LILCO

LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

May 27, 1981

SNRC-568

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Emergency Plan
Shoreham Nuclear Power Station - Unit 1
Docket No. 50-322

Dear Mr. Denton:

Enclosed herewith are sixty (60) copies of the revised Shoreham Emergency Plan. This Plan is submitted in response to NUREG-0737, Items numbered III.A.1.1 and III.A.2, Emergency Preparedness.

Very truly yours,

Original signed by
J. P. NOVARRO

J. P. Novarro
Project Manager
Shoreham Nuclear Power Station

JPM:mp

Enclosures

cc: J. Higgins

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

LONG ISLAND LIGHTING COMPANY

May 1981

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

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SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 1

1.0 DEFINITIONS

1.1 Alert

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

1.2 Assessment Actions

Those actions taken during or after an accident to obtain and process information necessary to make decisions to implement specific emergency measures and procedures.

1.3 Corrective Actions

Those emergency measures taken to mitigate or terminate an emergency situation at or near the origin of the problem in order to prevent an uncontrolled release, or reduce the magnitude of the release, of radioactive materials.

1.4 Dedicated Lines

Those secured telephone lines used for emergency communications between specific Company emergency facilities, See Section 7.2.2.

1.5 DOE

The U. S. Department of Energy.

1.6 Design Basis Accident (DBA)

A particular loss of coolant accident for which all safety aspects of the station are designed.

1.7 Drill

The implementation of a procedure or sequence of procedures for the purpose of training and demonstration. A component or components of an exercise.

1.8 Emergency Action Levels (EAL)

Radiological dose rates (specific contamination levels of airborne, waterborne or specific deposited concentrations of radioactive materials) as well as other parameters that may be used as thresholds for initiating such specific emergency measures as designating a particular class of emergency, initiating a notification sequence, decontamination, or any associated protective action. The four classifications of EALs are as follows:

1. Unusual Event
2. Alert
3. Site Area Emergency
4. General Emergency

1.9 Emergency Actions

A collective term encompassing any or all of the assessment, corrective, and protective actions taken during the course of an emergency.

1.10 Emergency Director (ED)

That position responsible for the initial classification of an emergency, and direction of Plant Operations and Technical Support elements.

1.11 Emergency News Center (ENC)

That facility designated as the location for the coordinated release of information to the public and media regarding an emergency and those actions, if any, that are to be taken.

1.12 Emergency Operations Facility (EOF)

That offsite support center activated during emergency conditions to provide management of overall licensee emergency response; coordination of radiological and environmental assessment; determination of recommended public protective actions; coordination of emergency response activities with Federal, State and local agencies; and management of overall recovery operations.

1.13 Emergency Plan Implementing Procedures (EPIP)

The emergency response procedures implemented to direct the onsite response and initiate activation of the corporate and offsite response to an emergency situation.

1.14 Emergency Planning Coordinator (EPC)

That LILCO employee whose normal responsibilities include the coordination and negotiation of emergency preparedness activities.

1.15 Emergency Planning Zones (EPZ)

1. That area delineated by sectors within a 10 mile radius circle around the Shoreham Nuclear Power Station used for the pre-planning of protective actions due to a

potential exposure to airborne radioactive materials through inhalation and/or external exposure (Plume Exposure EPZ).

2. That area delineated by a 50 mile radius circle around the Shoreham Nuclear Power Station used for the pre-planning of protective actions due to a potential internal exposure from the ingestion of radioactive materials through the food pathway (Ingestion EPZ).

1.16 Exclusion Area

That area within a 1,000 foot radius of the centerline of the reactor building, under direct control and ownership of the Long Island Lighting Company.

1.17 Exercise

A predetermined scenario that permits the evaluation of the response to a given situation.

1.18 FEMA

The Federal Emergency Management Agency.

1.19 FSAR

The Final Safety Analysis Report.

1.20 General Emergency

Events are in progress or have occurred which involve an actual or imminent substantial core degradation or melting with potential for loss of containment integrity.

1.21 Headquarters

Those offices of the Long Island Lighting Company located at 175 East Old Country Road, Hicksville, New York, 11801.

1.22 Hotline

The primary mode of notification to Federal, State and local agencies in the event of an emergency condition at the Shoreham Nuclear Power Station.

1.23 LCO

Limiting Condition for Operation.

1.24 LILCO

Long Island Lighting Company.

1.25 LOCA

Loss of Coolant Accident.

1.26 National Alert Warning System (NAWAS)

The mode of communication to be used as the primary means of backup to the Hotline.

1.27 NRC

U. S. Nuclear Regulatory Commission.

1.28 NYSDOH

New York State Department of Health.

1.29 NYSEOC

New York State Emergency Operations Center, located in the substructure of the Public Security Building, State Office Building Campus, Albany, New York.

1.30 Offsite

That area outside of the Protected Area surrounding the Shoreham Nuclear Power Station.

1.31 Onsite

That area within the Protected Area surrounding the Shoreham Nuclear Power Station.

1.32 Operational Support Center (OSC)

That on-site facility activated during emergency conditions for the purpose of providing a location where operations support personnel shall assemble and plant logistic support can be coordinated.

1.33 Plant Assembly Areas

Those specific locations designated for the assembly and accountability of personnel in the event of an emergency.

1.34 Population at Risk

Those persons for whom protective actions are, or would be, taken.

1.35 Primary Sector

That part of the 10 mile EPZ in which immediate protective action may be taken during a severe radiological emergency and corresponds to the 22½° sector(s) which bounds the existing downwind direction.

1.36 Projected Dose

The radioactive dose which the Population at Risk may potentially receive if no protective actions are taken.

1.37 Protective Action Guides (PAG)

Projected radiological dose or dose commitment to individuals in the general population that warrant protective action following a release of radioactive materials established by EPA.

1.38 Protective Actions

Those emergency measures taken before or after an uncontrolled release of radioactive materials has occurred for the purpose of preventing or minimizing radiological exposures to persons that would likely occur if the actions were not taken.

1.39 Recovery Activities

Those actions taken after or during an emergency to restore the station's affected areas to a pre-emergency condition (i.e., a condition in which the plant has been returned to a normal operations status and no further specific emergency related corrections or modifications are needed).

1.40 Recovery Manager

The Recovery Manager is the Vice President-Nuclear who reports directly to the President of the Long Island Lighting Company for the duration of a nuclear emergency. He is responsible for the management of recovery operations and other support functions from the EOF. The Recovery Manager is the senior Company official who has the requisite authority and technical knowledge to manage the nuclear power station recovery operations. He has the full authority to make the required decisions regarding accident mitigation or plant recovery without consultation with higher management.

1.41 Site Boundary

The periphery that bounds the secured portion of the Shoreham Nuclear Power Station.

1.42 Site Area Emergency

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public.

1.43 Site Evacuations

Evacuations of part or all nonessential personnel from protected and/or nonprotected areas of the site.

1.44 SNPS

Shoreham Nuclear Power Station.

1.45 Technical Support Center (TSC)

That onsite facility activated during emergency conditions to provide plant management and technical support to plant operations personnel as well as assuming peripheral duties and communications not directly related to reactor system manipulations.

1.46 Thyroid Exposure

Radiation exposure to the thyroid through inhalation or ingestion of radioactive materials.

1.47 Unusual Event

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive materials requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

1.48 Whole Body Exposure

Direct external radiation exposure to the body from airborne radioactive materials, contamination, and/or direct radiation.

SHOREHAN NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 2

2.0 SCOPE AND APPLICABILITY

2.1 Purpose and Guidance

This section of the Shoreham Nuclear Power Station (SNPS) Emergency Plan describes the Long Island Lighting Company's (LILCO) plans for coping with emergencies that may arise at the Power Station. The purpose of this plan is to safeguard plant personnel, protect public health and safety, and prevent damage to property in the event of an emergency involving any inadvertent radioactive releases. This plan was developed with the guidance of the documents listed in Appendix A.

The basic objectives of the SNPS Emergency Plan are first, to provide guidelines to define potential types of emergencies; second, to provide procedures to cope with an emergency; third, to establish an organization to manage an emergency; fourth, to provide the facilities to carry out the selected measures; fifth, to provide for a recovery program following an emergency; and sixth, to provide methods for maintaining the Emergency Plan as an active and current document.

The SNPS Emergency Plan has been designed to be independent of other emergency plans developed by the Company. Specific provisions of the Company's Electric Emergency Restoration Procedure, Fuel Oil Spill Procedure, and Civil Disturbance Plan will be integrated into the SNPS Emergency Plan where appro-

priate. Such provisions include the following:

1. Mobilization and utilization of Company personnel;
2. Mobilization of Emergency Communications within the Company and the communities;
3. Notification procedures, Company, community and government agencies; and
4. Public Information.

2.2 Inter-Relationships

The detailed procedures implementing the emergency actions taken by the appropriate plant personnel are set forth in the Emergency Plan Implementing Procedures. Other plant procedures that may play a role in emergency situations include:

1. Station Emergency Operating Procedures which describe the appropriate actions for operators in dealing with abnormal or accident situations somehow affecting the operation of the plant.
2. Station Health Physics Procedures which provide detailed guidance to the emergency teams in performing tasks of radiation monitoring and control based on training of personnel in the proper use of protective clothing, respiratory equipment and instrumentation. These procedures are also the basis for insuring the operability and calibration of necessary equipment and instrumentation through periodic testing.
3. Contingency Security Emergency Implementing Procedures, where applicable, set forth the duties of security personnel during emergency situations.

Changes to the procedures listed above will be evaluated regarding their impact on the SNPS Emergency Plan and Emergency Plan Implementing Procedures. Any adverse impact will then be adressed in order to satisfy any resulting inconsistencies.

The SNPS Emergency Plan is consistent with, and complimentary to, the Corporate Nuclear Emergency Response Plan, the Corporate Nuclear Emergency Communications Plan and their respective implementing procedures.

An integral part of protective action planning is the role played by Suffolk County and New York State who, together, would be responsible for any offsite protective actions necessary to ensure the safety of the general public. Letters of agreement from the County and State are contained in Appendix B. The State and County Contracts are contained in Appendix C. The "New York State Emergency Plan for Major Radiation Accidents involving Nuclear Facilities" was submitted to FEMA on January 2, 1981 by Consolidated Edison and the Power Authority of the State of New York for Indian Point Units 2 and 3.
All written agreements pertaining to the operation of the SNPS Emergency Plan will be reviewed, at a minimum, every year and revised as necessary by the Emergency Planning Coordinator or his designate.

The SNPS Emergency Plan is formulated to be compatible with existing County, State and Federal agencies or organizations which have, or would have, emergency related responsibilities. It is intended to provide, in an organized format, an overview which reflects a combination of the various plans and procedures given above.

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 3

3.0 SUMMARY OF EMERGENCY PLAN

This plan describes the actions to be taken by the Long Island Lighting Company (LILCO) in the event of an emergency at the Shoreham Nuclear Power Station (SNPS). Included in the plan are descriptions of the onsite and offsite emergency organizations and facilities, guidelines for the assessment of the emergency situation, protective/corrective actions and delineation of authority of the various support functions.

SNPS, scheduled for commercial operation in 1983, is located in the Town of Brookhaven, Suffolk County, New York, on the north shore of Long Island approximately 50 miles down the length of Long Island Sound from the East River. The site comprises approximately 499 acres, all of which is owned by LILCO. The developed portion of the site, including the Station structures, occupies approximately 80 acres and is located in the northern sector. The developed portion of the site is bounded by Long Island Sound on the north, by marshland on the east, by North Country Road on the south, and by the parcel of land known as Shoreham West (an area approximately 429 acres in size that is entirely owned by LILCO) to the west. In accordance with 10 CRF 100, Section 11, an "exclusion area" with a 1,000 foot radius of the centerline of the reactor, which is entirely owned by LILCO and a "low population zone" of a 2-mile radius, have been chosen.

Support of local, State and Federal emergency organizations are included in the overall emergency planning effort (Figure 3-1). County, State and Federal agencies having lead responsibilities in this plan are:

1. New York State Department of Health (NYSDOH) - The Disaster Preparedness Commission (DPC) by order of the Governor is responsible for overall State emergency preparedness. Under the auspices of the DPC, the NYSDOH is the lead agency in radiological emergencies. The NYSDOH shall initiate the activation of all necessary monitoring, assessment and evaluation personnel, equipment and other resources.
2. Suffolk County Department of Emergency Preparedness (SCDEP) - The statutory authority to initiate the Suffolk County Radiological Response Organization belongs to the County Chief Executive. The implementation of the County's Radiological Emergency Response Plan is the responsibility of the County Emergency Operations Director (EOD). The Director, Department of Emergency Preparedness, has been authorized to function as the County's EOD.
3. U. S. Nuclear Regulatory Commission (NRC) - the NRC is responsible for providing emergency planning criteria, verifying that the appropriate emergency plans are in compliance with the criteria and conducting investigations in the event of a radiological emergency.

4. U. S. Federal Emergency Manangement Agency (FEMA)

   FEMA is responsible for supervising offsite planning and coordinating this planning with the NRC and thereby making recommendations to the NRC as to whether state and county plans meet the requirements of Federal rules and regulations. In addition, FEMA has lead responsiblity for all offsite nuclear emergency response and is also charged with coordinating all Federal emergency planning and assistance functions.

5. U. S. Department of Energy (DOE) - The DOE is responsible for providing emergency operations to assist State and local governments in protecting the health and safety of individuals, the public and the environment in the event of a radiological emergency.

Detailed provisions are made for implementing protective actions against direct radiation exposure and inhalation of radioactive material for the public within a radius of 10 miles from the site (plume exposure pathway). Additional preventive actions may be taken beyond the plume exposure pathway to preclude ingestion pathway exposures (50 mile radius).

The Shoreham Plume Exposure Pathway is totally within Suffolk County and is composed of parts of three towns: Brookhaven, Riverhead and Southampton.

The area within a 50 mile radius of the Shoreham site, the Ingestion Pathway Emergency Planning Zone (EPZ), includes nearly all of Nassau and Suffolk Counties and parts of four additional counties within New York State as well as all or parts of six counties in the State of Connecticut. The following counties are within the ingestion EPZ:

County	State
Suffolk	New York
Nassau	New York
Queens	New York
Bronx	New York
Putnam	New York
Westchester	New York
Fairfield	Connecticut
Middlesex	Connecticut
New Haven	Connecticut
New London	Connecticut
Hartford	Connecticut
Litchfield	Connecticut

The NRC has established, and this plan adopts, four classes of Emergency Action Levels for nuclear power plants. The four classes of Emergency Action Levels are:

1. Unusual Event - Unusual events are in progress or have

occurred which indicate a potential degradation of the level of safety of the plant.

2. Alert - Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant.
3. Site Area Emergency - Events are in progress or have occurred which involve actual or likely failures of plant functions needed for protection of the public.
4. General Emergency - Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.

The mechanisms by which this plan provides for the proper response to emergency conditions at Shoreham include:

1. Initiation - The first plant individual who becomes aware of an emergency condition, ensures that notification is made and details are provided to the Control Room. Initial action is taken in accordance with plant operating procedures. The Watch Engineer on shift shall serve as the interim Emergency Director until such time as he is properly relieved by the Plant Manager or his designated alternate.
2. Assessment - The Emergency Director is responsible for evaluating, classifying and declaring an emergency condition. For each of the four emergency classifications, extensive and

continuing assessment actions will be taken for the purposes of:

(a) identification and characterization of the incident;

(b) prediction of offsite doses, if any, resulting from the incident;

(c) notification or verification for offsite authorities;

(d) determination of appropriate measures; and

(e) indication of escalation, reduction, or termination of emergency.

3. Corrective Action - Detailed operating procedures and emergency operating procedures are utilized by the plant operating personnel to assist them in recognizing potential or actual emergency events. The Emergency Director is responsible for notifying offsite emergency organizations and for providing protective action recommendations to authorities responsible for implementing offsite emergency measures. Upon initiation of an emergency, personnel essential to emergency operations shall respond, as designated by their emergency position descriptions.

