTOR TOTAL	9 - 10	10 MILE SECTOR TOTAL	MAP SECTOR
581	2,988	558	3,536	586	4,122	529	4,651			
197	1,856	556	2,412	579	2,991	703	3,694	915	5,566	A
180	1,047	634	1,681	938	2,619	1,623	4,242	748	4,442	B
227	1,122	2,012	3,134	1,242	4,376	631	5,007	1,218	5,460	C
487	1,837	1,292	3,129	755	3,884	572	4,456	735	5,742	D
1,124	2,209	1,900	4,109	2,186	6,295	2,387	8,682	1,277	5,733	E
327	9,528	617	10,145	2,525	12,670	976	13,646	1,035	9,717	F
1,351	6,139	3,508	9,647	13,051	22,698	2,676	25,374	2,159	15,805	G
375	1,481	947	2,428	1,050	3,478	398	3,876	443	25,817	H
372	1,777	339	2,116	292	2,408	463	2,871	499	4,375	J
325	1,283	215	1,498	207	1,705	351	2,056	316	3,187	K
248	2,212	431	2,643	149	2,792	794	3,586	310	2,366	L
531	4,841	754	5,595	507	6,102	225	6,327	386	3,972	M
3,951	21,186	702	21,888	1,034	22,922	3,024	25,946	157	6,484	N
638	12,397	1,142	13,539	356	13,895	751	14,646	1,137	27,083	P
1,314	6,703	1,466	8,169	1,499	9,668	689	10,357	1,191	15,837	Q
								1,604	11,961	R
12,228		17,063		26,956		16,792				
0-6		0-7		0-8		0-9		14,130		
78,606		95,669		122,625		139,417		0-10		
								153,547		

DIRECTION	10 - 15	15 - 20	20 -
N	3,644	2,914	15,
NNE	8,345	11,696	22,
NE	4,658	18,366	9,
ENE	6,824	32,869	18,
E	12,787	40,292	22,
ESE	58,034	76,476	170,
SE	33,924	57,673	383,
SSE	9,542	18,073	42,
S	16,312	51,716	12,
SSW	7,332	24,485	10,
SW	1,527	3,075	26,
WSW	2,034	6,296	7,
W	0	3,827	8,
WNW	14,497	114,794	61,
NW	2,918	5,271	10,
NNW	4,081	6,229	11,
RING TOTALS:	188,459	474,052	834,

(1) SOURCES: Pennsylvania Office of State
Projection; New Jersey Office
Planning & Research, Departmen
Projection; Maryland Departmen
Projection; Delaware State Pl

T1001550

Also Available On
Aperture Card

TABLE C-2

POPULATION ESTIMATE(1)
10 - 50 MILES

DISTANCE ... 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	MAP SECTOR
...240	26,718	25,995	18,293	21,271	7,141	A
...719	173,683	83,206	93,587	12,458	24,227	B
...900	6,327	6,106	19,600	16,568	28,835	C
...350	23,306	5,684	14,512	16,167	17,119	D
...401	78,391	4[illegible],514	136,305	221,588	141,476	E
...95	536,807	437,076	188,776	36,749	48,346	F
...14	833,526	324,934	269,719	97,934	15,611	G
...58	202,024	15,625	13,021	12,612	9,967	H
...071	18,741	255,943	93,151	8,381	10,652	J
...030	17,003	6,578	33,202	38,102	11,041	K
...025	12,576	4,234	6,837	9,690	6,129	L
...08	13,8[illegible]	19,986	48,188	101,291	37,064	M
...10	7,924	25,631	19,874	19,259	55,408	N
...43	13,149	8,846	10,798	9,154	18,013	P
...68	7,093	9,546	5,714	24,731	40,094	Q
...99	3,517	3,299	2,757	27,631	7,946	R
...31	1,974,653	1,276,203	974,334	673,586	479,069	

...Planning & Development - March, 1978
...of Business Economics, Division of
...t of Labor and Industry - June, 1978
...t of State Planning - May, 1978
...nning Office - Nov., 1975 Projection

APE...

DIRECTION	10 - 15	15 - 20	20
N	3,644	2,914	15
NNE	8,345	11,696	22
NE	4,658	18,366	9
ENE	6,824	32,869	18
E	12,787	40,292	22
ESE	58,034	76,476	170
SE	33,924	57,673	383
SSE	9,542	18,073	42
S	16,312	51,716	12
SSW	7,332	24,485	10
SW	1,527	3,075	26
WSW	2,034	6,296	7
W	0	3,827	8
WNW	14,497	114,794	61
NW	2,918	5,271	10
NNW	4,081	6,229	11
RING TOTALS:	188,459	474,052	834

(1) SOURCES: Pennsylvania Office of State
Projection; New Jersey Offic
Planning & Research, Departm
Projection; Maryland Departm
Projection; Delaware State P

T1001550

LGS EP

TABLE C-2

1980 POPULATION ESTIMATE(1)
10 - 50 MILES

DISTANCE						
25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	MAP SECTOR
240	26,718	25,995	18,293	21,271	7,141	A
719	173,683	83,206	93,587	12,458	24,227	B
900	6,327	6,106	19,600	16,568	28,835	C
350	23,306	5,684	14,512	16,167	17,119	D
401	78,391	43,514	136,305	221,588	141,476	E
795	536,807	437,076	188,776	36,749	48,346	F
314	833,526	324,934	269,719	97,934	15,611	G
558	202,024	15,625	13,021	12,612	9,967	H
071	18,741	255,943	93,151	8,381	10,652	J
030	17,003	6,578	33,202	38,102	11,041	K
025	12,576	4,234	6,837	9,690	6,129	L
708	13,868	19,986	48,188	101,291	37,064	M
410	7,924	25,631	19,874	19,259	55,408	N
743	13,149	8,846	10,798	9,154	19,013	P
568	7,093	9,546	5,714	24,731	40,094	Q
599	3,517	3,299	2,757	27,631	7,946	R
131	1,974,653	1,276,203	974,334	673,586	479,069	

Planning & Development - March, 1978
of Business Economics, Division of
nt of Labor and Industry - June, 1978
nt of State Planning - May, 1978
nning Office - Nov., 1975 Projection

DIRECTION	10 - 15	15 - 20	20 - 2
N	3,939	3,245	17,68
NNE	9,963	13,938	26,36
NE	5,560	22,586	12,17
ENE	8,147	39,689	23,18
E	15,265	48,098	27,03
ESE	69,276	91,292	178,77
SE	48,067	62,698	370,30
SSE	13,426	24,840	41,04
S	22,953	72,772	14,44
SSW	10,318	34,454	14,11
SW	2,148	4,327	36,62
WSW	2,862	8,283	8,17
W	0	4,136	8,96
WNW	15,668	124,071	66,73
NW	3,153	5,697	11,52
NNW	4,409	6,733	12,64
KING TOTALS:	235,154	566,859	869,81

(1) SOURCES: Pennsylvania Office of State Pl
Projection; New Jersey Office o
Planning & Research, Department
Projection; Maryland Department
Projection; Delaware State Plan