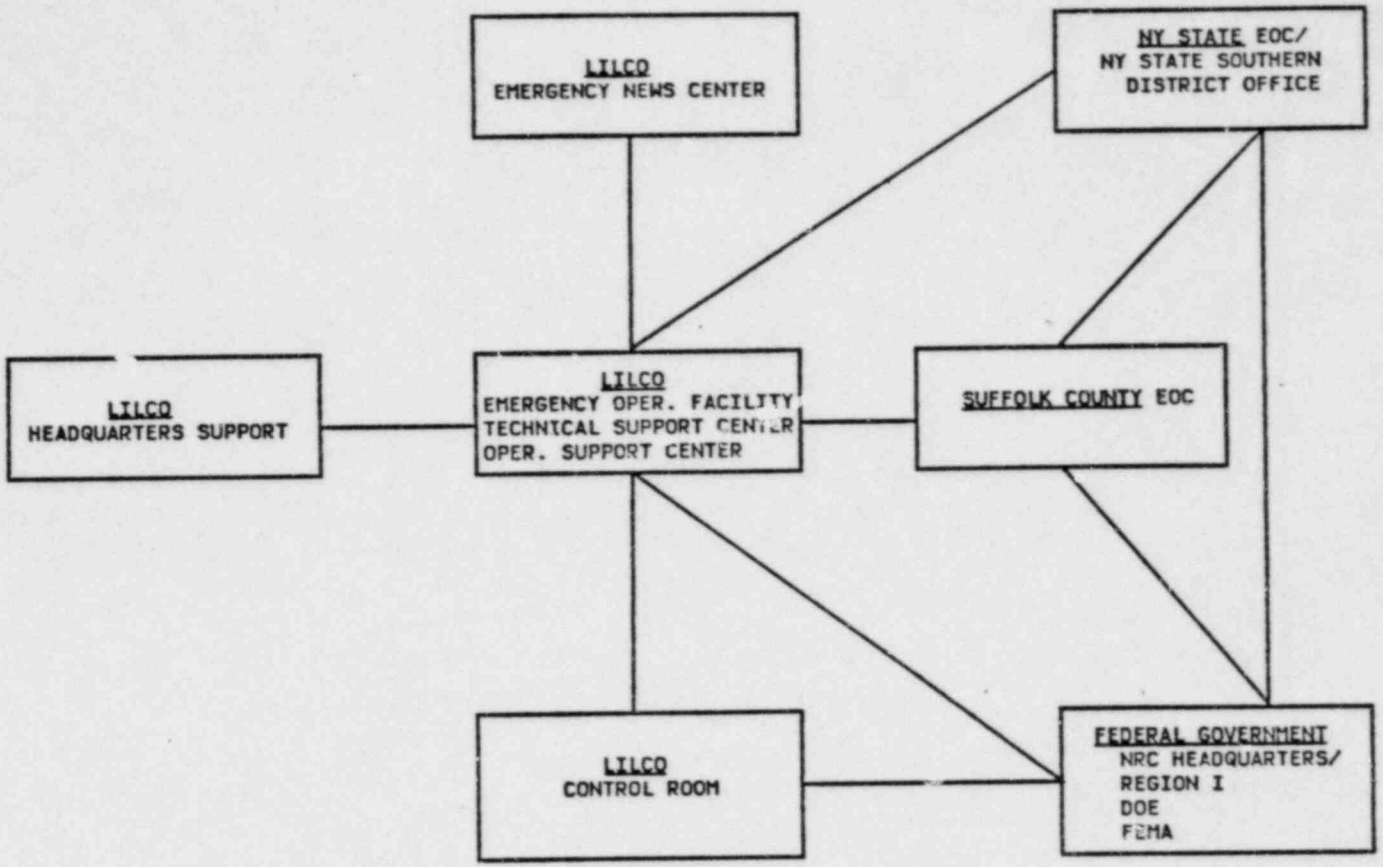
4. Protective Action

(a) Plant Site - Upon assessment by the Engineering Director that an emergency situation exists that requires evacuation of areas of the plant, a warning signal and an announcement will be made of the emergency condition over the public address system indicating the areas to be evacuated.

(b) Offsite - The initiation and implementation of pro-

York State and Suffolk County agencies. LILCO's responsibilities include the timely notification of agencies; assessment activities including dispatch of radiation monitoring teams needed to verify the off-site consequences of radiation releases; and the provision of information needed by the cognizant governmental agencies for estimating offsite risks.

5. Recovery - Recovery operations will utilize the emergency response organizations discussed in Section 5.0. Recovery actions will be pre-planned in order to limit exposures. Headquarters' management, administrative, and technical personnel can provide additional technical support during planning and reentry/recovery operations.



INTERRELATIONSHIPS OF PRINCIPLE ORGANIZATIONS
FIGURE 3 - 1

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 4

4.0 EMERGENCY CONDITIONS

The following guidelines describe the criteria used by station personnel in classifying or determining the type of an emergency. The types of potential accidents can be numerous and vary in magnitude. Accordingly, this classification system is wide in range, although flexible and straight forward, to reflect this need. There are a total of four classifications. The classification system is not intended to include permissible deviations during normal operation.

4.1 Classification System

Four classes of Emergency Action Levels are established by the various associated examples of initiating conditions. These classes are:

1. Unusual Event
2. Alert
3. Site Area Emergency
4. General Emergency

The rationale for the Unusual Event and Alert classes is to provide early and prompt notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. A gradation is provided to assure fuller response preparations for more serious

indicators. In an Alert, Site Area Emergency or General Emergency situation, mobilization of emergency personnel is indicated. The Site Area Emergency class reflects conditions where some significant releases are likely, or are occurring, but where a core melt situation is not indicated based on current information. The General Emergency class involves actual or imminent substantial core degradation or melting with a potential for a loss of containment. The immediate action for this class is sheltering (staying inside) rather than an evacuation until as assessment can be made that (1) an evacuation is indicated, and (2) an evacuation, if indicated, can be completed prior to a significant release and transport of radioactive material to the affected areas.

4.1.1. Action Level Criteria

The Emergency Action Level Criteria are as follows:

1. Radioactive Effluent - Applicable to any Release Point and Resulting from any Initiating Event
2. Release or Loss of Control of Radioactive Material within the Plant
3. Reactor Coolant System (RCS) Temperature and/or Pressure Recordings High and/or Low
4. RCS Leak
5. Main Steamline (MSL) Break
6. Fuel Cladding Degradation
7. RCS Safety/Relief Valve Failure

8. Initiation of ECCS
9. Loss of Containment Integrity
10. Loss of Engineered Safety or Fire Protection Features
11. Failure of Reactor Protection System to Initiate or Complete a Scram
12. Loss of Indicators, Annuciators or Alarms
13. Control Room Evacuation
14. Toxic or Flammable Gases
15. Security Compromise
16. Loss of Onsite AC Power or Loss of Off-Site Power
17. Loss of Onsite Vital DC Power
18. Storm
19. Earthquake
20. Flood
21. Fire
22. Explosion
23. Aircraft
24. Contaminated Injury
25. Nearby Nuclear Emergency

4.1.2 Initiating Conditions

The example initiating conditions listed include those Emergency Action Levels to which they may be applicable and form the basis for establishing specific station instrumentation readings which, if exceeded, will initiate a given emergency class.

1. Radioactive Effluent - Application to any Release Resulting From any Initiating Event - (Under Development)

2. Release or Loss of Control of Radioactive Material Within The Plant - (Under Development)

3. Reactor Coolant System (RCS) Temperature and/or Pressure Recordings High and/or Low

   (a) Unusual Event - Condition: Abnormal coolant temperature and/or pressure or abnormal fuel temperatures outside technical specification limits.

   (b) Alert - Not applicable.

   (c) Site Area Emergency - Not applicable.

   (d) General Emergency - Not applicable.

4. RCS Leak

   (a) Unusual Event - Condition: Exceeding reactor coolant system leak rate technical specification.

   (b) Alert - Condition: Reactor coolant system leak rate greater than 50 gpm.

   (c) Site Area Emergency - Condition: Known loss of coolant accident greater than makeup pump capacity; this is a LOCA but with ECCS functioning.

   (d) General Emergency - Conditon: Other plant conditions exist, from whatever source, that make release of large amounts of radioactivity in a

short time period possible; e.g., any core melt condition.

Condition: Transient (e.g., loss of offsite power) plus failure of requisite core shutdown systems (e.g., scram or standby liquid control system). Could lead to a core melt in several hours with containment failure likely. More severe consequences if pump trip does not function.

5. Main Steam Line (MSL) Break

(a) Unusual Event - Not applicable.

(b) Alert - Condition: Steam line break within drywell with Main Steam Isolation Valve (MSIV) failure to close.

Condition: Coolant pump seizure leading to fuel failure.

(c) Site Area Emergency - Condition: Steam line break outside containment without isolation.

(d) General Emergency - Not applicable.

6. Fuel Cladding Degradation

(a) Unusual Event - Condition: Off-gas air ejector monitor reading corresponding to greater than 500,000 μCi/sec of fission products after a 30-minute decay.

Condition: Increase in off-gas air ejector fission product activity of greater

than 100,000 μCi/sec within a 30-minute period.

(b) Alert - Condition: Severe loss of fuel cladding High off-gas ejector (greater than 5 Ci/sec).

Condition: Severe loss of fuel cladding. Very high coolant activity sample.

(c) Site Area Emergency - Condition: Inadequate core cooling results in fuel cladding degradation leading to a possible loss of coolable geometry.

(d) General Emergency - Condition: Loss of 2 out of 3 fission product barriers (fuel cladding, primary coolant boundary and containment) with serious potential loss of the third barrier.

7. RCS Safety/Relief S/R Valve Failure

(a) Unusual Event - Condition: Failure of the S/R valve to close within 5 minutes.

(b) Alert - See 4.1.2.4.

(c) Site Area Emergency - See 4.1.2.4.

(d) General Emergency - See 4.1.2.4.

8. Initiation of ECCS

(a) Unusual Event - Condition: Emergency Core Cooling System (ECCS) initiated and discharged to vessel.

(b) Alert - Not applicable.

(c) Site Area Emergency - Not applicable.

(d) General Emergency - Not applicable.

9. Loss of Containment Integrity

(a) Unusual Event - Condition: Loss of Containment Integrity exceeding Technical Specifications requires plant shutdown.

(b) Alert - Not applicable.

(c) Site Area Emergency - Condition: Containment pressure exceeds LCO.

(d) General Emergency - Condition: Failure of containment following fuel cladding failure and loss of primary coolant boundary.

10. Loss of Engineered Safety or Fire Protection Features

(a) Unusual Event - Condition: Loss of engineered safety feature or fire protection system function requiring shutdown by technical specifications (e.g., because of malfunction, personnel error or procedural inadequacy).

(b) Alert - Not applicable.

(c) Site Area Emergency - Not applicable.

(d) General Emergency - Not applicable.

11. Failure of Reactor Protection System to Initiate or Complete a Scram

(a) Unusual Event - Condition: Failure of the reactor protection system (RPS) to initiate and complete a scram which brings the reactor subcritical.

(b) Alert - Condition: Loss of functions needed for plant cold shutdown.

(c) Site Area Emergency - Not applicable.

(d) General Emergency - Not applicable.

12. Loss of Indicators, Annuciators or Alarms

(a) Unusual Event - Condition: Indicators of parameters do not function in control room to an extent requiring plant shutdown or other significant loss of assessment or communication capability.

(b) Alert - Not applicable.

(c) Site Area Emergency - Condition: Loss of all control room alarms/annunciators for 15 minutes. Loss of all process and effluent monitors sustained longer than 15 minutes with the plant in any condition other than cold shutdown. Loss of process and effluent monitors accompanied by an uncontrolled transient.

(d) General Emergency - Not applicable.

13. Control Room Evacuation

(a) Unusual Event - Not applicable.

(b) Alert - Condition: Evacuation of control room anticipated or required with control of shutdown systems established from local stations.

(c) Site Area Emergency - Condition: Evacuation of control room and control of shutdown systems not established from local stations in 15 minutes.

(d) General Emergency - Not applicable.

14. Toxic or Flammable Gases - (Under Development)

15. Security Compromise - (Under Development)

16. Loss of On-Site AC Power or Loss of Off-Site Power

(a) Unusual Event - Condition: Loss of on-site AC power capability.

Condition: Loss of offsite power.

(b) Alert - Condition: Temporary (less than 15 minutes) loss of AC power and temporary loss of offsite power.

(c) Site Area Emergency - Condition: Loss of offsite power and loss of onsite AC power for more than 15 minutes.

(d) General Emergency - Not applicable.

17. Loss of Onsite Vital DC Power

(a) Unusual Event - Not applicable.

(b) Alert - Condition: Loss of all onsite DC power.

(c) Site Area Emergency - Condition: Loss of all vital onsite DC power for more than 15 minutes.

(d) General Emergency - Not applicable.

18. Storm

(a) Unusual Event - Condition: Storm watch with probable impact on the plant:

(1) Weather Bureau Advisories

(2) Personnel Sighting

(3) Information from NAWAS.

(b) Alert - Condition: Storm winds near design basis levels.

(c) Site Area Emergency - Condition: Storm winds greater than design basis levels or failure of protection of vital equipment at lower levels.

(d) General Emergency - Not applicable.

19. Earthquakes

(a) Unusual Event - Condition: Earthquake detected on station seismic instrumentation resulting in less than 0.1g acceleration.

(b) Alert - Condition: Earthquake greater than 0.1g, acceleration. Operational Base Earthquake (OBE) level occurs.

(c) Site Area Emergency - Condition: Earthquake greater than 0.2g, Safe Shutdown Earthquake (SSE) level occurs.

(d) General Emergency - Not applicable.

20. Flood

(a) Unusual Event - Condition: Flood watch with probable closure of designated evacuation routes.

(b) Alert - Condition: Flood occurs at near design basis level (26 feet mean low water level) or a low water level that impairs cooling capability exists.

(c) Site Area Emergency - Condition: Flood greater than design basis level (26 feet mean low water level) or failure of protection of vital plant equipment exists.

(d) General Emergency - Not applicable.

21. Fire

(a) Unusual Event - Conditions:

(1) Offsite fire nearby and posing threat to the plant.

(2) Onsite fire not under control within 10 minutes of initial firefighting attempts.

(b) Alert - Condition: Fire potentially affecting safety

systems.

(c) Site Area Emergency - Condition: Fire affecting safety systems.

(d) General Emergency - Not applicable.

22. Explosion

(a) Unusual Event - Condition: Explosion inside security protected area with no significant damage to plant facilities.

(b) Alert - Condition: Explosion with known damage to facility and affecting safe plant operation.

(c) Site Area Emergency - Condition: Explosion with significant damage to safe shutdown equipment.

(d) General Emergency - Not applicable.

23. Aircraft

(a) Unusual Event - Conditions:

(1) Aircraft crash onsite

(2) Unusual aircraft activity over facility

(b) Alert - Condition: Aircraft or missile strikes a plant structure.

(c) Site Area Emergency - Condition: Aircraft crash affects vital structures by impact or by fire.

(d) General Emergency - Not applicable.

24. Contaminated Injury

(a) Unusual Event - Condition: Transportation of injured and/or contaminated individual(s) from the plant for hospital treatment.

(b) Alert - Not applicable.

(c) Site Area Emergency - Not applicable.

(d) General Emergency - Not applicable.

25. Nearby Nuclear Emergency

(a) Unusual Event - Not applicable.

(b) Alert - Condition: Emergency conditions at the Brookhaven HFBR which could affect Shoreham.

(c) Site Area Emergency - Not applicable.

(d) General Emergency - Not applicable.

4.2 Emergency Plan Implementing Procedures

Titles of this Emergency Plan Implementing Procedure are as follows:

Title

Emergency Organizations

Emergency Response Facilities

Communications Equipment

Notifications

Conditions for Emergency Action Levels

Unusual Event

Alert

Site Area Emergency

General Emergency

Downwind Surveys

Determination of Offsite Doses

Environ Sample Collection During Emergency

Evacuations During an Emergency

Personnel Accountability

Monitoring of Personnel/Equipment During and Evacuation

Personnel Injury/Illness

Offsite Medical Assistance

Radiation Doses During an Emergen[illegible]

Emergency Response Training

Emergency Response Facilities Equipment Control and Readiness Check

Inventory of Emergency Kits

Reentry

Recovery

Rescue

Firefighting

Documentation and Record Keeeping During an Emergency

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 5

5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

5.1 Normal Operation Organization

The normal operating organization is described in Section 13.1.2 of the FSAR. The Watch Engineer is in the immediate onsite position of responsibility for the plant. The Watch Engineer has the authority and responsibility for declaring an emergency, and upon declaration of an emergency, assumes the duties of Emergency Director until relieved of that responsibility.

5.2 Onsite Emergency Organization (Figure 5-2)

5.2.1 Direction and Coordination

1. Emergency Director
2. Operations Manager
3. Radiation Protection Manager
4. Technical Manager
5. Administrative Manager
6. Operational Support Center Supervisor
7. Technical Support Section
8. Security
9. Communications Coordinator
10. Radiological Assessment Teams
11. First Aid and Rescue Teams
12. Fire Brigade
13. Emergency Repair and Damage Control Teams
14. Radiation Protection
15. Chemical Assessment

16. Shift Technical Advisor

5.2.2 Plant Staff Emergency Assignments and Duties

1. Emergency Director (ED)

The Emergency Director shall be solely responsible for the following:

(a) Evaluation, classification and declaration of the emergency condition.

(b) Overall direction of onsite emergency organization and onsite recovery efforts to regain control and recover from the emergency situation.

(c) Decision to notify offsite emergency organizations and for providing protective action recommendations to authorities responsible for implementing offsite emergency measures.

(d) Maintenance of communications with the Technical Support Manager of the Corporate Nuclear Emergency Response Organization for the transfer of in-plant information and data to the overall recovery support organization.

(e) Continual assessment of status of the emergency to determine if a change in classification is necessary.

(f) Be cognizant of press releases.

The Watch Engineer on shift shall serve as the interim Emergency Director until such time as he

is properly relieved by the Plant Manager or his designated alternate. The alternates are listed below in the order in which they may assume authority:

(a) Chief Technical Engineer/Chief Operating Engineer

(b) Operating Engineer

If the Plant Manager is expected to arrive at the Technical Support Center within a short period of time (normally less than 30 minutes), the other alternates should not relieve the Watch Engineer of his Emergency Director duties.

2. Operations Manager (OM)

The Operations Manager shall be responsible for the following:

(a) Advise and/or direct the Watch Engineer in emergency operation of the plant, including the requisite operations and manipulations of the reactor.

(b) Advise the ED on the operation of the plant in the accident recovery and facilitate communications between the ED and the Control Room.

(c) Ensure that Control Room relief crews are available and informed of status of plant conditions.

The position of Operations Manager shall be filled

by the Operating Engineer. The alternates are listed below in the order in which they may assume authority:

(a) Plant Engineer in Operations

(b) Watch Engineer (after being relieved as ED)

3. Radiation Protection Manager (RPM)

The Radiation Protection Manager shall be responsible for th following:

(a) Keep the ED fully informed of the status of emergency plan implementations and onsite radiation protection measures.

(b) Implementation of all onsite radiation protection measures specified in the Emergency Plan Implementing Procedures, and evaluation of radiation levels.

(c) Direct medical care of contaminated/injured personnel onsite and in transit, and advise offsite medical facilities regarding radioactive contamination matters.

(d) Development of manpower available to fill functions of Radiological Assessment Teams, Radiation Protection, and Chemical Assessment.

The position of Radiation Protection Manager shall be filled by the Health Physics Engineer. The alternates are listed below in the order in which they may assume authority:

(a) Plant Engineer in Health Physics

(b) Radiochemistry Engineer

4. Technical Manager (TM)

The Technical Manager shall be responsible for the following:

(a) Advise the ED on proposed system modification, alternate uses of systems in the event of loss of function, and plant characteristics and behavior.

(b) Coordinate and direct the members of the Technical Support Group.

(c) Account for all onsite persons (i.e., visitors, construction/contractor, plant personnel).

The position of Technical Manager shall be filled by the Reactor Engineer. The alternates are listed below in the order in which they may assume authority;

(a) Technical Support Manager

(b) Instrument and Control Engineer

5. Administrative Manager (AM)

The Administrative Manager shall be responsible for the following:

(a) Provide logistic support for the onsite emergency organization.

(b) Scheduling of activities.

(c) Procurement of equipment and supplies.

(d) Notification to individuals and organizations regarding support for onsite staffing require-

ments.

(e) Ensure proper record keeping.

The position of Administrative Manager shall be filled by the Plant Administrative Coordinator. The alternates are listed below in the order in which they may assume authority:

(a) Stores Supervisor

(b) Plant Storekeeper

6. Operational Support Center Supervisor

The Operational Support Center Supervisor shall be responsible for the following:

(a) Coordination of the availability and assignment of onsite support personnel located in the Operational Support Center for the ED and the Emergency Organization Managers.

(b) Report directly to the ED and inform him of onsite support staff status.

The position of Operational Support Center Supervisor shall be filled by the Maintenance Engineer. The alternates are listed below in the order in which they may assume authority:

(a) Senior Plant Engineer in Maintenance Section

(b) Plant Engineer in Maintenance Section

7. Technical Support Section

The Technical Support Section shall be responsible for providing assistance and advice as requested by

the Technical Manager. This section is a pool of operational and technical experts. The following individuals shall join this section when available:

(a) Reactor Engineer

(b) Radiochemistry Engineer

(c) Instrument and Control Engineer

(d) Plant Engineers in Technical Support Section

(e) Nuclear Engineers

8. Security

Security shall be responsible for the following:

(a) Maintain plant security in accordance with plant security procedures and institute appropriate contingency measures.

(b) Assist the Technical Manager in accounting for all visitors, construction/contractors, and plant personnel onsite.

Site Access Control should be coordinated by the Site Security Supervisor. In his absence the Shift Security Supervisor on shift should fill this position. Additional security personnel may be called out as required by the Site Security Supervisor or the Shift Security Supervisor to supplement the existing security force.

9. Communciations Coordinator

The Communications Coordinator shall perform notifications as directed by the ED. This position shall

be filled by the on-shift Control Room Security Guard until the ED can appoint someone from available manpower. The practices used for alerting, notifying and mobilizing the emergency response personnel are outlined in the Station Procedures entitled, Communications Equipment and, Notifications of the Emergency Plan Implementing Procedures (EPIP).

10. Radiological Assessment Teams

These teams shall be responsible for the following:

(a) Conduct onsite and offsite radiological surveys as directed.

(b) Provide assistance to the RPM.

The on-shift Health Physics Technician shall fill the position of In-Plant Radiological Assessment. Based upon a determination by the RPM, qualified technicians shall be called to fill the position of Radiological Assessment Teams. These teams should include at least two persons, one of whom shall be competent in radiological monitoring. Surveying shall be done in compliance with procedures which govern methods, equipment and expertise used for making rapid assessments of magnitude and location of any radiological hazards presented by gaseous or liquid releases. Each team shall have the instruments capable to detect and measure radioiodine concentrations in the air as low as 10^{-7} μCi/cc under field conditions as found in the Station Procedures entitled, Downwind Surveys and, Environmental Sample Collection During Emergency of the EPIP.

Dose rate measurements for key isotopes and gross radioactivity shall be made along with estimates of integrated dose.

11. First Aid and Rescue Teams

The First Aid and Rescue Teams shall be responsible for administering first aid and rescue of personnel as directed by the RPM. These teams shall be made up of personnel trained in first aid and rescue. There shall be trained individuals on all shifts who will be designated as the persons who would initially fill this position.

12. Fire Brigade

The Fire Brigade shall be responsible for fighting fires as directed by the Fire Brigade Chief. The position of Fire Brigade Chief shall be filled by the Shift Foreman. If additional brigade members are needed, they may be chosen from available personnel. in the Operational Support Center. These persons should be qualified in fire fighting techniques.

13. Emergency Repair and Damage Control Teams

These teams shall be responsible for making the necessary repairs and damage assessments as directed and coordinated by the Operational Support Center Supervisor. These teams should be made up of personnel possessing the skills necessary to cope with the emergency (i.e., mechanics, technicians). A Storekeeper may be appointed as required.

14. Radiation Protection Personnel

The Radiation Protection Personnel shall be responsible

for the following:

(a) Provide Health Physics coverage as required.

(b) Supervise and conduct decontamination of personnel.

(c) Provide for issuance of proper dosimetry.

(d) Determine and record personnel exposures.

(e) Report to and provide assistance to the RPM.

These positions should be filled by persons qualified in the various aspects of Radiation Protection.

15. Chemical Assessment

Chemical Assessment shall provide chemical sampling and analyses as required. This position(s) should be filled by persons qualified and experienced in Chemistry/Radiochemistry.

16. Shift Technical Advisor (STA)

The Shift Technical Advisor shall be responsible for providing technical support to the Watch Engineer in the areas of thermal hydraulics, reactor engineering, and plant analysis. The position of Shift Technical Advisor shall be filled by the On-Shift Technical Advisor.

17. Offsite Personnel Support

During night shifts and weekends when the plant may be staffed with the minimum shift crew (refer to FSAR Section 13.1.2), the Emergency Director will be required to determine the need for additional personnel to perform the tasks of the emergency organization. If a determination is made that additional help is required, the appropriate plant

staff personnel will be summoned to the site as described in the appropriate procedure regarding standby lists, beepers, and automatic dialing systems.

Members of the on-shift crew will be trained and qualified in plant health physics procedures, first aid and fire fighting.

5.3 Offsite Emergency Organization

It is anticipated that the initial stages of all classes of emergencies will be handled by the Onsite Emergency Organization composed of Shoreham plant personnel. In the event of a major accident which would exceed the capabilities of the Onsite Emergency Organization, activation of LILCO's offsite emergency organizations would take place. The actions taken and methods used are described in the appropriate procedures located in the EPIP. Since the Recovery Manager, who directs the Corporate Nuclear Emergency Response Organization, is notified and kept informed on any Emergency Action Level occurring at the site, he too will play a role in assessing the need for part or total activation of the Nuclear Emergency Response Organization.

The Corporate Nuclear Emergency Response Organization (Figure 5-3) would be under the leadership of the Recovery Manager. The Recovery Manager would be suported by various technical and advisory disciplines including a Technical Support Manager, a Plant Manager, a Radiological Control Manager, a Design and Construction Support Manager, an Administration and Scheduling Manager, a Technical Advisory Manager and a LILCO

Management Advisory Group. In addition, the Recovery Manager would be supported by an Emergency Communications Director and a Technical Agency Liaison for dissemination of information to the various Federal, State and County regulatory agencies, the general news media, and the public. The responsibilities of each position are defined in Section 5.3.1.

5.3.1 Offsite Emergency Assignment Responsibilities

1. Recovery Manager

The Recovery Manager reports to the President of the Long Island Lighting Company (LILCO) for the duration of the nuclear emergency. He is responsible to manage and supervise recovery operations and other support functions from the Emergency Operations Facility (EOF). The Recovery Manager is the senior Company official who has the requisite authority and technical knowledge to manage the nuclear power plant recovery operations. He will have full authority to make required decisions regarding accident mitigation or plant recovery without need for consultation with higher management. He will also request, or authorize the request of any and all Federal assistance considered appropriate for the given situtation.

2. Emergency Director

The Plant Manager (Emergency Director for the duration of the emergency) is responsible for the implementation of all in-plant operating and emergency procedures in support of the objectives of the recovery operation. He is responsible for all in-plant maintenance and support personnel. He maintains the in-plant security

program in support of a recovery operation and is responsible for the training of in-plant personnel in the various emergency operation and maintenance plans and procedures. The Plant Manager is responsible for all in-plant health physics activities and coordinates all in-plant sampling programs, dose assessments, dose management and radiation protection programs. He is responsible for implementing the recovery operation and provides information and recommendations to the Recovery Manager concerning future operations that could affect the plant or the environment. The Plant Manager maintains a principal communications liaison with the Technical Support Manager for the transfer of in-plant information and data to the overall recovery support organization. The establishment of this line of communications ensures that the in-plant personnel are communicating with the recovery team through a single channel.

3. Technical Support Manager

The Technical Support Manager is responsible for the analysis and development of procedures in direct support of plant operations personnel with the objectives of taking the plant to a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. The Technical Support Manager is the cheif line of communications with the in-plant personnel for the entire recovery organization. The Technical Support Manager provides a central facility for the collection, retention, retrieval and transmission of plant parameters to all

concerned personnel within the recovery organization. Included as part of this organization are experienced operating and technical personnel in direct support of plant shift operations personnel. The Technical Support Manager will analyze problems reported by in-plant personnel, determine alternatives and develop plans in the areas of system operations, instrumentation and control, and protection of the reactor core. His group will develop guidance for normal operating and emergency procedures in direct support of identified problems. Finally, the Technical Support Manager will resolve questions concerning plant operating licensing requirements with NRC representatives.

4. Radiological Control Manager

The Radiological Control Manager is responsible for the development of plans and procedures in direct support of plant operations personnel, to process and control liquid, gaseous and solid wastes in a manner consistent with the recovery organization objectives, and to minimize the effects on the health and safety of the public. He is responsible for developing modifications of plant waste systems and conceptual designs for new systems and equipment necessary to control wastes resulting from the recovery operations. The Radiological Control Manager provides health physics support offsite by coordinating offsite environmental sampling programs, dose assessments, dose manage-

ment, and radiation protection programs. He organizes and dispatches offsite radiological monitoring teams as required, interprets radiological data obtained, and updates the recovery organization. The Plant Radiological Control Manager arranges for and dispatches any special assistance or services requested regarding radiological measurement or protection equipment. He maintains control over offsite personnel and continually monitors and provides for any considerations for their radiation protection.

5. Design and Construction Support Manager

The Design and Construction Support Manager coordinates the design and construction activities of the utility engineering personnel, architect engineer, nuclear steam supply system engineers, specialists, and consultants. The Design and Construction Support Manager provides the direct contact between LILCO and the Stone & Webster Emergency Response Organization as well as the General Electric Emergency Response Organization. He also acts as the liaison between the technical expertise available through the Institute of Nuclear Power Operations (INPO) resource inventory group and other industry-wide expert pools, including the Nuclear Safety Analysis Center (NSAC). He assures that the conceptual designs and programs designated by other organizations within the recovery staff are translated into properly engineered systems in support of the recovery objectives. He identifies the required equipment, parts and services needed to implement the

recovery plans and arranges for their timely delivery. He assembles and manages the necessary construction forces to install identified modifications. The Design and Construction Support Manager establishes the quality assurance requirements for recovery engineering, design and construciton activities.

6. Administration and Scheduling Manager

The Administration and Scheduling Manager provides administrative, logistics, communications, personnel support, short-term planning, and scheduling for recovery operations. He arranges for general office support functions including typing, reproduction, office supplies, office furniture and accommodations including motel, airline and travel arrangements for all recovery staff personnel. In the area of communications, he arranges for the necessary telephone requirements including mobile units and radio page units, and he develops special delivery service arrangements to support rapid transfer of information and documents. The Administration and Scheduling Manager provides the necessary purchasing function within the recovery team and is responsible for contract negotiations and administration and material control including procurement expediting. He administers the necessary petty cash funds and expense accounts and provides the necessary handling of payroll matters. He assembles the necessary commissary arrangements in support of a potential twenty-four hour recovery operation.

7. Technical Advisory Group

This advisory group consists of those senior technical personnel who will serve on the Recovery Manager's staff. They should include senior representatives from the General Electric Company, Stone & Webster Engineering Corporation, INPO, NSAC and the NRC. Specific representatives would be designated by the Recovery Manager. These senior management personnel would have the requisite authority to represent their respective organizations in making resource commitments and resolving technical issues. This group provides day-to-day support to the Recovery Manager and should be in attendance at meetings of the recovery organization. In essence, this advisory group acts as the technical oversight organization within the overall recovery staff, with its primary emphasis on ensuring that proper technical assessment of recovery schemes have been made prior to implementation.

8. LILCO Management Advisory Group

This advisory group consists of various executives and managers within the LILCO organization providing necessary advice to the Recovery Manager in the areas of finances, employee relations, community relations, insurance, claims, and legal issues. They provide the Recovery Manager with an expertise for the inclusion of non-nuclear technical decisions which must be made as part of the overall recovery operation. The LILCO Management Advisory Group would be located at the Hicksville Operations Center.

9. Technical Agency Liaison

The Technical Agency Liaison is thoroughly familiar with the details of the facility emergency plan as well as the specific emergency plans of Suffolk County and New York State. He will act as the principal point of technical contact between LILCO and the designated outside agencies including NRC, FEMA, DOE and EPA. One of his primary responsibilities is to disseminate the results of radiological assessment activities in terms of both real time measurements and, to the extent possible, projected radiological exposures. At the EOF, he will obtain information on the diagnosis and prognosis of the accident conditions. He maintains communications with the offsite authorities on these matters and provides the necessary information for the offsite agencies to implement their emergency plans. He will send a representative to each of the government EOCs to assist with communications with offsite authorities. The Technical Agency Liaison receives any responding representatives from offsite emergency agencies and assists them with their information and communication needs. The Technical Advisory Liaison works closely with the Emergency Communciations Director and ensures that all technical releases are consistent with media releases and have the full approval of the Recovery Manager.

10. Emergency Communications Director

The Emergency Communications Director, as part of

the emergency response organization, supervises all communications operations consistent with the guidelines set forth in the LILCO Corporate Nuclear Emergency Communications Plan. He is the single Company voice for all news releases and press conferences and maintains direct contact with other LILCO communications personnel to provide guidance on policy and background material for these statements. He works closely with the Technical Agency Liaison and the Recovery Manager to ensure that the technical content of all public and media statements is consistent with the information being given to the cognizant governmental agencies. He also has the overall responsibility for any and all media contact at the Emergency News Center.

5.3.2 Activation

The Shoreham Nuclear Power Station Onsite Emergency Organization, composed of personnel on-shift and immediately available from the plant staff complement, acts as the short-term responding organization.

The Corporate Nuclear Emergency Response Organization would be available at all times and ready for the implementation of long-term recovery operations. Implementing guidelines shall be contained within the Emergency Plan Implementing Procedures. The Plant Manager and the Recovery Manager will utilize the organization by determining the level of activities the Nuclear Emergency Response Organization shall provide.

The LILCO Corporate Nuclear Emergency Response Organization would be located in the EOF. The Emergency News Center would be established offsite.