T1001550

LGS EP

TABLE C-3

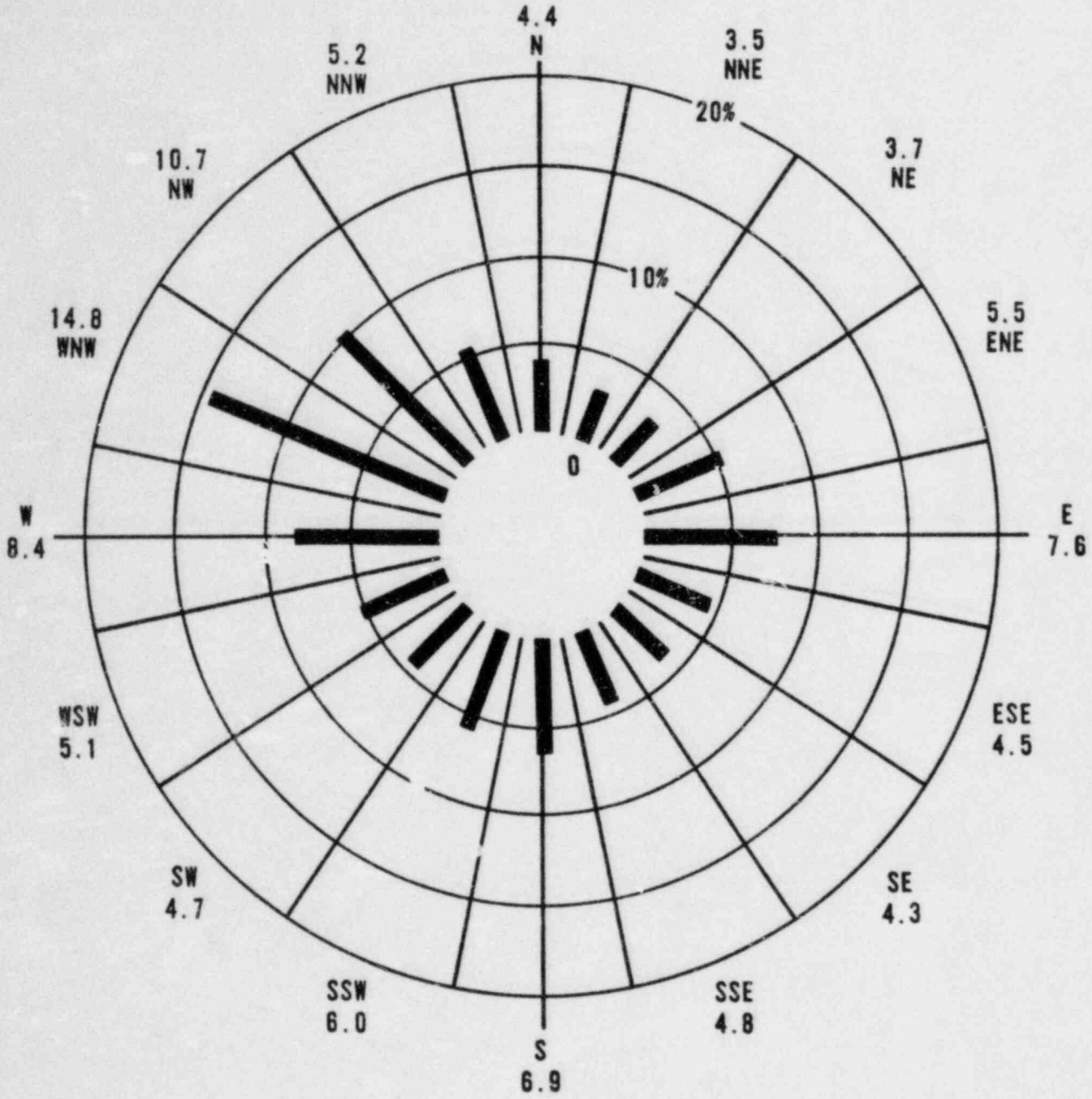
2000 POPULATION ESTIMATE(1)
10 - 50 MILES

DISTANCE

25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	MAP SECTOR
31,006	28,953	20,206	20,469	7,246	A
200,457	89,712	102,379	13,335	26,475	B
7,781	7,509	24,139	20,364	35,544	C
28,661	7,030	18,606	20,730	22,905	D
95,608	53,511	167,620	271,594	175,406	E
497,884	413,702	272,899	55,924	73,576	F
737,984	344,530	324,129	124,393	19,488	G
194,852	21,019	17,978	15,763	11,462	H
23,925	317,563	114,034	10,195	12,250	J
23,925	9,256	42,362	46,672	13,276	K
16,312	5,262	8,030	10,995	7,370	L
14,712	21,201	51,119	107,453	39,318	M
8,406	27,190	21,064	20,370	58,483	N
14,212	9,520	11,501	9,621	18,636	P
7,666	10,284	5,651	24,456	39,647	Q
3,946	3,736	2,727	27,783	7,709	R
1,907,337	1,369,978	1,204,444	799,117	568,791	

nning & Development - March, 1978
Business Economics, Division of
of Labor and Industry - June, 1978
of State Planning - May, 1978
ing Office - Nov., 1975 Projectio

HEIGHT 30FT. ANNUAL AVERAGE
DATA FOR 1/72 - 12/76



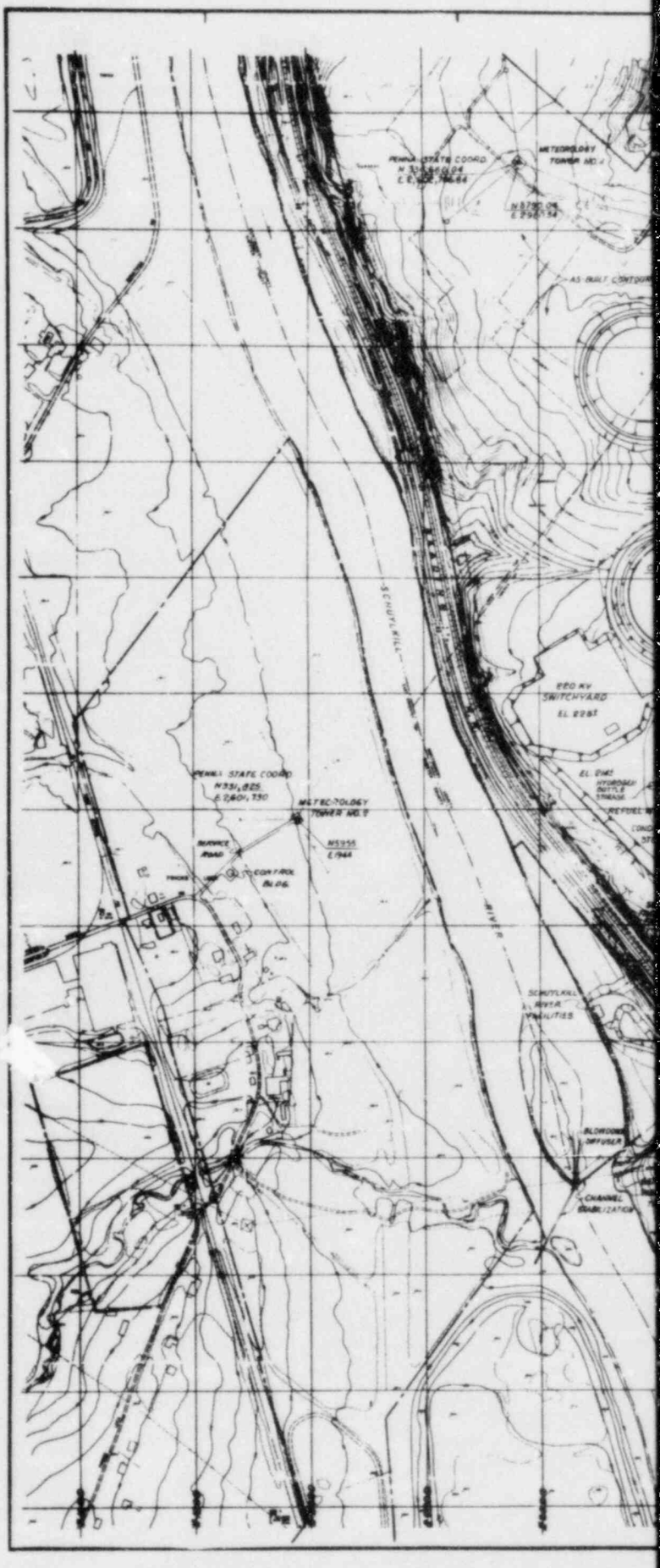
LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

WIND ROSE DATA

FIGURE C-1

IDENTIFIED FEATURES

1. EVACUATION ROUTE TO ROUTE 422.
2. ALTERNATE EVACUATION ROUTE.
3. ASSEMBLY AREA.
4. TECHNICAL SUPPORT CENTER.
5. ALTERNATE ASSEMBLY AREA.
6. EMERGENCY SUPPORT CENTER.