5.3.3 Local Services Support

Fire protection for the area of Long Island where the plant is located is provided by volunteer fire departments which operate under the State and County Mutual Aid Plan. Under this plan, nearby departments provide support for the fire department involved in fighting a fire. Similar arrangements exist for the ambulances associated with these fire departments.

The Shoreham Nuclear Power Station is located in the fire district of the Wading River Fire Department. Plans have been developed to provide fire protection, ambulance, and rescue services. A letter of agreement from the Wading River Fire Department is contained in Appendix B.

The plans for hospital and medical support are described in Section 6.5.4. A letter of agreement from the Central Suffolk Hospital is contained in Appendix F.

5.4 Coordination With Participating Government Agencies

The statutory authority for executing the New York State Radiological Emergency Plan belongs to the Disaster Preparedness Commission (DPC). In accordance with New York State Law, the DPC will provide direction and control for all disaster response activities. The Commissioner of Health will assess and evaluate the emergency situation and order implementation of appropriate protective actions to

County officials for implementation. The "New York State Emergency Plan for Major Radiation Accidents Involving Nuclear Facilities" was submitted to FEMA on January 2, 1981 by Consolidated Edison and the Power Authority of the State of New York for Indian Point Units 2 and 3 (Docket Nos. 50-247 and 50-386).

Notification of an accident at SNPS will be accomplished by means of the Hotline. This Hotline will permit simultaneous notification of the Suffolk County Emergency Operations Center, and both New York State offices. The Federal Government (NRC) will be notified by use of a separate dedicated line. Both of these notifications will be performed under the direction of the Shoreham Emergency Director. Alternate means of notification are listed in Section 7.2.

New York State has established a central location from which to conduct the State direction of emergency actions. The State Emergency Operations Center is located in the sub-structure of the Public Security Building, State Office Building Campus, Albany, New York. Briefly, New York State responsibilities and actions are to initiate the activation of all necessary monitoring, assessment and evaluation personnel, equipment and other resources. New York State's capabilities are discussed in the State plan.

The early stages of physical implementation of protective active would be carried out be Suffolk County agencies. The County Emergency Operations Center is located in the office of

Suffolk County Emergency Preparedness Department located in Yaphank, New York, about 10 miles south of the Shoreham site. The Suffolk County Department of Emergency Preparedness has the responsibility for the implementation of the County's emergency plans and implementating procedures of the various local agencies involved in the Suffolk County Emergency Plan (Department of Health Services, Suffolk County Police Department, Suffolk County Sheriff, Riverhead Town Police, Fire Safety, etc.).

LILCO has the responsibility for implementing protective actions for all persons located in the area of the site "under owner control" (see Figure 5-1), and the notification of persons in residence at the St. Joseph's Villa. The State and County have the responsibility for implementing protective actions for all other members of the public. The bases for notification for the State and County are set forth in the memoranda of understanding in Appendix B.

The Nuclear Regulatory Commission, Region I, will be notified in accordance with regulatory and license requirements. The capabilities of the Federal Government will include the utilization of the Federal Radiological Monitoring and Assessment Plan if the circumstances show cause for its use. Many other agencies would also be involved in monitoring if a major accident occurred. Section 5.3.1.1 discusses the provisions made for incorporating the Federal response capability into the Shoreham Nuclear Power Station Emergency Plan. Specific Federal resources

expected, including times of expected arrival, shall be negotiated according to the appropriate corporate procedure, and consultation with the appropriate State and local agencies, as will any resources needed to support any Federal response.

Upon the determination of an initiating condition that may impact the ingestion pathway, the State Office of Disaster Preparedness will notify potentially affected jurisdictions. This notification will be made to County/State Warning Points by means of commercial telephone. In a critical situation, the National Alert Warning System (NAWAS) will be available for notification to affected Warning Points. The following jurisdictions are within the ingestion EPZ only, and if potentially affected, would be notified by the State Office of Disaster Preparedness:

1. Nassau County
2. Queens County
3. Bronx County
4. Putnam County
5. Westchester County
6. State of Connecticut

5.4.1 Notification of Govermental Authorities

Government Communications Manager

The Government Communications Manager will be stationed at the Emergency News Center and will be responsible for notifying and providing timely and continuous information regarding the emergency to local and State legislators and officials, Congressmen from Long Island,

and U. S. Senators who are not notified as part of the New York State and Suffolk County Radiological Emergency Response Plans. At no time, however, will the Government Communications Manager suggest any protective or safety-related action. Such action is the responsiblity of specific local and State emergency response agencies, who will communicate with LILCO through the Technical Agency Liaison.

5.5 Coordinated Release of Information to News Media

The LILCO Corporate Nuclear Emergency Communications Organization, Figure 5-4, will be mobilized in conjunction with the activation of the Nuclear Emergency Response Organization. This judgement would be made by the Emergency Communications Director after consultation with the Recovery Manager, the Shoreham Plant Manager and other senior LILCO officials. In the event of a serious accident, it would be crucial that, until recovery is complete, communications to the public, including the media and local, State and Federal Government officials, are approved by the Recovery Manager and the Emergency Communications Director, and released through the Emergency News Center.

5.5.1 Corporate Nuclear Emergency Communications Organization

This organization shall be established under the direction of a single responsible individual called the Emergency Communications Director, supported by an Emergency News Manager and a Government Communications Manager, who together will coordinate the dissemination of information to the public, the general news media, and the various Federal, State and County officials.

The Emergency News Manager shall be supported by the Media Information Coordinator, Customer Communications Control Coordinator, and Communications Administrative/ Logistics Coordinator. The responsibilities of each position are described briefly as follows:

1. Emergency Communications Director

   The Emergency Communications Director is the Company's top ranking public affairs official, and reports to the Recovery Manager. During an emergency, he will be stationed at the Emergency Operations Facility and supervise all communications operations as described in the Corporate Nuclear Emergency Communications Plan. He will work with the Recovery Manager to develop formal statements, responses, and fact sheets, and he will act as the principal Company spokesman during a crisis, moving back and forth from the Emergency Operations Facility to the Emergency News Center as required.

   All press releases or any other kinds of public contact should originate with, or be cleared by, the Emergency Communications Director. Also, he will work closely with the Technical Agency Liaison to ensure that the technical content of all public and media statements is consistent with the information being given to technical agencies and that their statements have the approval of the Recovery Manager.

The Emergency Communications Director will also coordinate his activities with the State, local and Federal Public Information Officers (PIO). He will consult with the State PIO prior to the release of any information which may affect the general public. All announcements on public health and safety will originate from the State and local PIOs.

2. Emergency News Manager

The Emergency News Manager will be stationed at the Emergency News Center and will supervise the dissemination of information to the public, the general media, and LILCO employees. He will distribute releases and statements, and maintain contact with the Emergency Communications Director to develop guidance on policy and background material.

He will coordinate information at the Emergency News Center with his counterparts from agencies and other companies involved with the emergency, and should provide feedback to the Company on the media's needs. Reporting to the Emergency News Manager will be the Media Information Coordinator, the Customer Communications Control Coordinator, and the Communications Administrative/Logistics Coordinator, all of whom should be stationed at the Emergency News Center.

3. Technical Agency Liaison

The Technical Agency Liaison's assignment and duties are described in Section 5.3.1.9 above. Stationed at the EOF, he will also assist the Emergency Communica-

tions Director in the formulation and dissemination of information to the Emergency News Center.

4. Communications Administrative/Logistics Coordinator

Communications Administrative/Logistics Coordinator will supervise the extensive logistical requirements of the emergency communications operation. Key activities of this function include food and housing for relocated emergency communications staff, transportation services, maintenance of telephone and communication logs, provision of office equipment and supplies, and assurance of telephone installations by the New York Telephone Company at the Emergency News Center.

5. Media Information Coordinator

The Media Information Coordinator will supervise, under the direction of the Emergency News Manager, the dissemination of approved press releases and statements to the media, service area customers and Company employees, as well as coordinate media inquiries and arrange for interviews and press briefings. The Media Information Coordinator will also ensure that communication logs will be carefully maintained over the course of an emergency.

6. The Customer Communications Control Coordinator

The Customer Communications Control Coordinator, as directed by the Emergency News Manager, will mobilize the emergency customer communications staff persons at call boards in four Divisional Operating Headquarters, eleven District Offices and the Executive Headquarters,

representing over 300 telephones. He will ensure that the most up-to-date information in available to these control centers, and will carefully monitor the volume and types of calls being released. If rumors are received, they will be logged and evaluated and the necessary responses will then be taken in coordination with the State and local PIOs.

TABLE 5-1

MINIMUM STAFFING REQUIREMENTS

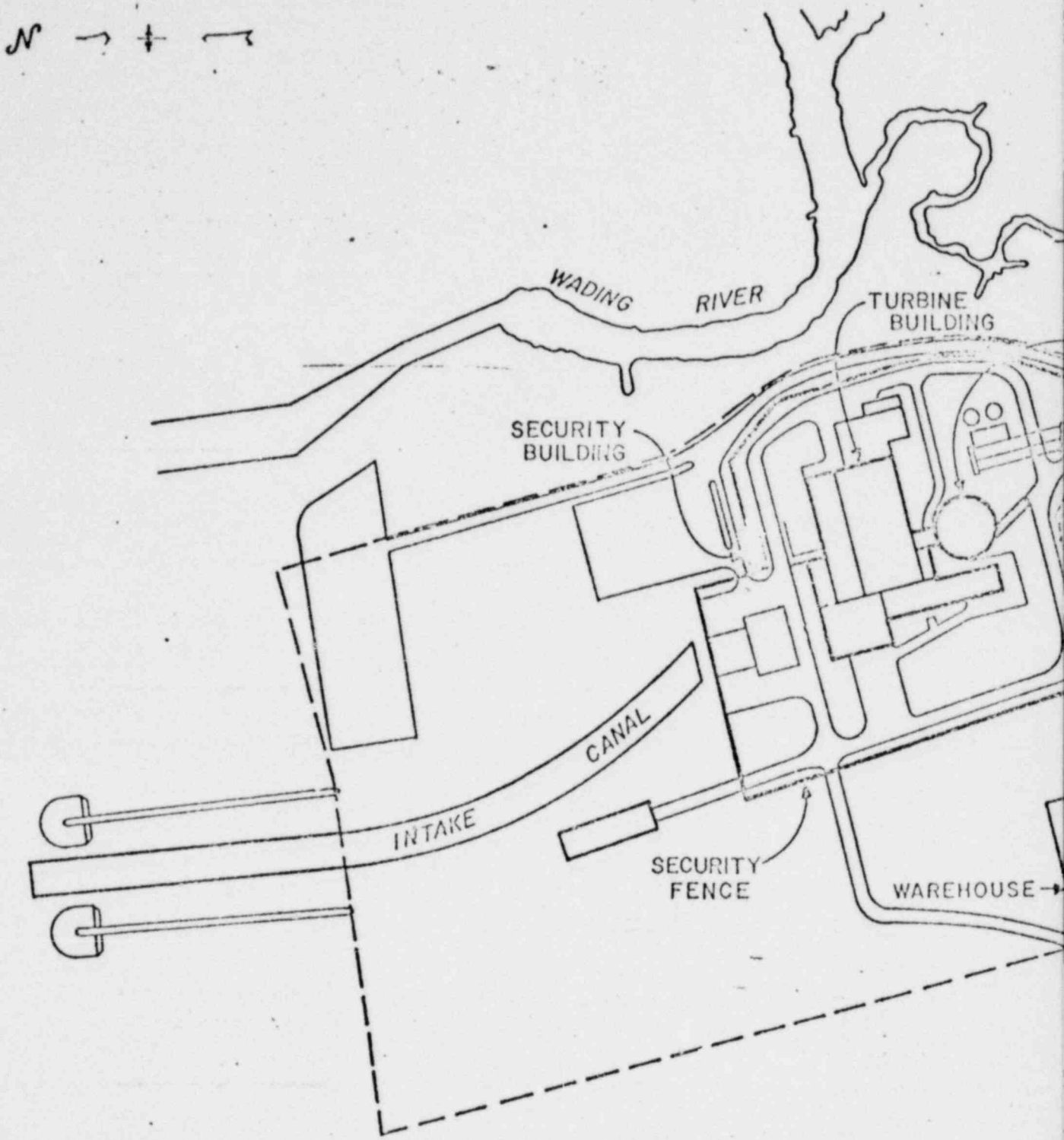
Major Functional Area	Major Tasks	Position Title or Expertise	On Shift	Additions Within 60 Minutes
Plant Operations and Assessment of Operational Aspects	Plant Operation	Watch Engineer	1	-
		Watch Supervisor	1	-
		Nuclear Station Operator	1	-
		Nuclear Ass't Station Operator	1	-
		Equipment Operator	2	-
Emergency Direction and Control (Emergency Director)		Watch Engineer	1*	-
		Plant Mgr. or Designated Alternate	-	1
Notification/Communication	Notify Station, County, State and Federal Personnel and Maintain Communication	Control Room Security	1	-
		Appointed Communications Coordinator	-	3
Radiological Accident Assessment and Support of Operational Accident Assessment	Emergency Operations Facility (EOF)	Recovery Manager	-	1
	Offsite Dose Assessment	Radiological Control Mgr.	-	1
	Offsite Surveys	Radiological Monitoring Teams	-	4
	Onsite (out-of-plant)		-	2
	In-Plant Surveys	HP TEchnicians	1	2
	Chemistry/Radiochemistry	Rad/Chem Technicians	1*	2
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor	1	-
		Core/Thermal Hydraulics	-	1
		Electrical/Mechanical	-	1
	Repair and Corrective Actions	Mechanical Maintenance	-	1
		Rad Waste Operator	-	1*
		Electrical Maintenance	-	1
		Instrument and Control Technician	-	1

TABLE 5-1 (Cont'd)

Major Functional Area	Major Tasks	Position Title or Expertise	On Shift	Additions Within 60 Minutes
Protective Actions (In-Plant)	Radiation Protection a. Access Control b. HP Coverage for repair, corrective actions, search and rescue first aid and fire fighting c. Personnel monitoring d. Dosimetry	HP Technicians	1*	3
Fire Fighting			Fire Brigade per Technical Specifications	Local Support**
Rescue Operations and First Aid			2*	Local Support**
Site Access Control and Personnel Accountability	Security, fire fighting communications, personnel accountability	Security Personnel	Per Security Plan	-
		TOTAL:	9	25

Notes: * Provided by shift personnel assigned to other functions.

** Additions within 30 minutes.



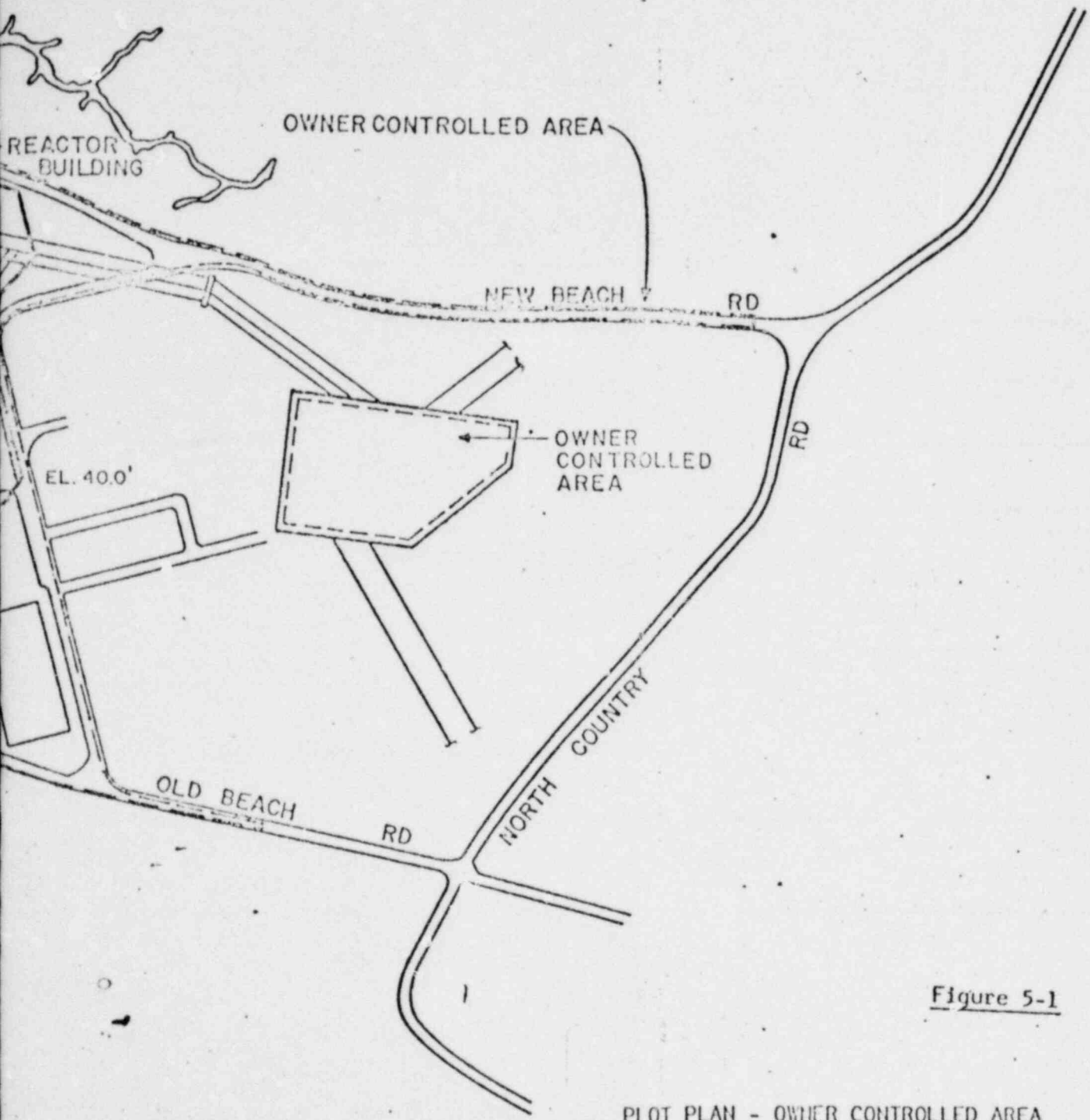


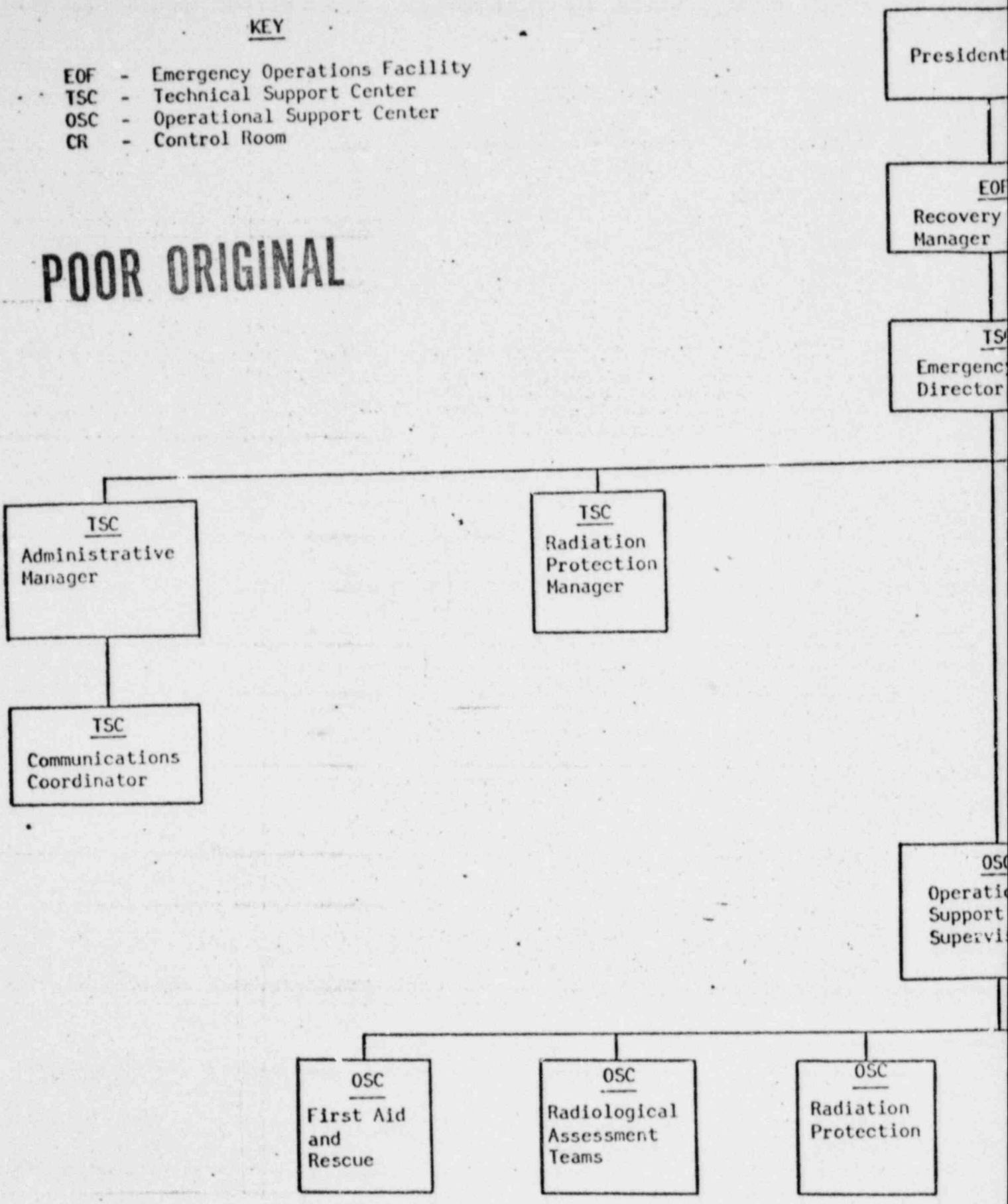
Figure 5-1

PLOT PLAN - OWNER CONTROLLED AREA

SHOREHAM NUCLEAR POWER STATION - 1

KEY

EOF - Emergency Operations Facility
TSC - Technical Support Center
OSC - Operational Support Center
CR - Control Room



SNPS ON-SITE EMERGENCY ORGANIZATION

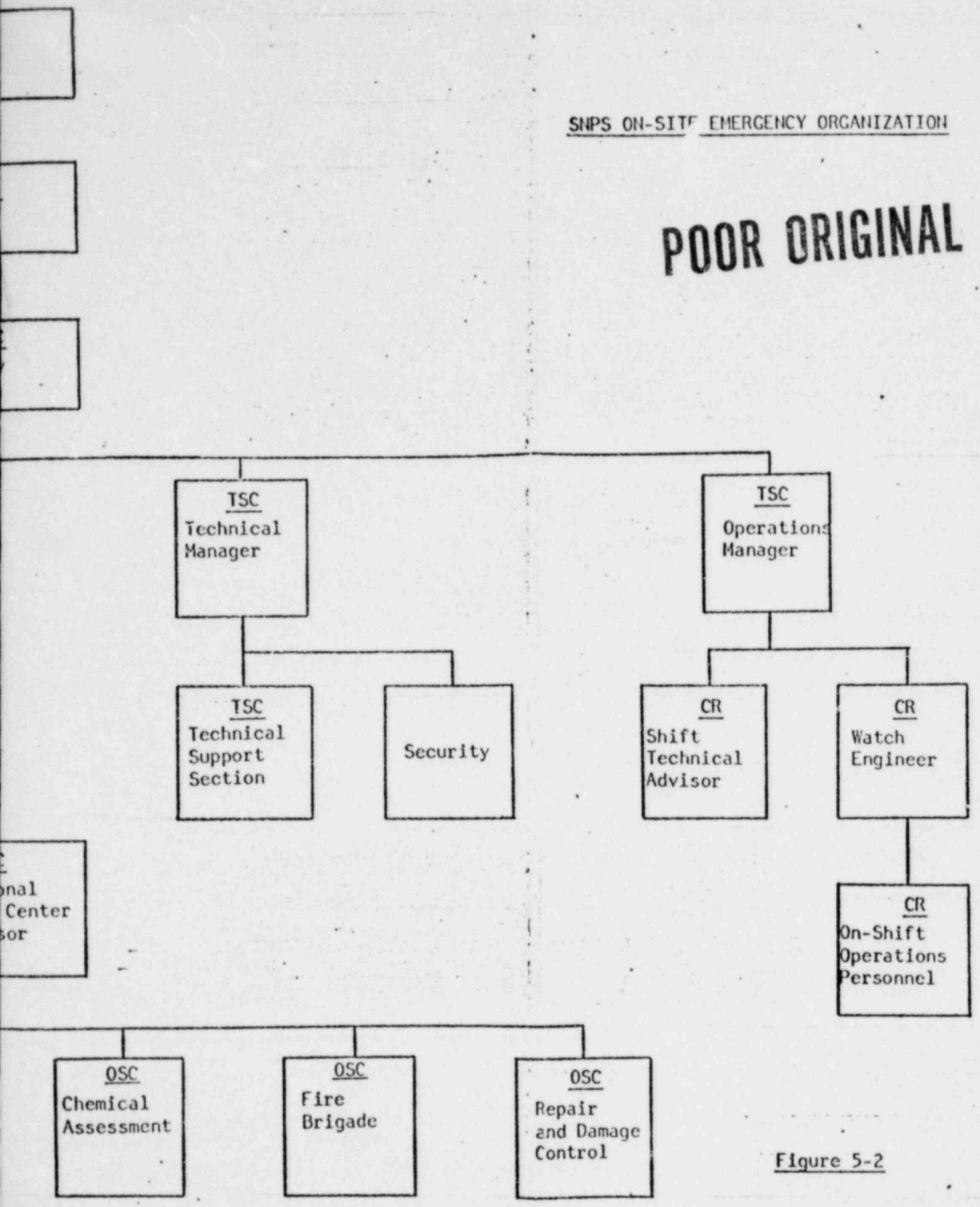
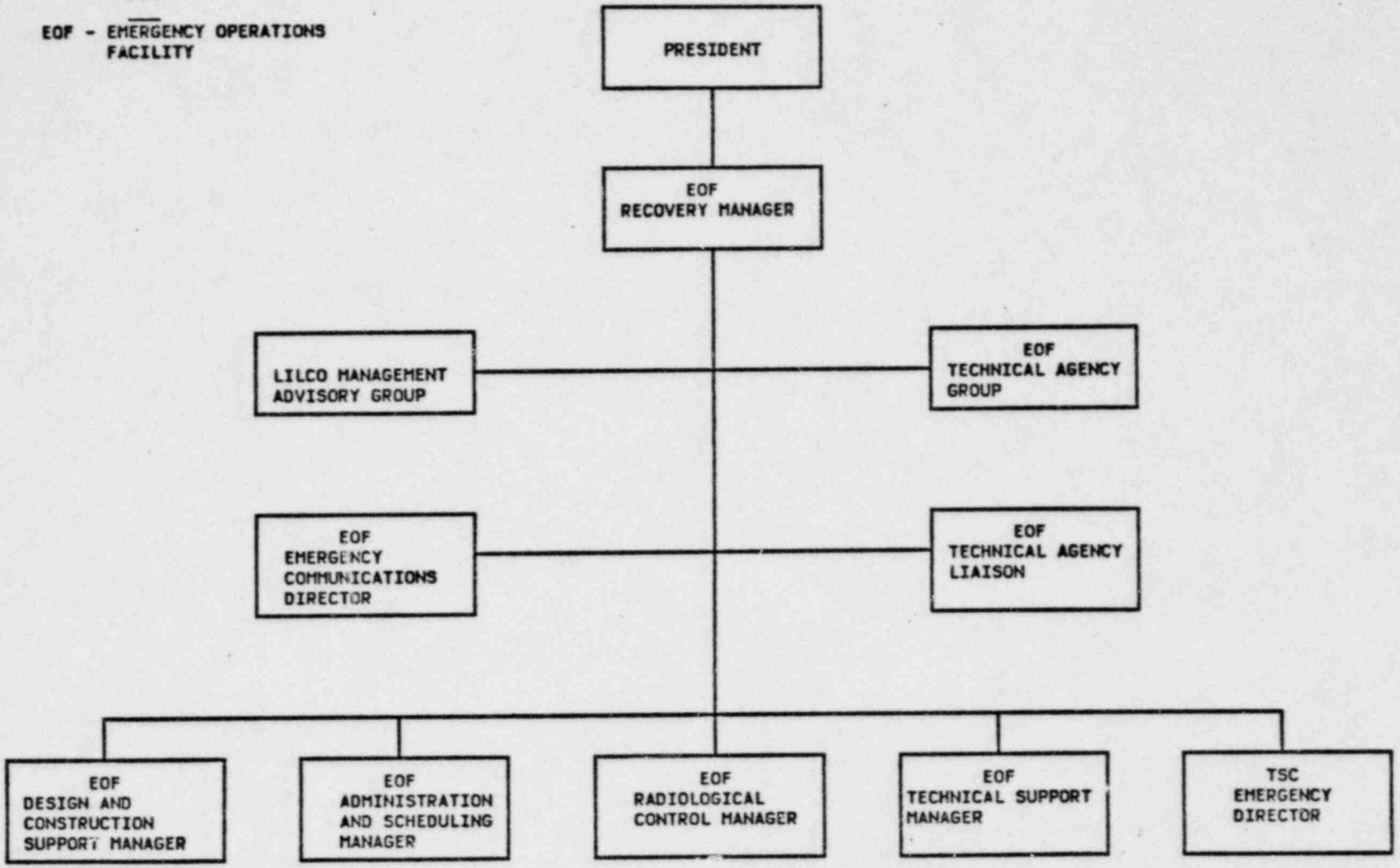


Figure 5-2

KEY

EOF - EMERGENCY OPERATIONS FACILITY

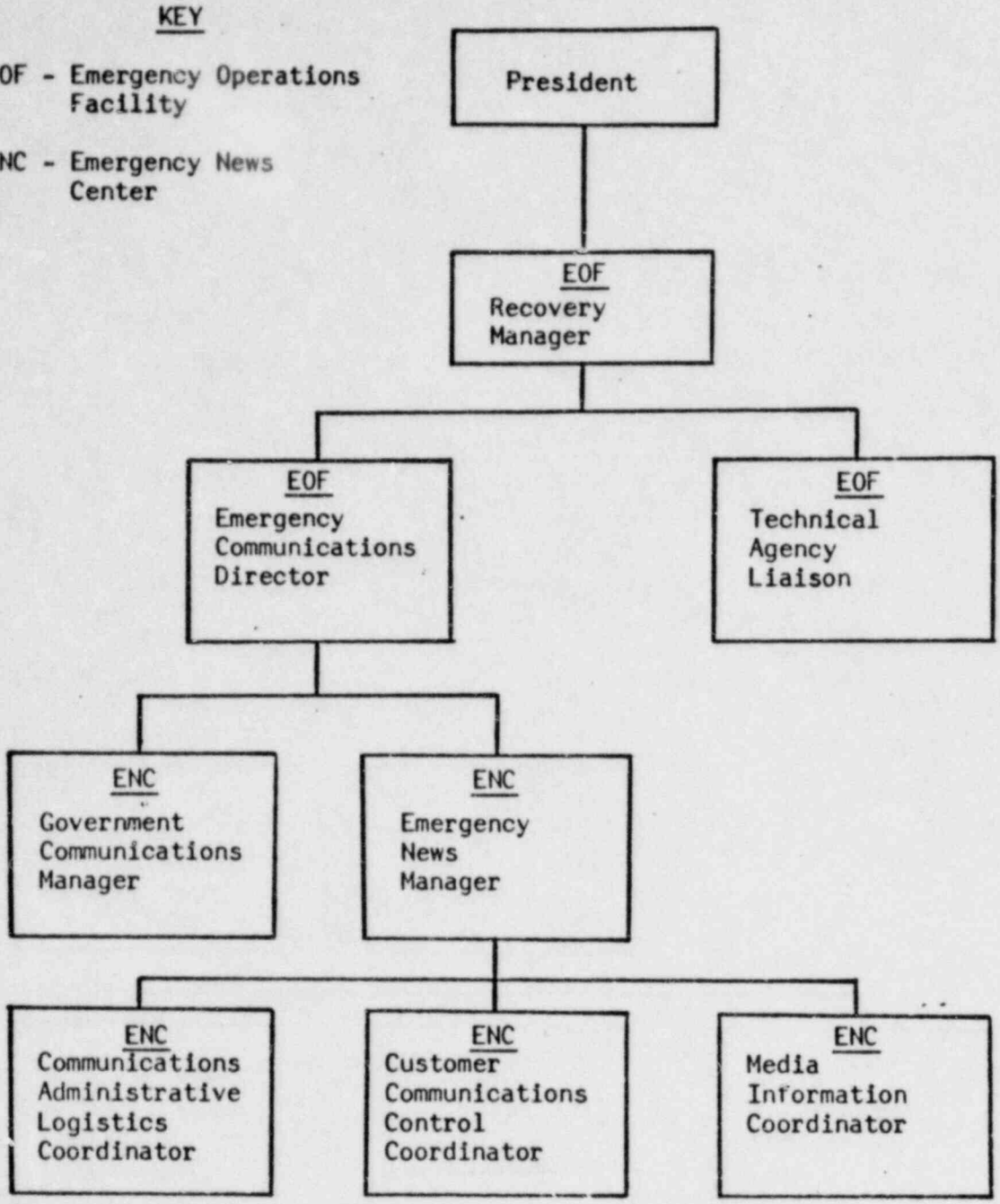


LILCO CORPORATE NUCLEAR EMERGENCY RESPONSE ORGANIZATION
FIGURE 5-3

KEY

EOF - Emergency Operations Facility

ENC - Emergency News Center



LILCO CORPORATE NUCLEAR EMERGENCY COMMUNICATIONS ORGANIZATION

Figure 5-4

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 6

6.0 EMERGENCY MEASURES

6.1 Assessment Actions

Accurate assessment of the situation is important in the initial stages to assure proper implementation of the Emergency Plan. Implementation of Station Procedure, Conditions for Emergency Action Levels, is the guide to be used for both the initial assessment of an incident and for continuing re-assessment for those emergencies of extended duration to assure proper classification of conditions.