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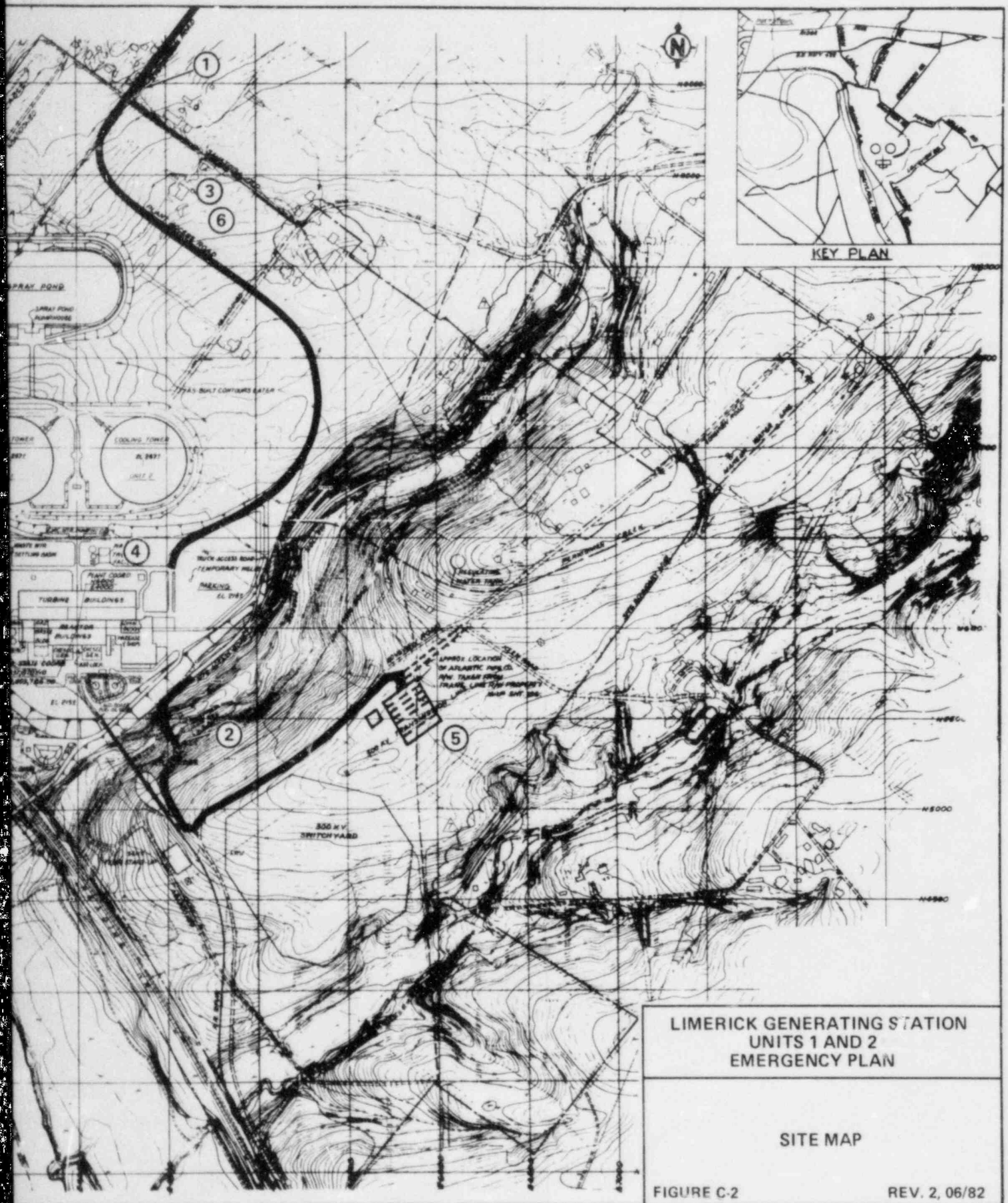
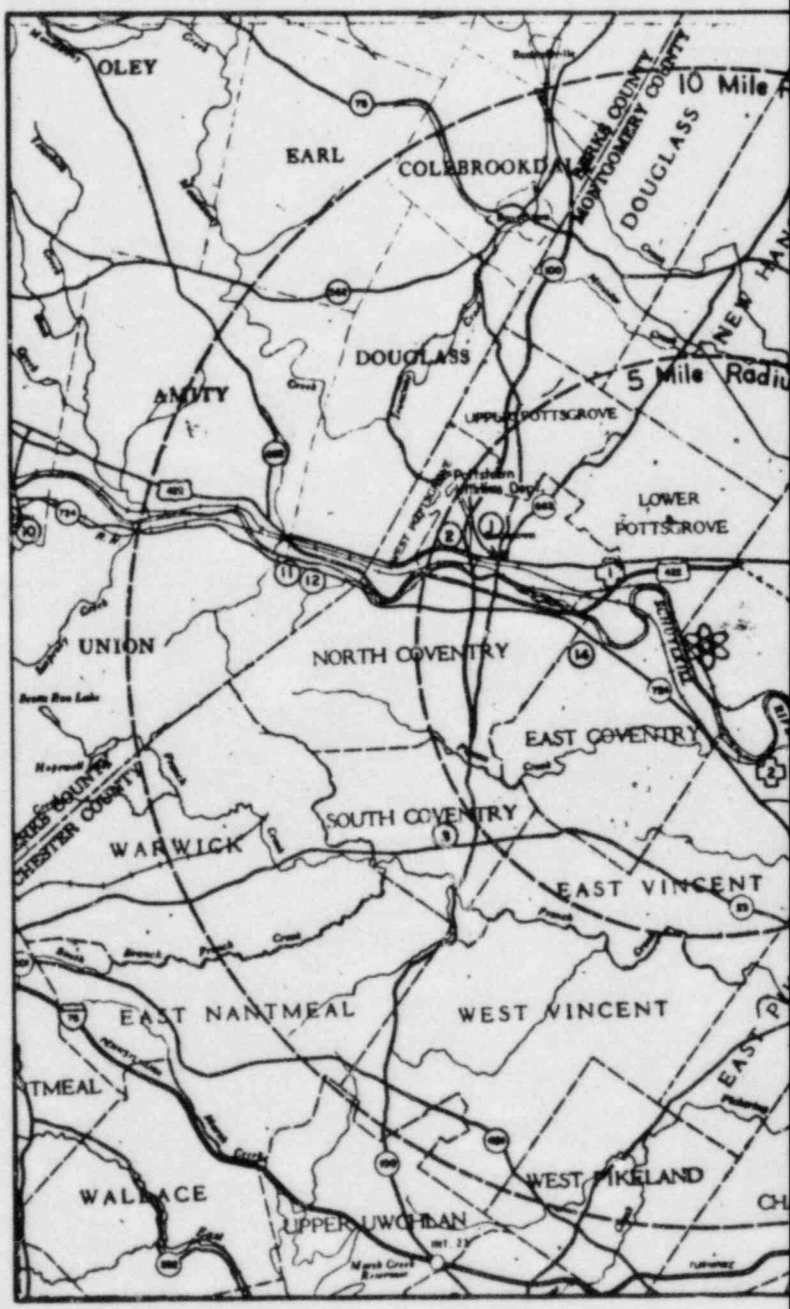
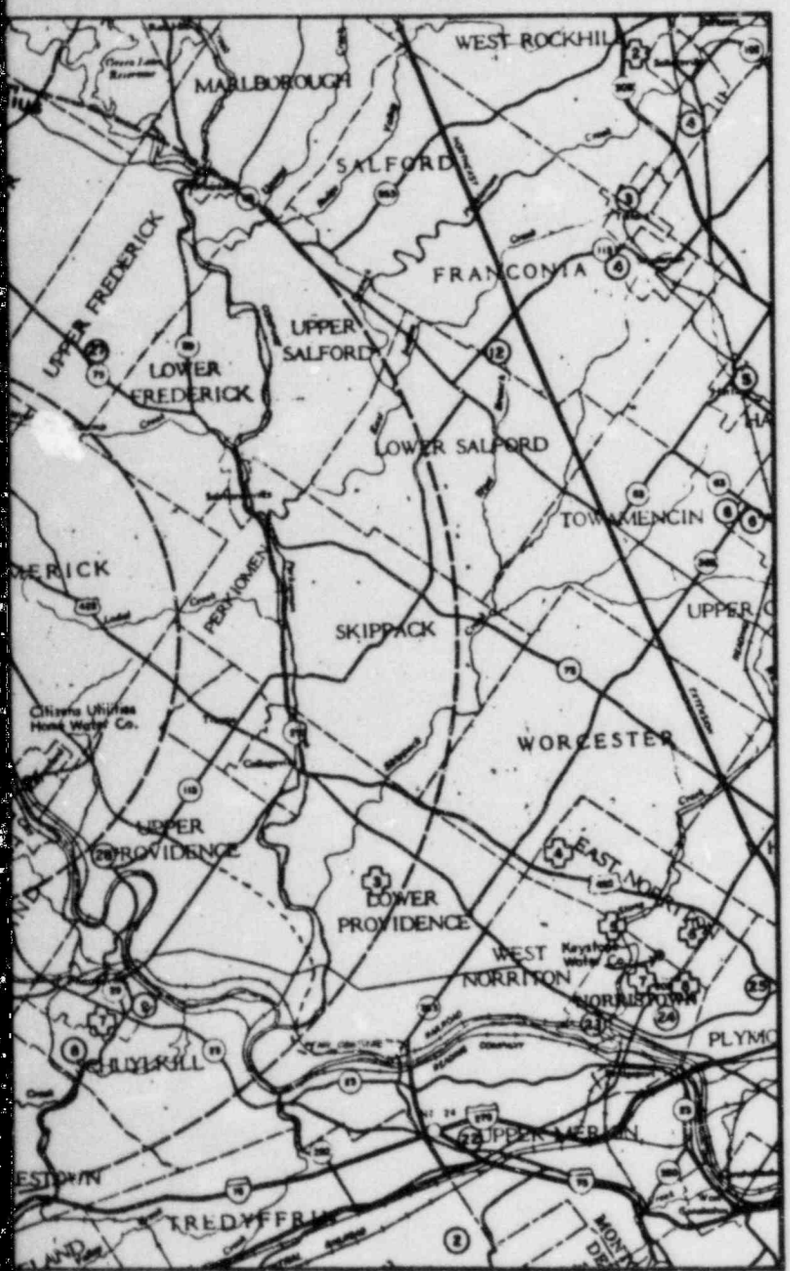


LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

SITE MAP

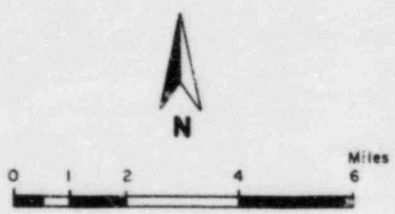
FIGURE C-2 REV. 2, 06/82


OLEY
EARL
COLEBROOKDALE
DOUGLASS
ANNTY
UNION
NORTH COVENTRY
EAST COVENTRY
SOUTH COVENTRY
WARWICK
EAST VINCENT
EAST NANTMEAL
WEST VINCENT
WEST PIKELAND
WALLACE
LOWER POTTSGROVE
UPPER POTTSGROVE
10 Mile
5 Mile
CHESTER COUNTY
MONTGOMERY COUNTY



HOSPITALS

NURSING HOMES



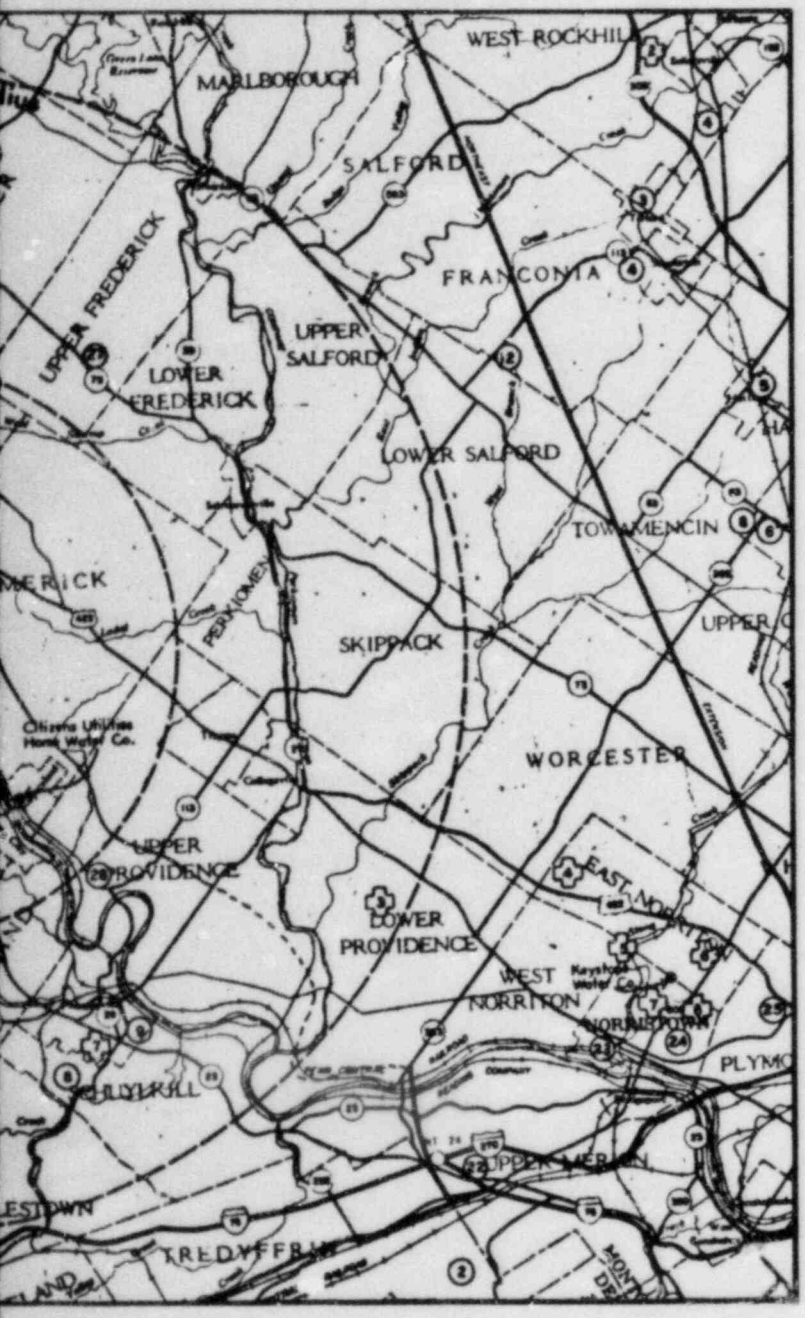
LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

LIMERICK VICINITY

FIGURE C-3 SHEET 1 OF 2

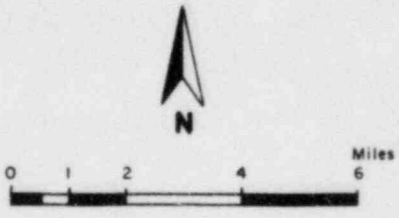

OLEY
EARL
COLEBROOKDALE
MONTGOMERY COUNTY
DOUGLASS
10 Mile R
DOUGLASS
5 Mile Radiu
AMITY
UPPER POTTSGROVE
LOWER POTTSGROVE
UNION
NORTH COVENTRY
EAST COVENTRY
BERKS COUNTY
CHESTER COUNTY
WARWICK
SOUTH COVENTRY
EAST VINCENT
EAST NANTMEAL
WEST VINCENT
WALLACE
WEST PIKELAND
UPPER UWCHLAN