For each of the four emergency classifications, extensive and continuing assessment actions will be done for the purpose of:

1. Identification and characterization of the incident.
2. Prediction of offsite doses resulting from the incident.
3. Notification of and verification for offsite authorities.
4. Determination of appropriate measures.
5. Indication of escalation, reduction, or termination of the emergency classification.

Figure 6-1 presents a detailed breakdown of the sequence of plant events and actions taken by plant personnel up to and including notification of State and County personnel of the emergency. Times presented are elapsed times from time zero and are based on a detailed analytical analysis of the loss of coolant incident, where possible, and on engineering judgment.

Time estimates are referenced to the Low Low Level signal (i.e., approximately 180" above top of core) resulting from a loss of coolant. Thus, no credit is taken for plant personnel to initiate protective measures during the period following the incident and preceding the Low Low Level signal. Depending on the actual incident, this time period may be significant. Although a very low probability event, a loss of coolant accident is the only event which has the potential of requiring evacuation of persons living in the vicinity of the plant.

6.1.1 Assessment Instrumentation

The station instrumentation which is provided for accident assessment includes the following equipment:

1. Station Ventilation Exhaust Monitor
2. Turbine Building Normal Ventilation Exhaust Monitor
3. Reactor Building Normal Ventilation Exhaust Monitor
4. Radwaste Building Normal Ventilation Exhuast Monitor
5. Reactor Building Standby Ventilation Exhuast System Monitors
6. Post Accident Monitors
7. Radiation Monitoring System
8. Meteorological Tower Input (i.e., wind speed, direction, and temperature measurements)
9. Effluent Flow Rate Meters

10. Post Accident Reactor Building Standby Ventilation

11. Post Accident Station Ventilation Exhaust

Table 6-1 lists the monitors which would detect and monitor all accident releases for the accidents analyzed in Chapter 15 of the FSAR. The ranges of the instruments, which are described below, are also provided in the Table.

The Station Ventilation Exhaust Duct Monitor and the Turbine, Reactor, and Radwaste Buildings Normal Ventilation Exhuast Monitors are described in Sections 11.4 and 12.3.4 of the FSAR. Their function is to detect normal releases which result from minor steam and liquid leakages within the plant. Each detector is provided with a limited multichannel analysis capability which will allow identification of selected gamma emitting isotopes. These units are capable of detecting gross concentrations of about 10^{-6} to 10^{-1} µCi/cc of gas and about 10^{-10} to 10^{-5} µCi/cc of particulates without exceeding the range of the instrument. These units will allow timely detection and identification of releases resulting from minor occurrences and from most of the accidents analyzed in Chapter 15 of the FSAR.

The Reactor Building Standby Ventilation System Exhaust Monitors are described in Section 11.4 of the FSAR. These redundant units are seismically qualified and are built to Quality Assurance Category I standards. Their function is to

detect activity release from a loss of coolant accident, a fuel handling accident, an instrument line break, or any other releases which cause actuation of the Reactor Building Standby Ventilation System. Each unit is capable of detecting gross concentrations of about 10^{-6} to 10^{+2} µCi/cc of gas without exceeding the range of the instrument. Each unit also has a multichannel analysis capability similar to that for the Station Ventilation Exhaust Duct Monitor. These units will allow assessment of activity release from the Reactor Building Standby Ventilation System and are provided with strip chart recorder and rate meters in the Control Room.

The Post Accident Monitors are high range radiation detectors which are provided on the Station Ventilation Exhaust Duct and on the Turbine Building, Reactor Building, and Radwaste Building Normal Ventilation Exhaust Ducts. The Post Accident Monitors are described in Section 11.4 of the FSAR. Their function is to monitor releases from the Station Ventilation Exhaust Duct and from the ventilation exhaust from each of the three major buildings of the plant. Each unit is capable of detecting gross radioactivity concentrations of about 10^{-2} to 10^{+3} µCi/cc without exceeding the range of the instrument. Each unit is provided with multichannel analysis capability similar to that for the Station Ventilation Exhaust Monitor. These units will allow timely detection and assessment of any serious accident which occurs in any building of the plant. The Post Accident

Monitors are provided with strip chart recorders and rate meters in the Control Room.

Signals from all of the above monitors are sent to the Radiation Monitoring System computer. This computer will evaluate the inputs from each monitor, along with air flow rates in each duct or pipe, and will calculate the current activity release rate and the integrated values for specific periods of time. The computer will calculate individual isotopic release rates based on a sample of the effluent, if available, or from the data obtained from the multichannel analysis conducted at the monitor level, or from the hypothetical nuclide composition described in the FSAR for the respective accident. The system will combine the release data with atmospheric dispersion information (X/Q values). This information is avilable through a direct tie from the meteorological instruments (wind speed, direction and temperature difference) or, the conservative accident X/Q values from Chapter 15 of the FSAR will be used. These inputs will be used along with the dose evaluation methods of NRC Regulatory Guide 1.3 to calculate and display the following information.

1. X/Q versus direction and distance (if meteorological inputs are available).
2. Dose rate versus direction and distance.

3. Estimates of dose rates and total integrated doses for any distance, direction, and time, past or future.

4. In-plant dose rates due to airborne activity (if in-plant airborne monitors are operational).

In the event that the Radiation Monitoring System computer is not operational, the plant operators have an EPIP, Determination of Offsite Doses (utilizing available information such as ΔT/stability class, monitor readings, location of release) to estimate offsite doses as prescribed in the Offsite Dose Calculation Manual.

This procedure may employ the meteorology used in Chapter 15 of the FSAR and will assume an isotopic composition used for the FSAR accident analysis. This data combined with gross activity release information will be used to evaluate the severity of the accident.

Area radiation monitors as described in FSAR Section 12.3.4 will provide information on radiation levels for selected in-plant locations.

The Post Accident Reactor Building Standby Vent and the Post Accident Station Vent Exhaust are both Category I off-line gas monitors with ranges from 10^{-2} μCi/cc extended up to 10^{+4} μCi/cc to detect gross concentrations of gas. They shall also be tied into the computer system and strip

chart recorders.

6.1.2 Radiological Environmental Monitoring

To supplement the plant instrumentation data, radiological survey teams will be dispatched as necessary to perform site and offsite surveys. These teams will be equipped with radiation survey instruments and air samplers with particulate and silver-zeolite filters. The objectives of this monitoring will be to provide dose assessment to be used in conjunction with dose projections (using environmental models) and to provide a basis for protective action recommendations. All monitoring will initially be under the control and direction of the Radiation Protection Manager and/or the Emergency Director. Upon activation of the Emergency Operations Facility, the Radiation Control Manager will assume the responsibility of coordinating the offsite survey teams.

The level of response with respect to offsite monitoring will depend on the seriousness of the accident. The Radiation Control Manager will have the authority to determine the level of monitoring required. In general, no offsite monitoring will be required for either the Unusual Event or Alert class emergencies. For the Site Area Emergency and General Emergency, offsite survey teams will be dispatched. Also, the supplementary Radiological Environmental Monitoring Program (REMP) will be activated as needed.

The offsite survey teams will be dispatched to perform environmental measurements in the prevailing wind direction from SNPS. The teams will be directed by either the Radiological Protection Manager or the Radiological Control Manager (via radio) to measurement locations using the sector and zone designations discussed in Section II.J of NUREG-0654. A description of the equipment used by the offsite survey teams is presented in Section 7.3.2.

The REMP is conducted during normal operations at SNPS as required by the SNPS Radiological Effluent Technical Specifications. This program includes sampling and analysis of airborne particulates and iodine, water, vegetables, milk, and a variety of other environmental media. The REMP also includes measurements of direct radiation with thermoluminescent dosimeters (TLDs). A complete description of the routine REMP is given in Section 7.3.2.

In the event of a Site Area Emergency or General Emergency, the REMP will be employed as necessary to perform plume and ingestion pathway measurements. Samples will be collected from normal REMP sampling locations. The Radiological Control Manager will determine the frequency of sample collection.

The results of all offsite monitoring will be received and recorded in the EOF. Analytical results will be translated into dose rates based on the uncontrolled usage of the

environmental medium which were sampled. These dose rates will be based on the data contained in NRC Regulatory Guide 1.108 (1977b). Dose pathways considered will be external whole body radiation (as measured by portable instruments and TLDs), thyroid doses from inhalation of radioiodine, and thyroid doses from ingestion of radioiodine. Integrated doses will be determined using these dose rates for each sampling and measurement location.

The Radiological Control Manager will also supervise the dispatch of field samples for laboratory analysis to the Radiation Management Corporation in Philadelphia, PA. In addition, there are at least four other commercial radiological laboratories within 250 miles of SNPS that may be utilized in the event of an emergency. Routine REMP's are conducted at at least fourteen other nuclear power plants. The data from these programs could also be made available.

Techniques for determining the source term and magnitudes of release, the relationship between effluent monitor readings for on and offsite exposures, and contamination for various meteorological conditions, access and extent of meteorological information to the NRC center, EOF, TSC, County and State, correction and backup systems, and the capacity and resources for field monitoring within the plume exposure EPZ are all described in great detail in the EPIP and the Emergency Operating Procedures, shall not be extensively repeated here.

6.1.3 Calculation of Doses From Environmental Measurements

During an emergency condition at SNPS, the offsite radiological impact of the accident will be assessed through two separate means; environmental measurements and predictive environmental models. This section discusses how dose rates and cumulative doses will be calculated from environmental measurements. Specific procedures will be developed to implement those calculation methods.

The general formulas for dose rate and integrated dose are modified from NRC Regulatory Guide 1.109 as presented in the Shoreham Offsite Dose Calculation Manual. These formulas can be applied to any combination of age group, nuclide, pathway or organ as defined in Regulatory Guide 1.109 and presented in Table 6-2. However, during an emergency condition certain pathways and nuclides will contribute a majority of the expected dose. The combinations that will be considered here are shown in Table 6-3. All calculations should be limited to the child age group since this group will probably receive the highest dose.

The equations will be applied to each and every analytical result (field or laboratory) as soon as possible after the result is received in the EOF. Therefore, each analytical result will be accompanied by a corresponding dose rate.

Analytical results and their associated dose rates will be recorded as received in the EOF following an accident

depending on sampling frequencies, and sample and measurement availability. From these dose rates, integrated doses will be calculated and recorded on a regular schedule. This schedule will depend on the available computational tools (e.g., once/hour if performed by computer, once per 4 hours if done by hand). The integrated dose equation will be applied at regular intervals with ΔT equal to the interval between integrated dose calculations (e.g., 1 or 4 hours) and dose commitment factor for age group equal to the dose rate calculated from the most recent analysis or measurement at a given location. The "most recent" analysis or measurement may, or may not, have occurred during the time period ΔT. In short, each calculated dose rate at a given location will be assumed to prevail at that location until a new analysis or measurement is made.

Time delays will occur in obtaining analytical results. For instance, external radiation measurements will be recorded as soon as they are made, whereas it may be many hours before γ-Spec results are available for milk samples. The calculation tools discussed above must be capable of updating cumulative doses as analytical results become available.

An individual record (computer record or tally sheet) will be maintained for each subregion where a measurement or sample is taken. Codes will be assigned to each location

by the EOF in accordance with the Table J-1 of NUREG-0654. The code includes 16-22½ degree sectors and 18 radial distances for a total of 288 subregions. Any sample or measurement taken in a subregion will be assigned the location code for that subregion. Dose rates and integrated doses will also be assigned these codes. Also, each location will include a unique name, such as "Smith Farm." Integrated doses will be calculated for each subregion rather than individual locations.

6.2 Activation of Emergency Organization

Most emergency situations will be immediately indicated by local and Control Room alarm instrumentation. For any emergency situation which is discovered by an individual in the plant environs, notification to the Control Room will be made using the nearest communication system.

Following a judgment, using the guidance contained in Section 4.0, on the part of the Watch Engineer that an emergency situation exists, notification of members of the emergency organization will be achieved by use of both the Private Automatic Exchange and the station public address system. For those emergencies where the plant staff on duty must be supplemented with off-duty members of the emergency organization, the Emergency Organization Call Phone, commercial telephone as well as a paging system will be used to summon additional emergency organization personnel to the site.

The EPIP gives the details of the initial and follow-up information to be given to offsite authorities regarding the emergency as specified in NUREG-0654/FEMA-REP-1, Rev. 1, Section II, E.4.a-n; verification practices to be used; and any recommended protective actions to be taken.

6.3 Corrective Actions

Detailed emergency operating procedures describe the corrective actions necessary to place the plant in a safe condition. Additionally, EPIP describes subsequent and/or supplemental corrective actions for the scope of potential situations within each of the emergency classifications. These EPIPs are designed to guide the actions of personnel to correct or mitigate a condition as early and as near to the source of the problem as feasible. Specific actions are described, for example, which may prevent or significantly reduce a potential release of radioactive material, provide for prompt fire control and ensure timely damage control and repair. These procedures are also utilized as emergency training media and are the basis for periodic emergency drills.

6.4 Protective Actions

6.4.1 Offsite Actions

Contents of emergency messages intended for the public are in the process of being developed and will be available prior to fuel load.

Regarding the protective actions taken on behalf of the general public, notification will be made of an emergency situation via the use of a siren warning system set up throughout the ten (10) mile Emergency Planning Zone (EPZ).

This notification system, installed by LILCO, will be operational and functional prior to fuel load. Although the utilization of this system is the responsibility of Suffolk County (individual operating responsibilities for this system is described fully in the County's Emergency Response Plan Procedures), the system shall be maintained by LILCO.

Upon notification of an emergency to the general public via the siren warning system, the public shall be directed by previously disseminated information to tune to a specific radio station and await informative instructions regarding actions to be taken, if any. It is expected that this notification of an emergency situation will be made to the public when the need for protective actions within part, or all, of the EPZ is in the imminent stages.

Informative pamphlets shall be located in strategic locations such as gas stations, motels and resorts for the purpose of supplying the transient population with

emergency information. Public notification and education are reviewed in great detail in Section 8.4.

Evacuation routes are defined in the Suffolk County Emergency Plan; however, maps of the EPZ and population distribution, in a sector format, are located on Figures 6-2 and 6-3, respectively.

As stated above, notification to the public as a whole will be made via the siren warning system. Incorporated into this system for the purpose of notifying those organizations with a large number of personnel, such as large businesses, hospitals, etc., are separately operated, tone-activated, alert radios which would be in accordance with the appropriate County procedures. At the same time, the population would be notified of the need for evacuation, buses would be dispatched to evacuate schools and special institutions, and road blocks would be set up for the purpose of restricting in-coming traffic in accordance with the Suffolk County Radiological Emergency Response Plan.

The bases for the choice of recommended protective actions from the plume exposure pathway is shown in the EPIP.

Time estimates for the evacuation of the 10 mile EPZ are as delineated as in the attachment to LILCO's submittal to

the NRC in SNRC-488, dated August 7, 1980, and as amended by the information found in Appendix C.

6.4.2 Plant Site Actions

Protective action within the plant site will be instituted whenever radiation levels exceed or threaten to exceed the applicable limits for the respective area. Determination of radiation levels will be by means of area radiation monitors or portable survey instruments. Upon assessment by the Watch Engineer that an emergency situation exists that requires evacuation of area of the plant, an accouncement will be made of the emergency condition over the public address system indicating the areas to be evacuated. Upon initiation of an emergency, personnel essential to the emergency organization will report to their assigned emergency post locations. Consistent with the implementing procedures, non-essential personnel including visitors and construction/contractor personnel in the plant complex will report to the Service Building designated areas and to the other predetermined locations depending on their assigned assembly areas.

When all personnel have assembled, personnel accountability will proceed under the direction and coordination of the Technical Manager using the Personnel Accountability procedure of the EPIP. Evacuation of non-essential onsite personnel will then commence in accordance with the Station

Procedure, Evacuation During an Emergency in the EPIP. Monitoring of people evacuating the site and distribution and use of protective clothing, or radioprotective drugs, would also be performed in accordance with the appropriate procedure, Monitoring of Oersonnel/Equipment During an Evacuation.

Areas within the site boundary to which the public has access and which may require evacuation, include a small portion of the Wading River Creek marsh, the shorefront and jetties along the north boundary of the site, and the summer camp (St. Joseph's Villa, operated by the Diocese of Brooklyn) located on the Shoreham West property. Notification to the personnel at these locations would be achieved through use of public telephone, and/or the dispatch of a station employee with a power megaphone.