Also Available On
Aperture Card



HOSPITALS

NURSING HOMES



LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

LIMERICK VICINITY

FIGURE C-3 SHEET 1 OF 2

FACILITIES WITHIN 10 MILE EPZ

Symbols: ✚ = Hospital o = Nursing Home

Chester County

Hospitals

Symbol 2 - Pennhurst State Hospital
Symbol 7 - Phoenixville Hospital

Nursing Homes

Symbol 3 - Coventry Manor
Symbol 8 - Mary Hill Rest Haven
Symbol 9 - Phoenixville Manor
Symbol 14 - Manatawny Manor

Montgomery County

Hospitals

Symbol 1 - Pottstown Memorial Medical Center
Symbol 3 - Eagleville Hospital and Rehabilitation Center

Nursing Homes

Symbol 1 - Leader Nursing and Rehabilitation Center
Symbol 2 - Manatawny Manor and Residential Care
Symbol 27 - Frederick Mennonite Home
Symbol 28 - Montgomery County Geriatric and Rehabilitation Center

Berks County

Nursing Homes

Symbol 11 - Douglassville Home
Symbol 12 - River Road Home

LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

LIMERICK VICINITY

FIGURE C-3 SHEET 2 OF 2

DOCUMENT/ PAGE PULLED

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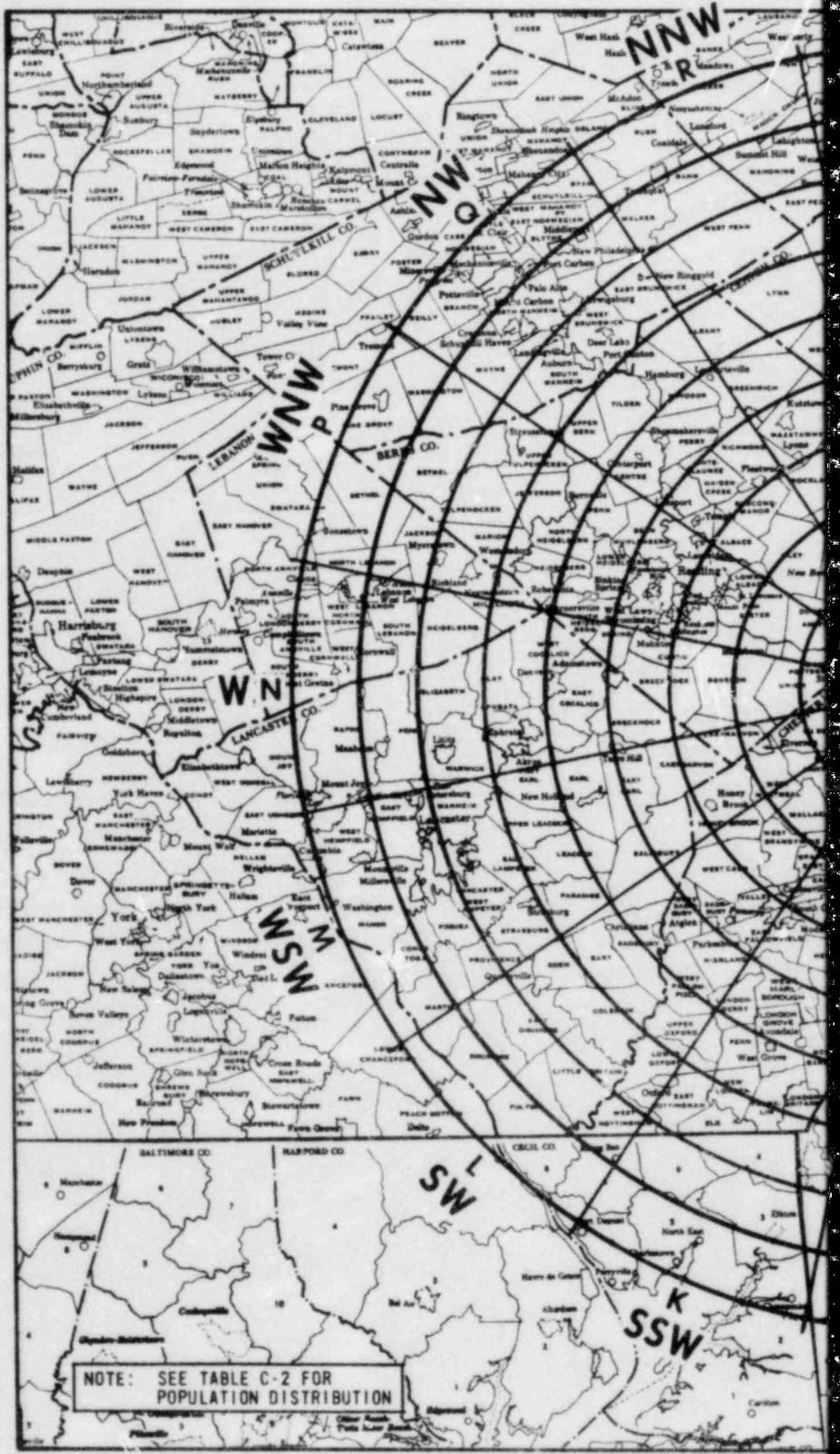
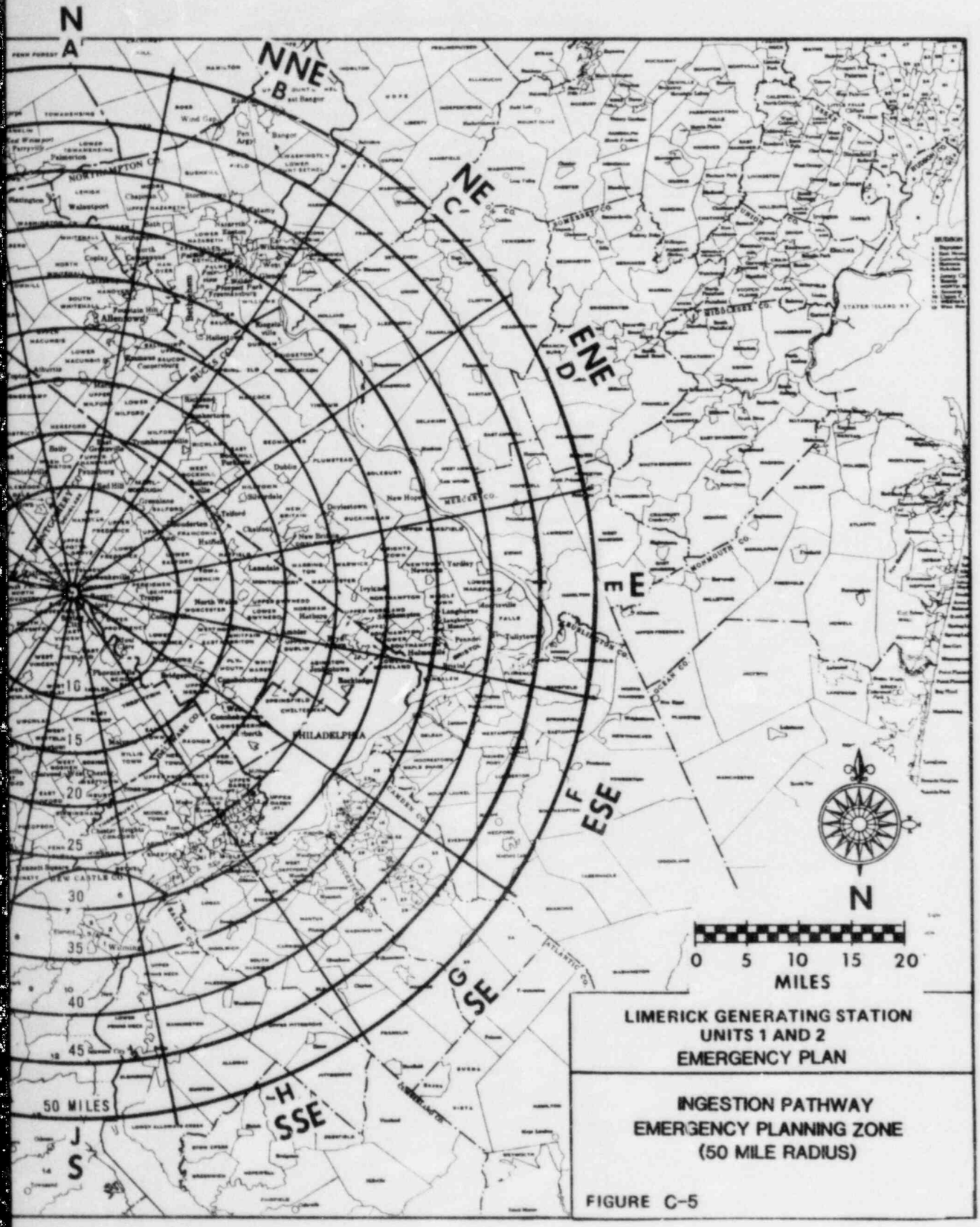

NNW
R
NW
Q
WNW
P
W
N
WSW
M
SW
L
K
SSW
LEBANON
SCHUYLKILL CO.
BERKS CO.
LANCASTER CO.
BALTIMORE CO.
HARFORD CO.
CECIL CO.
Harrisburg
York
NOTE: SEE TABLE C-2 FOR POPULATION DISTRIBUTION

Also Available On
Aperture Card



LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

INGESTION PATHWAY
EMERGENCY PLANNING ZONE
(50 MILE RADIUS)

FIGURE C-5

TI
APERTURE
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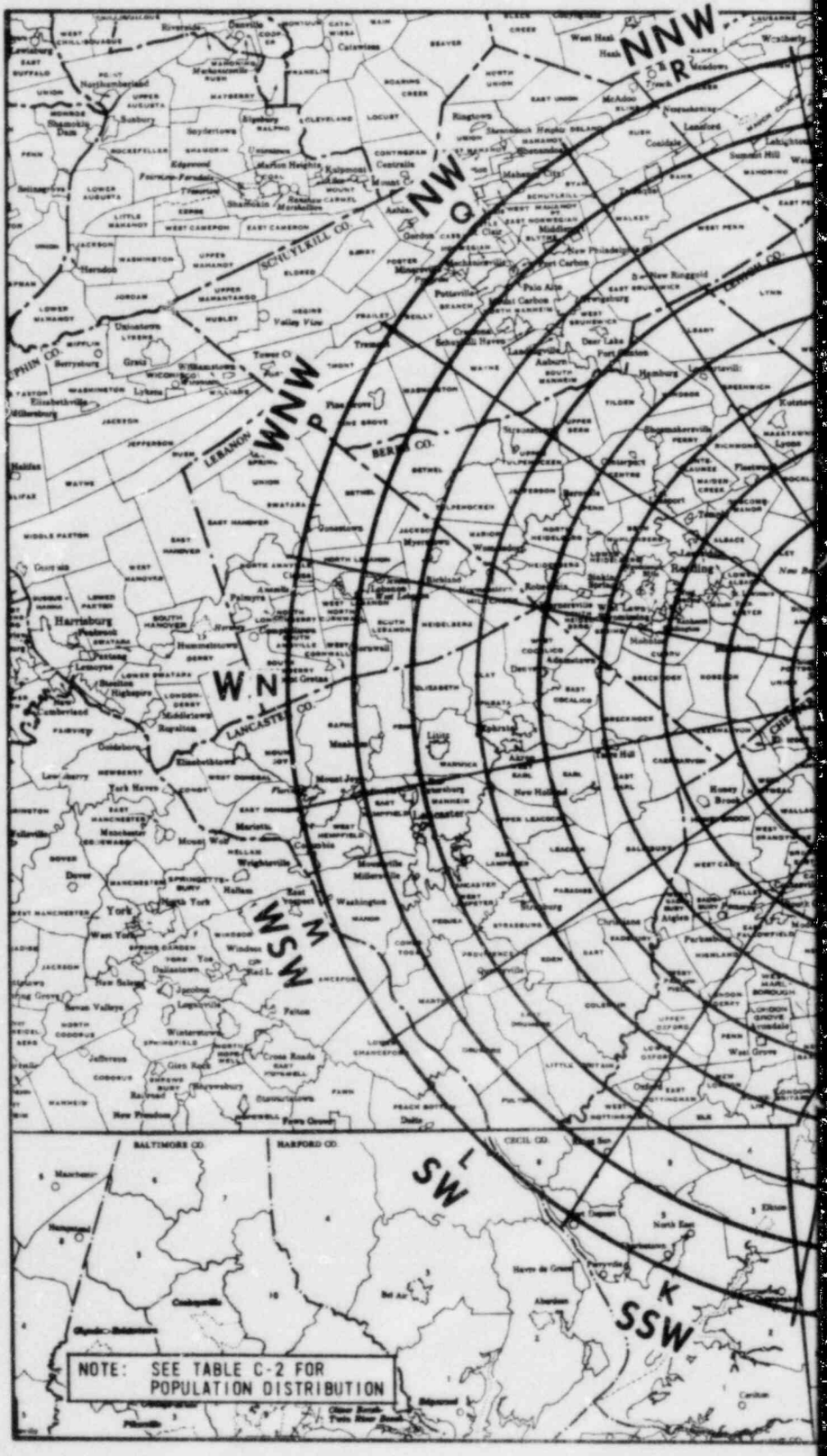
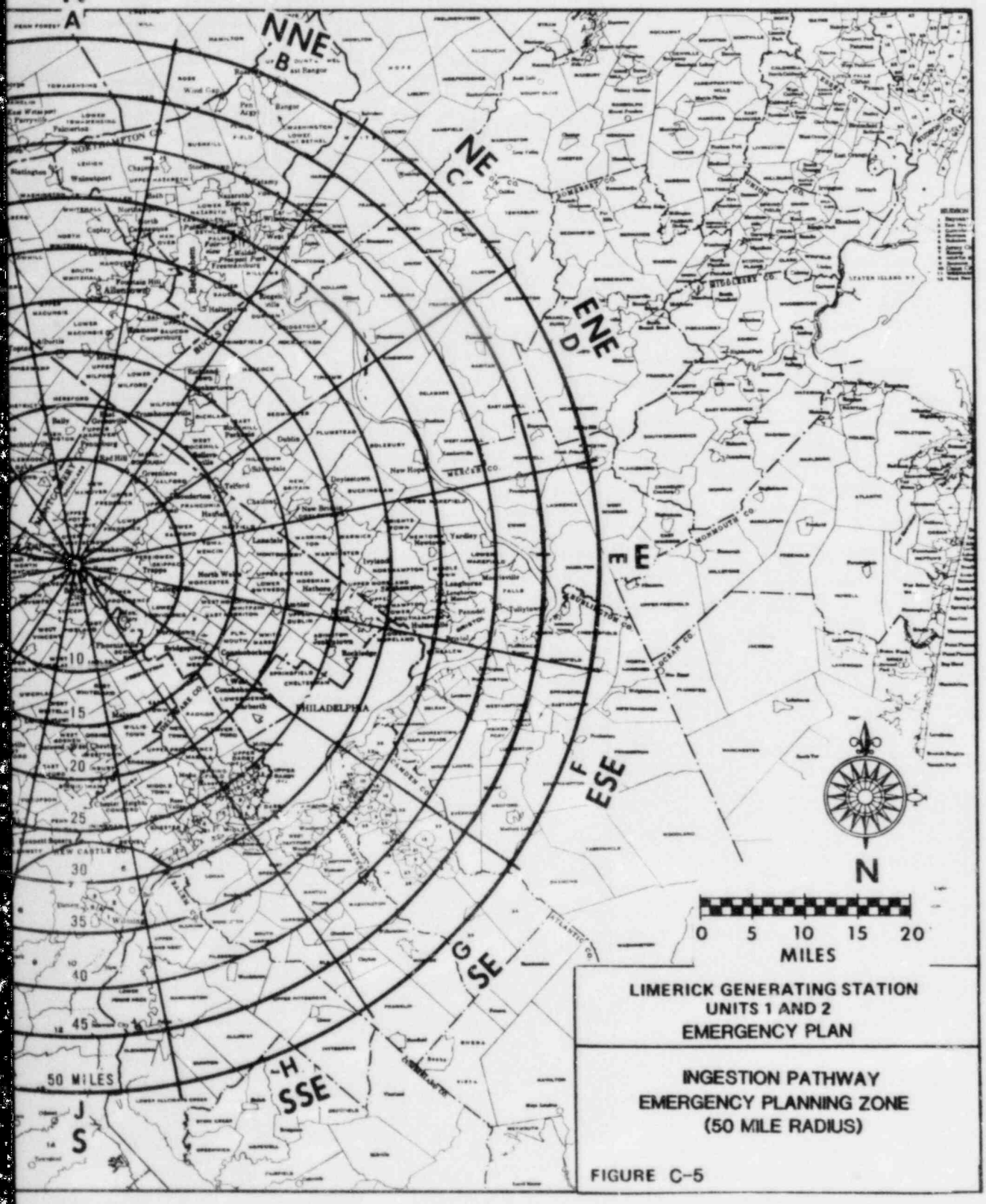