The initiation and implementation of protective actions offsite are the responsibility of New York State and Suffolk County agencies. LILCO's responsibilities include:

1. The timely notification of agencies.
2. The assessment activities including dispatch of radiation monitoring teams needed to verify the estimated offsite consequences of radiation releases.
3. The providing of all information needed by the agencies for estimating offsite risks.

A detailed breakdown of the actions required to notify those persons requiring evacuation and the time sequence is shown and completely detailed and reviewed in the Suffolk County Plan.

6.5 Aid to Affected Personnel

6.5.1 Emergency Personnel Exposure Criteria

All reasonable measures will be taken to maintain the radiation exposure of emergency personnel to a minimum for all emergency and lifesaving actions. Methods and conditions for permitting volunteer workers to potentially receive emergency radiation exposures including methods of measurement (i.e., dosimetry) are described in detail in the appropriate procedures in the EPIP.

As detailed in procedure, Radiation Doses During an Emergency, of the EPIP, the Health Physics Engineer (Radiation Protection Manager during an emergency) has the responsibility, when the need arises, to authroize emergency workers to receive doses in excess of 10 CFR Part 20 limits; i.e., permitting, after considering the risk, onsite emergency volunteer workers to receive radiation exposures in the course of carrying out life-saving and other emergency activities. Figure 6-4 shows the Emergency Exposure Criteria to be followed.

6.5.2 Decontamination and First Aid

The First Aid Station is located onsite in the Service Building at elevation 15 foot in close proximity to both the Health Physics Office and the Personnel Decontamination Room. First aid supplies will be provided as needed from this room. Stretchers and first aid kits will be located in a strategic manner throughout the plant. As a minimum, one person on each shift will be trained in first aid techniques.

Decontamination of personnel will be accomplished in the Personnel Decontamination Room. This room contains showers, sinks and wash basins. All drains lead to the radioactive liquid waste system where liquids shall be processed and monitored prior to discharge. The decontamination area has been located away from an area that has been determined likely to be subjected to radiation or radioactivity. Access to this area is controlled.

Action levels for determining the need for any decontamination measures are given in both the normal operating procedures and in the procedure, Monitoring of Personnel/ Equipment During an Evaucation, of the EPIP.

6.5.3 Medical Transportation

The plant First Aid Room will be equipped with medical equipment and supplies to adequately care for injuries

not requiring hospitalization.

The LILCO Medical Director will be on-call to aid in any emergency. In addition, on-call physicians of the Emergency Room in Central Suffolk Hospital will be available to provide medical services at the plant site as required. The LILCO Medical Director and the Emergency Room physician will be trained in the handling and treatment of patients involved in radiation accidents.

Personnel injury involving possible radioactive contamination will be initially handled in the Personnel Decontamination Room or First Aid Room, if possible. Prompt attention will be given to life endangering injuries such as extensive burns, serious wounds, in preference to decontamination. If the injury involves contamination, all reasonable efforts will be made to decontaminate the injured onsite. If decontamination is impossible, the injured will be covered in such a manner as to avoid spread of contamination until medical aid can be obtained or hospitalization made.

Further medical treatment beyond first aid, requiring the services of a physician or hospitalization, will be determined by the nature and extent of the injuries. If there is no possibility of radiation injury or radioactive contamination, medical treatment will be handled by the regular procedure designated by LILCO.

Hospital service will be provided by the Central Suffolk Hospital located about nine miles southeast of the site. In the event hospitalization of a contaminated patient is required, a LILCO employee, trained and qualified in health physics procedures and equipped with appropriate survey instruments, will accompany the patient to the hospital and provide monitoring for the patient and hospital premises. In addition, the Central Suffolk Hospital has been equipped with a private entrance to an isolated emergency room containing the appropriate instrumentation and equipment needed capable of providing emergency medical, as well as decontamination services, to contaminated/injured individuals should the need arise. Provision for extra clothing have also been made.

Further information regarding decontamination and treatment of a radioactively contaminated patient at the Central Suffolk Hospital may be found in the EPIP.

TABLE 6-1

ACCIDENT ASSESSMENT TECHNIQUES

Accident Description	Maximum Expected Concentrations in Bldg. Ventilation Systems μCi/cc (2)	Applicable Monitors (3)	Monitor Range μCi/cc (1)
Accidents in the Reactor Bldg.			
Instrument Line Break	1.4×10^{-2} iodine	Reactor Bldg. Normal Ventilation Monitor	10^{-6} - 10^{-1}
Loss of Coolant Accident			
a. design basis LOCA	1.5×10^{1} noble gas	Reactor Bldg. Post Accident Monitor*	10^{-2} - 10^{3}
	2.3×10^{0} iodine	Reactor Bldg. Standby Vent. Exhaust Monitors (2 units)*	10^{-6} - 10^{2}
		Post Accident Reactor Bldg. Standby Vent.*	10^{-2} - 10^{4}
b. ECCS operating satisfactorily	4.1×10^{-4} noble gas	Reactor Bldg. Post Accident Monitor*	10^{-2} - 10^{3}
	5.8×10^{-4} iodine	Reactor Bldg. Standby Vent. Exhaust Monitors (2 units)*	10^{-6} - 10^{2}
		Post Accident Reactor Bldg. Standby Vent.*	10^{-2} - 10^{4}
c. cladding perforation releasing gap activity	1.5×10^{0} noble gas	Reactor Bldg. Post Accident Monitor*	10^{-2} - 10^{3}
	5.5×10^{-1} iodine	Reactor Bldg. Standby Vent. Exhaust Monitors (2 units)*	10^{-6} - 10^{2}
		Post Accident Reactor Bldg. Standby Vent.*	10^{-2} - 10^{4}

TABLE 6-1 (Cont'd)

Accident Description	Maximum Expected Concentrations in Bldg. Ventilation Systems μCi/CC (2)	Applicable Monitors (3)	Monitor Range μCi/cc (1)
a. degraded ECCS resulting in 1% core melt	1.5×10^{-1} noble gas	Reactor Bldg. Post Accident Monitor*	$10^{-2} - 10^{3}$
	5.5×10^{-2} iodine	Reactor Bldg. Standby Vent. Exhaust Monitors (2 units)*	$10^{-6} - 10^{2}$
		Post Accident Reactor Bldg. Standby Vent.*	$10^{-2} - 10^{4}$
Fuel Handling Accident	5.1×10^{1} noble gas	Station Ventilation Exhaust Duct Normal Monitor	$10^{-6} - 10^{-1}$
		Post Accident Station Vent. Exhaust*	$10^{-2} - 10^{4}$
	5.7×10^{-1} iodine	Station Ventilation Exhaust Duct Accident Monitor	$10^{-2} - 10^{3}$
		Post Accident Station Vent. Exhaust*	$10^{-2} - 10^{4}$
Accidents in the Radwaste Bldg.			
Main Condenser Gas Treatment System Failure	3.9×10^{-1} noble gas	Radwaste Bldg. Normal Ventilation Monitor	$10^{-6} - 10^{-1}$
Liquid Radwaste Tank	4.5×10^{-7} iodine	Radwaste Bldg. Post Accident Monitor*	$10^{-2} - 10^{3}$
Failure of Air Ejector	4.1×10^{-2} noble gas	Station Ventilation Exhaust Normal Monitor	$10^{-6} - 10^{-1}$
		Post Accident Station Vent. Exhaust*	$10^{-2} - 10^{4}$
	2.2×10^{-6} iodine	Station Ventilation Exhaust Post Accident Monitor*	$10^{-2} - 10^{3}$
		Post Accident Station Vent. Exhaust*	$10^{-2} - 10^{4}$

TABLE 6-1 (Cont'd)

Accident Description	Maximum Expected Concentrations in Bldg. Ventilation Systems μCi/cc (2)	Applicable Monitors (3)	Monitor Range μCi/cc (1)
Accidents in the Turbine Bldg.			
Control Rod Drop Accident	2.6×10^{-3} noble gas	Turbine Bldg. Normal Vent. Monitor	10^{-6} - 10^{-1}
	6.3×10^{-5} iodine	Turbine Bldg. Post Accident Monitor*	10^{-2} - 10^{3}
Main Steam Line Break	1.2×10^{-1} noble gas 3.2×10^{-4} iodine	Station Vent. Exhaust Duct Normal Monitor	10^{-6} - 10^{-1}
		Post Accident Station Vent. Exhaust*	10^{-2} - 10^{4}
Feedwater Line Break	1.1×10^{-4} iodine	Station Vent. Exhaust Duct Post Accident Monitor*	10^{-2} - 10^{3}
		Post Accident Station Vent. Exhaust*	10^{-2} - 10^{4}

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* QA Category I monitor.

(1) For gaseous activity.

(2) Concentrations in station ventilation exhaust duct will be lower due to dilution.

(3) The applicable monitor listed will serve to monitor any accident which occurs in the specific building referenced, i.e., all of the applicable monitors listed for the radwaste building will serve to monitor all of the accidents which occur in the radwaste building.

TABLE 6-2

Age Groups, Nuclides, Pathways and Organs Included in
Regulatory Guide 1.109

Age Groups	Pathways	Organs	Nuclides
Adult	Potable water	Bone	All nuclides listed in Tables
Teen	Aquatic foods	Liver	B-1, and E-7 through E-14
Child	Shoreline deposits	Total Body	of Regulatory Guide 1.109.
Infant	Irrigated foods	Thyroid	
	Submersion in air	Kidney	
	Ground Plane exposure	Lung	
	Inhalation of air	GI-LLI	
	Vegetable	Skin	
	Milk		
	Meat		

TABLE 6-3

Pathway, Nuclides and Organs Considered in SNPS EP Dose Calculations
Based on Environmental Measurements

Sampling Media	Analysis	Nuclides	Dose Pathway	Organs
External Radiation	Direct Measurement	-	Submersion	Total Body
Airborne Iodine	Field Measurement	I-131	Inhalation	Thyroid
Airborne Iodine	γ-Spec	Detected iodines	Inhalation	Thyroid
Airborne Particulates	γ-Spec	Detected nuclides	Inhalation	Thyroid, Bone, Lungs
Human Foods	γ-Spec	Detected nuclides	Ingestion	Thyroid, Bone, Total Body
	H-3	H-3	Ingestion	Total Body
	Sr-89, Sr-90	Sr-89, Sr-90	Ingestion	Bone

EMERGENCY EXPOSURE CRITERIA

Planned exposure to the whole body and/or specific organs shall not exceed the following recommendations of the Environmental Protection Agency in EPA-510/1-75-001 and NCRP in Report No. 39:

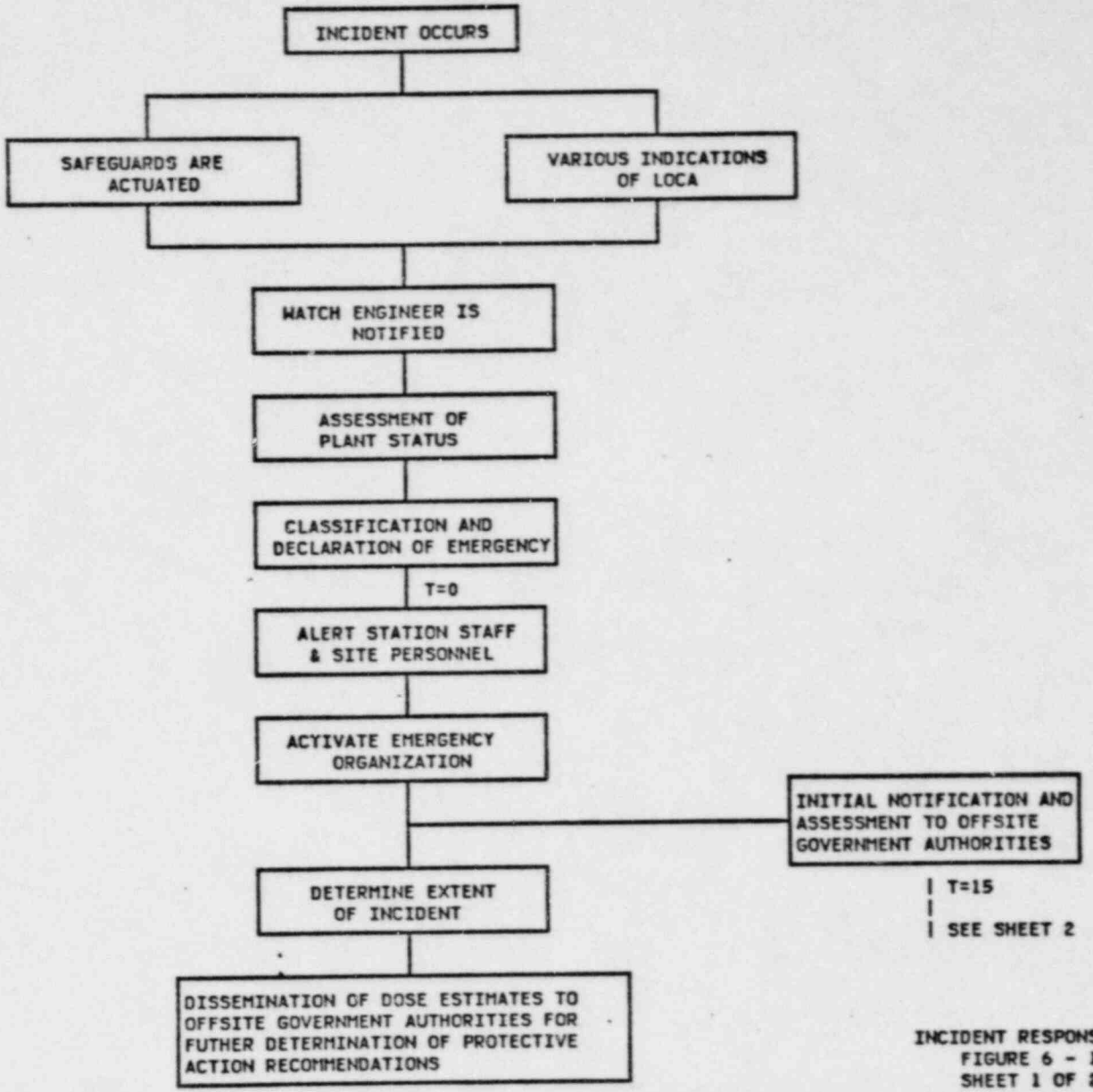
	Protective or Corrective Actions		Life Saving Actions	
Organ	Plant Workers	Emergency Workers	Plant Workers	Emergency Workers
Whole Body	25 rem	25 rem	75 rem	75 rem
Hands & Forearms (includes whole body exposures)(1)	100 rem	100 rem	300 rem	300 rem
Thyroid	125 rem	125 rem	(2)	(2)

(1) From NCRP Report No. 39.
(2) No limit is specified for life saving actions since the complete loss of the thyroid may be considered an acceptable risk for saving a life. However, thyroid exposure should be minimized by the use of respirators and/or thyroid prophylaxis.