NNW
NW
WNW
W
WSW
SW
SSW
R
Q
P
N
L
K
SCHUYLKILL CO.
LEBANON
BERKS CO.
LANCASTER CO.
BALTIMORE CO.
HARFORD CO.
CECIL CO.
NOTE: SEE TABLE C-2 FOR POPULATION DISTRIBUTION

Also Available On
Aperture Card



LIMERICK GENERATING STATION
UNITS 1 AND 2
EMERGENCY PLAN

INGESTION PATHWAY
EMERGENCY PLANNING ZONE
(50 MILE RADIUS)

FIGURE C-5

APPENDIX D

EMERGENCY PLAN IMPLEMENTING PROCEDURES

The Emergency Plan Implementing Procedures reflect the guidance and criteria established in this Emergency Plan. This Appendix describes the scope and content of the implementing procedures and provides a characteristic listing of procedure titles.

FORMAT AND CONTENT

- Descriptive title, revision number, and date.
- Statement of purpose.
- Responsibilities. A summary of the responsibilities assigned to major positions.
- Appendices. When indicated by the nature of the procedure, checkoff lists or other appropriate forms will be developed to assist the operator or to document completion of required actions.
- Prerequisites. This section defines or explains the conditions which should exist prior to performing the procedure or certain procedural steps.
- Special Equipment. This section describes equipment not in daily use which is needed to perform procedure.
- Symptoms. This section contains symptoms and observations, including alarm signals, which aid operating personnel and others in determining procedures and actions to be implemented.
- Action Levels. When applicable to the scope of the procedure, criteria for implementing actions are provided.
- Precautions. General statements indicating conditions that might present hazards to equipment or personnel.
- Procedure. The procedure specifies the steps to be taken including, as appropriate: assignment of specific responsibilities and authorities for performance of specific tasks to individuals and support groups; methods for coordinating the activities of off-site agencies; precautions applicable to specific steps; protective measures outlined for the identified emergency; instructions for medical treatment and handling of contaminated personnel; special equipment requirements; identification of emergency communication methods; and instructions to achieve safe, stabilized conditions following the emergency.
- References, including Technical Specifications, Emergency Plan, drawings, and other procedures, as applicable.

SCOPE OF PROCEDURAL COVERAGE

| Classification of Emergencies
| Unusual Event Response
| Alert Response
| Site Emergency Response
| General Emergency Response
| Personnel Assembly and Accountability
| Technical Support Center (TSC) Activation
| Operations Support Center (OSC) Activation
| Emergency Operations Facility (EOF) Activation
| Security Team Activation
| Dose Assessment Team
| Radiation Protection Team Activation
| Personnel Dosimetry, Bioassay and Respiratory Protection Group
| Field Survey Group
| Chemistry Sampling and Analysis Team Activation
| Operation of Post-Accident Sampling Systems
| Obtaining Drywell/Suppression Pool Gas Samples from Containment Gas Sampling and Analyzing System
| Retrieving and Changing Sample Filters and Cartridges from the Containment Leak Detector During Emergencies
| Obtaining Containment Gas Samples from the Containment Leak Detector Return Line During Emergencies
| Obtaining Reactor Water Samples from Sample Sinks Following Accident Conditions
| Obtaining Cooling Tower Blowdown Line Water Samples Following Radioactive Liquid Release After Accident Conditions
| Obtaining the Iodine and Particulate Samples from the North and South Stack Following Accident Conditions
| Obtaining Liquid Radwaste Samples from Radwaste Sample Sink Following Accident Conditions
| Obtaining Off-Gas Samples from the Air Ejector/Holdup Pipe Discharge
| Sample Preparation and Chemical Analysis of Highly Radioactive Liquid Samples
| Sample Preparation and Analysis of Highly Radioactive Particulate Filters and Iodine Cartridges
| Sample Preparation and Analysis of Highly Radioactive Gas Samples
| Personnel Safety Team Activation
| Plant Survey Group
| Search and Rescue/First Aid
| Vehicle and Evacuee Control Group
| Vehicle Decontamination

| Fire Fighting Group
| Damage Repair Group
| Philadelphia Electric Company Officials
| Limerick Station Supervision
| Radiation Protection Team Phone List
| Fire and Damage Team Phone List
| Personnel Safety Team Phone List
| Security Team Phone List
| Emergency Operations Facility Group Phone List
| Technical Support Center Group Phone List
| Corporate Emergency Team Leader and Support Personnel
| Government and Emergency Management Agencies
| Company Consultants and Contractors
| Nearby Public and Industrial Users of Downstream Waters
| Staffing Augmentation - 60 Minute Call Procedure
| Chemistry Sampling and Analysis Team Phone List
| Dose Assessment Team Phone List
| Operating the Evacuation Alarm and Pond Page System
| Local Evacuation
| Partial Plant Evacuation
| Site Evacuation
| Evacuation of the Information Center
| Reception and Orientation of Support Personnel
| Radioactive Liquid Release
| Distribution of Thyroid Blocking (KI) Tablets
| Cumulative Population Dose Calculations
| Determination of Protective Action Recommendations
| Liquid Release Dose Calculation Method for Drinking Water
| Fish Ingestion Dose Pathway Calculation Method
| Use of the Containment Radiation Monitor to Estimate Release Source Term
| Entry for Emergency Repair, Operations and Search and Rescue
| Emergency Response Facilities Habitability
| Fuel Damage Estimation
Review and Revision of Emergency Plan

APPENDIX E

EQUIPMENT LISTINGS

The following is a listing of typical equipment available for use during emergencies. While specific equipment designations and items may be subject to change, equivalent emergency activity capabilities will be maintained. Implementing procedures define the specific locations, types, and amounts of equipment for emergency use and define requirements for applicable surveillance, testing, maintenance, and inventory activities to ensure that the equipment is in a state of readiness.

Off-site Monitoring Equipment (Technical Support Center)

- Map of the area showing preferred sample points
- Battery powered air sampler
- Air filter media and sample envelopes
- Record sheets for sample and survey information
- Swipe and smear papers and envelopes
- Pens, pencils, and paper
- Flashlights and replacement batteries
- Survey meters
- Applicable equipment instructions
- Appropriate communication equipment (such as walkie-talkie)

On-site Monitoring Equipment

Equipment maintained by Health Physics in the plant and equipment maintained in the Technical Support Center may be used for on-site monitoring.

Emergency Operations Facility Equipment

Decontamination kit including:

- Gloves
- Detergent
- Swabs
- Hand brushes
- Decontamination chemicals
- Nasal swipes
- Lanolin
- Razor and blades
- Fingernail file
- Scissors
- Tweezers
- Pens, pencils, and paper

Assessment equipment including:

Maps and overlays/nomographs for dose projection and evaluation
Walkie-talkies
Self-reading dosimeters
Maps showing preferred sample points
First-aid kit
Survey meters
Anti-contamination clothing
Respiratory equipment
Emergency Plan and appropriate implementing procedures
Set of P&IDs and appropriate floor plans and sections

Control Room Equipment

Set of P&IDs and appropriate floor plans and sections
Emergency Plan and implementing procedures
Self-reading dosimeters
Respiratory Equipment
Anti-contamination clothing
Portable lighting
Walkie-talkies

Operations Support Center Equipment

Respiratory equipment
Anti-contamination clothing
Portable lighting
Survey meters
Record sheets for survey and sample information
Swipe and smear papers and envelopes
Pens, pencils, and paper
Equipment maintained by Health Physics in the plant may be used.

APPENDIX F

MESSAGE FORMATS

CONTENT

UNUSUAL EVENT NOTIFICATION MESSAGE

Message: This (is)(is not) a drill. This (is)(is not) a drill. This is Limerick Generating Station calling to report an Unusual Event. Please connect me with the appropriate authority. This is Limerick Generating Station calling to report an Unusual Event has been declared on Unit No. ____. Time and date of Unusual Event classification are _____, _____. The basic problem is _____. The plant status is (stable)(improving) (degrading)(not known). There (has been)(has not been) an (airborne)(liquid) radioactive release from the plant. There is no protective action recommended. My name is _____. This (is)(is not) a drill. This (is)(is not) a drill.

ALERT NOTIFICATION MESSAGE

MESSAGE: This (is)(is not) a drill. This (is)(is not) a drill. This is Limerick Generating Station calling to report an Alert has been declared on Unit No. ____. Time and date of Alert classification are _____, _____. The basic problem is _____. The plant status is (stable) (improving) (degrading) (not known). There (is presently) (has not been) (is potential for) (has been) a radioactive (airborne) (liquid) release from the plant. Recommended protective actions are (none) _____. The affected population is (none) _____. My name is _____. This (is) (is not) a drill. This (is) (is not) a drill.

SITE EMERGENCY NOTIFICATION MESSAGE

MESSAGE: This (is) (is not) a drill. This (is) (is not) a drill. This is Limerick Generating Station calling to report a Site Emergency has been declared on Unit No. ____. Time and date of Site Emergency Classification are _____, _____. The basic problem is _____ _____. The plant status is (stable) (improving) (degrading) (not known). There (is presently) (has not been) (is potential for) (has been) a radioactive (airborne) (liquid) release from the plant. Recommended protection actions are (none) _____. The affected population area is (none) _____. My name is _____. This (is) (is not) a drill. This (is) (is not) a drill.

GENERAL EMERGENCY NOTIFICATION MESSAGE

MESSAGE: This (is) (is not) a drill. This (is) (is not) a drill. This is Limerick Generating Station calling to report a General Emergency has been declared on Unit No. ____. Time and date of General Emergency classification are _____, _____. The basic problem is _____. The plant status is (stable) (improving) (degrading) (not known). There (is presently) (has not been) (is potential for) (has been) a radioactive (airborne) (liquid) release from the plant. Recommended protective actions are (none) _____. The affected population area is (none) _____. My name is _____. This (is) (is not) a drill. This (is) (is not) a drill.

LGS EP

EXHIBIT F-1

UNUSUAL EVENT

NOTIFICATION FORMAT

Complete the format and then read to each agency to ensure consistency.

"This is Limerick Generating Station calling to report an Unusual Event. This is not (repeat not) an emergency. My name is: _____. My plant position is: _____. You may authenticate this message by return call to our pre-arranged number. The Unit(s) involved is: _____. The event occurred/was noted at: (time) _____ on (date) _____.

Event Description: _____

_____

_____

Radioactive Release Data: ☐ No abnormal release has occurred. ☐ An abnormal release has occurred, but has stopped. ☐ An abnormal release is continuing.
☐ An abnormal release is expected to occur.
☐ The release is/was gaseous. Wind speed/direction are: _____.
☐ The release is/was liquid. Schuylkill River flowrate is: _____.

Assistance already obtained by Limerick: ☐ None ☐ Linfield Fire Co.
☐ Ambulance Service ☐ Local physician called to plant. ☐ Patients transported to _____ hospital.

Assistance/action requested of Counties/PEMA: ☐ None ☐ Other _____

_____

_____

Name of call recipient at Montgomery County: _____ Time/Date: _____

Name of call recipient at Chester County: _____ Time/Date: _____

Name of call recipient at Berks County: _____ Time/Date: _____

Name of call recipient at PEMA: _____ Time/Date: _____

Record comments/questions from recipients on reverse side.

LGS EP

EXHIBIT F-2

ALERT

NOTIFICATION FORMAT

Complete the format and then read to each agency to ensure consistency.

"This is Limerick Generating Station calling to report an Alert (repeat Alert) condition. My name is: _____. My plant position is: _____. You may authenticate this message by return call to our pre-arranged number. The Unit(s) involved is: _____. The event occurred/was noted at: (time) _____ on (date) _____.

Event Description: _____

_____

_____

Radioactive Release Data: ☐ No abnormal release has occurred. ☐ An abnormal release has occurred, but has stopped. ☐ An abnormal release is continuing. ☐ An abnormal release is expected to occur. ☐ The release is/was gaseous. Wind speed/direction are: _____. ☐ The release is/was liquid. Schuylkill River flowrate is: _____.

Off-Site Consequences: have been ☐ estimated ☐ measured and are below (repeat below) State guidelines for taking protective action for the public; ☐ have not been estimated or measured."

Assistance already obtained by Limerick: ☐ None ☐ Linfield Fire Co. ☐ Ambulance Service ☐ Local physician called to plant ☐ Patients transported to _____ hospital.

Assistance/action requested of Counties/PEMA: ☐ None ☐ Other _____

_____

_____

Name of call recipient at Montgomery County: _____ Time/Date: _____

Name of call recipient at Chester County: _____ Time/Date: _____

Name of call recipient at Berks County: _____ Time/Date: _____

Name of call recipient at PEMA: _____ Time/Date: _____

Name of call recipient at NRC: _____ Time/Date: _____

Record comments/questions from recipients on reverse side.

LGS EP

EXHIBIT F-3

SITE AREA EMERGENCY AND GENERAL EMERGENCY

NOTIFICATION FORMAT

Complete the format and then read to each agency to ensure consistency.

"This is Limerick Generating Station calling to report a ☐ Site Area ☐ General Emergency which requires your agency to activite its emergency operations center. My name is: _____. My plant position is: _____. You may authenticate this message by return call to our pre-arranged number. The Unit(s) involved is: _____. The event occurred/was noted at: (time) _____ on (date) _____.

Event Description: _____

_____

_____

Radioactive Release Data: ☐ No abnormal release has occurred. ☐ An abnormal release has occurred, but has stopped. ☐ An abnormal release is continuing. ☐ An abnormal release is expected to occur. ☐ The release is/was gaseous. Wind speed/direction are: _____.

Off-Site Consequences: have been ☐ estimated ☐ measured; ☐ have not been estimated or measured.

Protective Actions for the Public: ☐ No action is recommended at this time; ☐ Other: _____

Name of call recipient at Montgomery County: _____ Time/Date: _____

Name of call recipient at Chester County : _____ Time/Date: _____

Name of call recipient at Berks County : _____ Time/Date: _____

Name of call recipient at PEMA : _____ Time/Date: _____

Name of call recipient at NRC : _____ Time/Date: _____

Record comments/questions from recipients on reverse side.