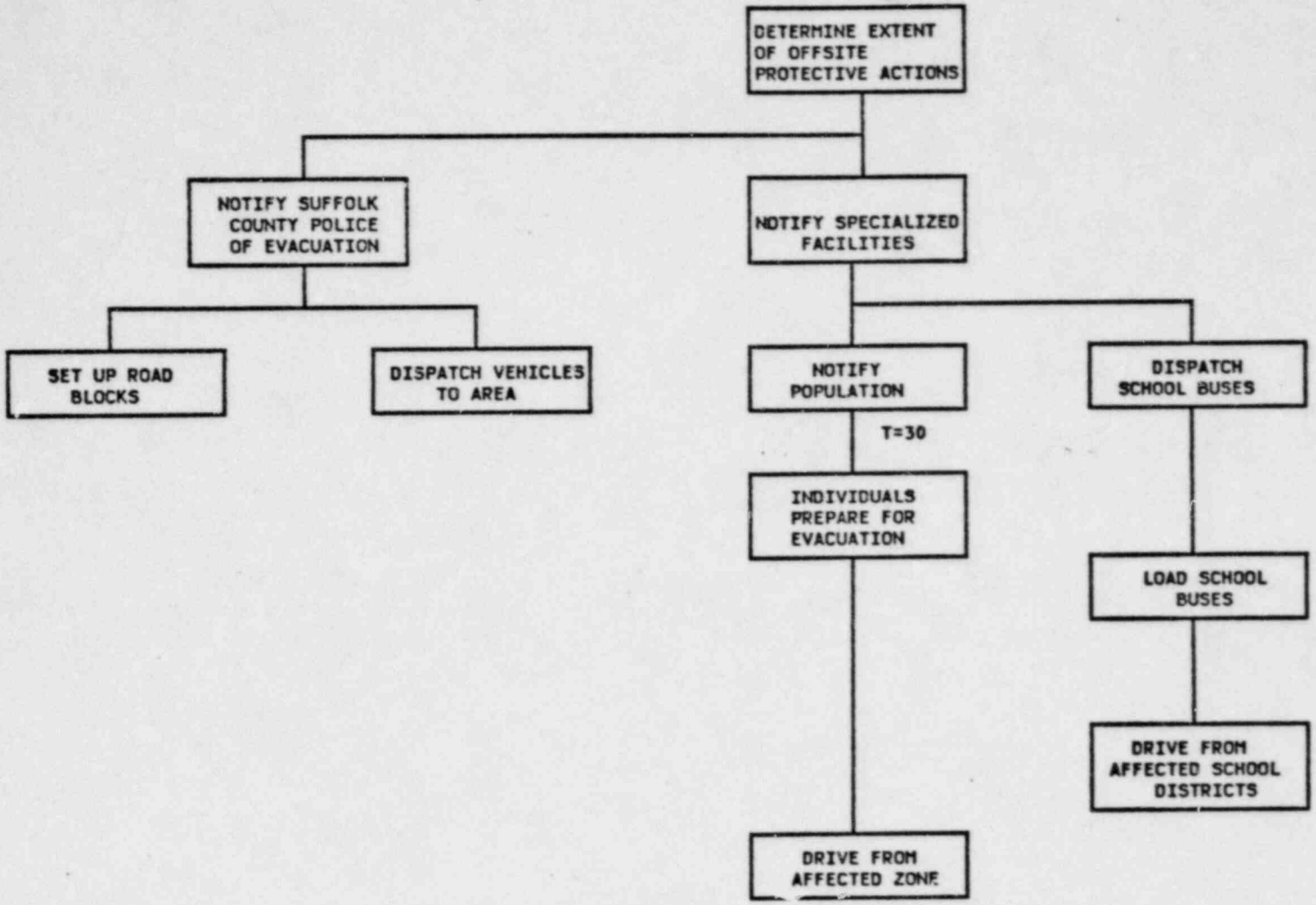
Additional General Criteria

- All reasonable means for keeping emergency exposures as low as reasonably achievable and within 10CFR20 limits shall be expended before exposures exceeding 10CFR20 limits are permitted.
- All reasonable measures shall be taken to minimize skin contamination and the uptake of radioactive materials.
- All personnel performing emergency activities involving exposures which may or will exceed 10CFR20 limits shall be volunteers and shall be briefed on potential exposure consequences prior to receiving such exposure.
- Women of child-bearing age shall not be permitted to receive emergency exposures which exceed 10CFR20 limits.
- Retrospective exposures shall be evaluated on an individual case basis.

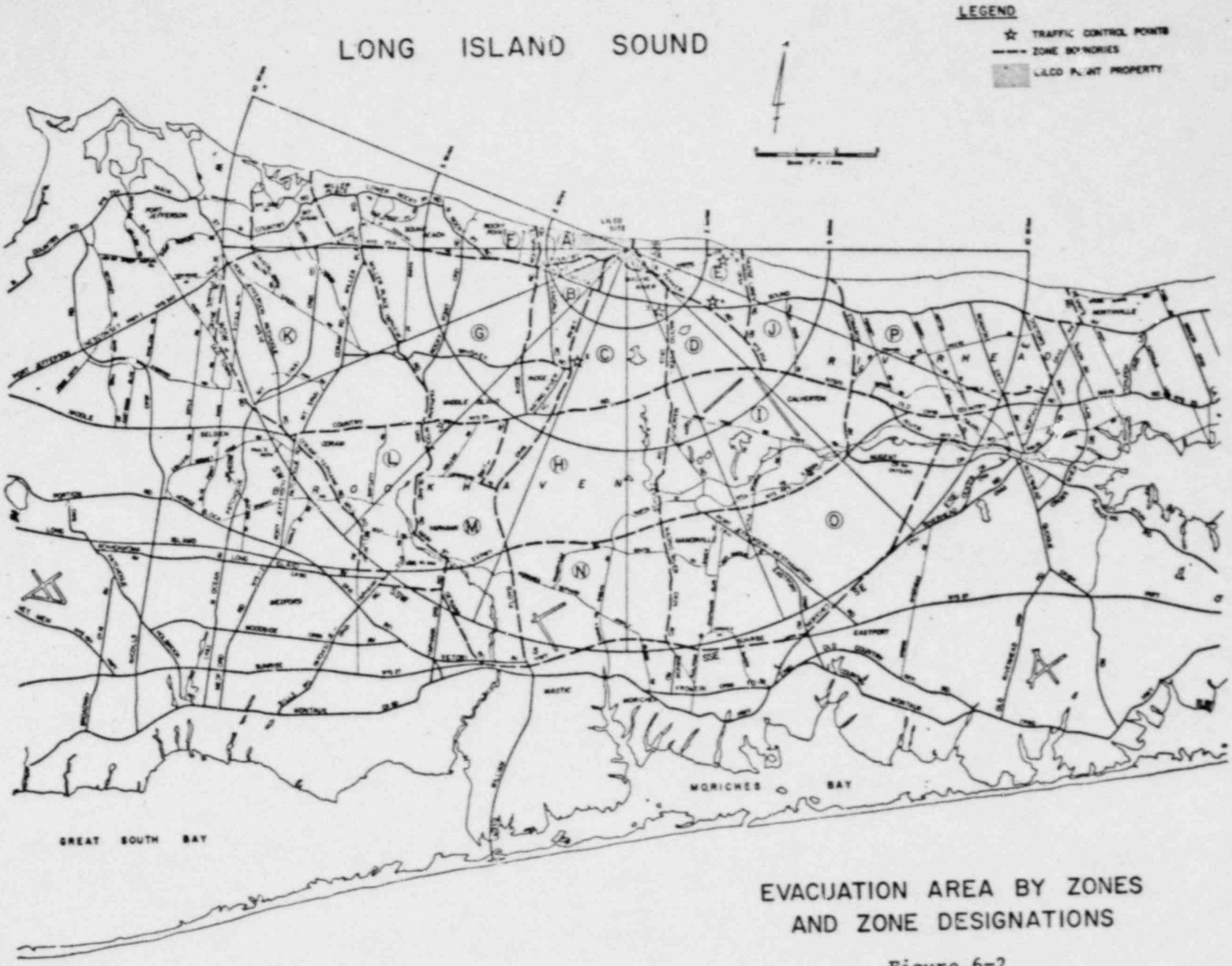
Table 6-4



INCIDENT RESPONSE TIME
FIGURE 6 - 1
SHEET 1 OF 2

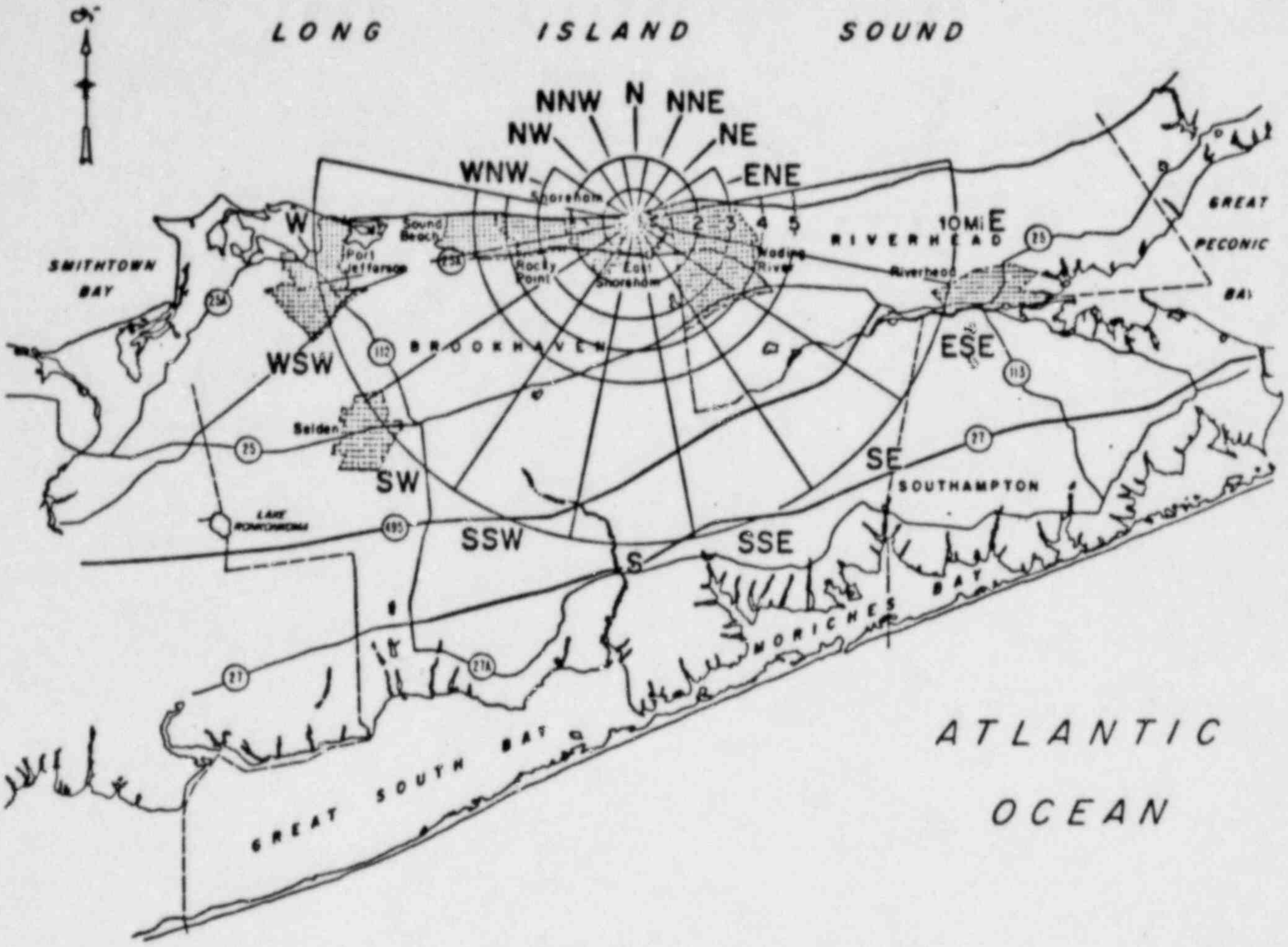


INCIDENT RESPONSE TIME
FIGURE 6 - 1
SHEET 2 OF 2



EVACUATION AREA BY ZONES
AND ZONE DESIGNATIONS

Figure 6-2



SUMMER

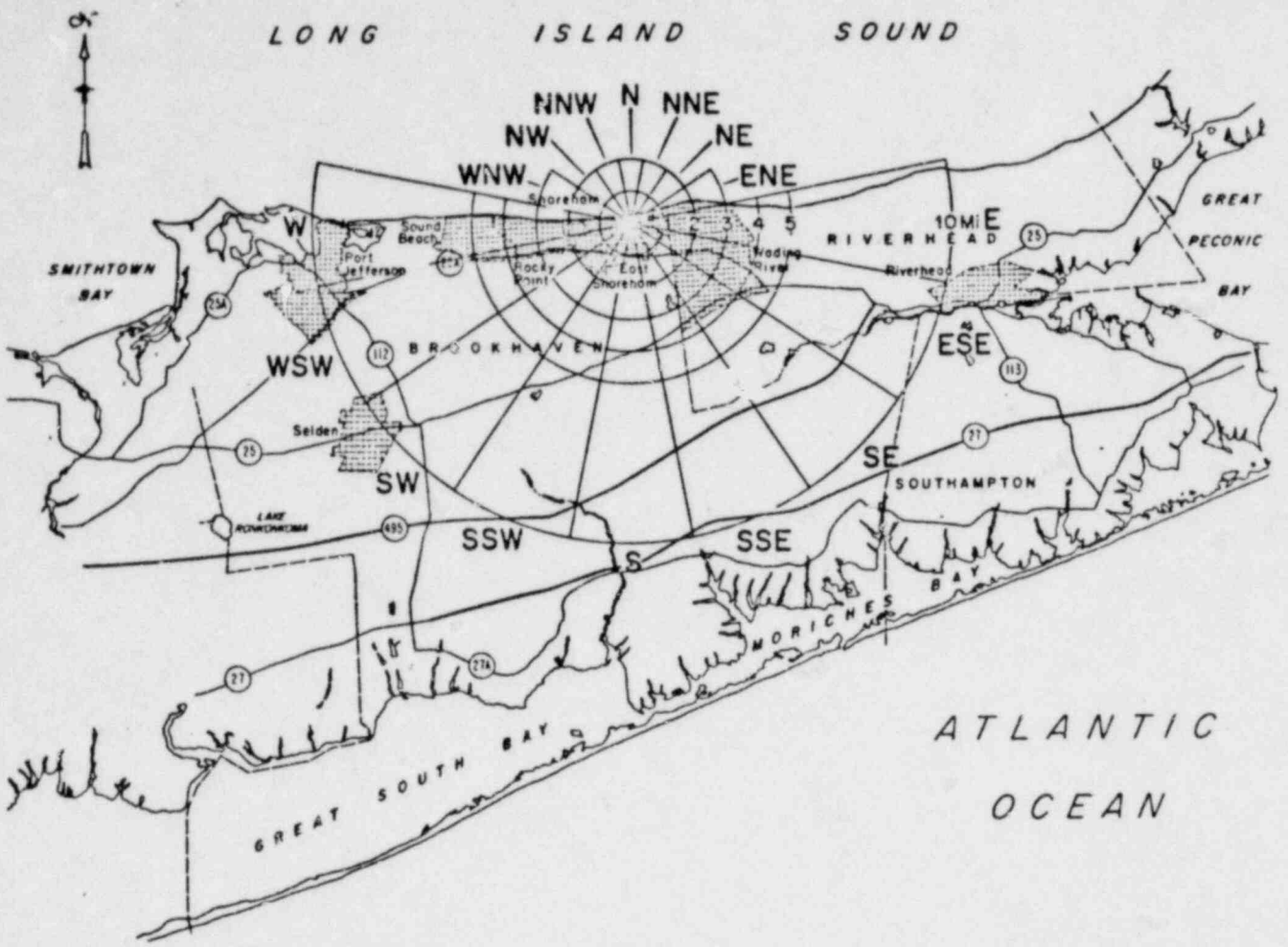
DIRECTION	DISTANCE IN MILES										
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
N	0	0	0	0	0	0	0	0	0	0	0
NNE	7	0	0	0	0	0	0	0	0	0	7
NE	48	0	0	0	0	0	0	0	0	0	48
ENE	318	748	150	0	0	0	0	0	0	0	1,216
E	50	940	1,960	1,425	585	1,120	352	582	922	177	8,113
ESE	152	452	372	26	710	30	130	522	2,805	1,072	6,269
SE	25	540	520	221	0	35	136	675	153	373	2,678
SSE	74	62	1,920	1,395	49	120	520	414	2,159	351	7,042
S	35	61	0	24	755	0	850	740	3,701	3,799	9,965
SSW	7	228	536	2,941	798	1,482	927	590	1,355	971	9,825
SW	7	762	23	0	207	1,023	2,274	2,658	5,189	4,800	16,952
WSW	93	1,513	1,056	638	317	805	857	4,654	5,000	3,676	26,461
W	608	1,090	2,818	3,762	4,348	5,906	4,025	4,113	1,947	4,321	32,938
WNW	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,424	6,396	9,395	10,430	7,769	10,521	10,071	14,958	24,628	25,722	121,314
CUM TOTAL		7,820	17,215	27,645	35,414	45,935	56,006	70,964	95,592	121,314	

WINTER

DIRECTION	DISTANCE IN MILES										
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
N	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	6	0	0	0	0	0	0	0	0	0	6
ENE	38	365	45	0	0	0	0	0	0	0	448
E	32	655	1,348	230	302	365	327	327	718	177	[illegible]
ESE	152	452	372	26	710	30	130	510	2,281	674	[illegible]
SE	25	550	239	165	0	0	66	605	153	375	[illegible]
SSE	74	62	1,038	857	49	15	345	414	2,059	[illegible]	[illegible]
S	35	51	0	24	724	0	475	537	3,379	3,519	[illegible]
SSW	7	228	536	2,541	798	1,415	974	314	1,126	471	[illegible]
SW	7	762	23	0	202	360	2,149	2,574	5,157	[illegible]	[illegible]
WSW	83	1,425	[illegible]	498	247	[illegible]	717	[illegible]	[illegible]	9,776	[illegible]
W	214	829	1,769	2,362	2,762	4,933	[illegible]	2,632	1,751	[illegible]	[illegible]
WNW	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0
TOTAL	673	5,409	6,315	7,103	5,799	8,412	7,808	12,549	23,234	24,952	102,254
CUM TOTAL		6,082	12,397	19,500	25,299	33,711	41,519	54,068	77,302	102,254	

1980 PROJECTED POPULATION
DISTRIBUTION - 10 MILE RADIUS

Figure 6-3.1



SUMMER

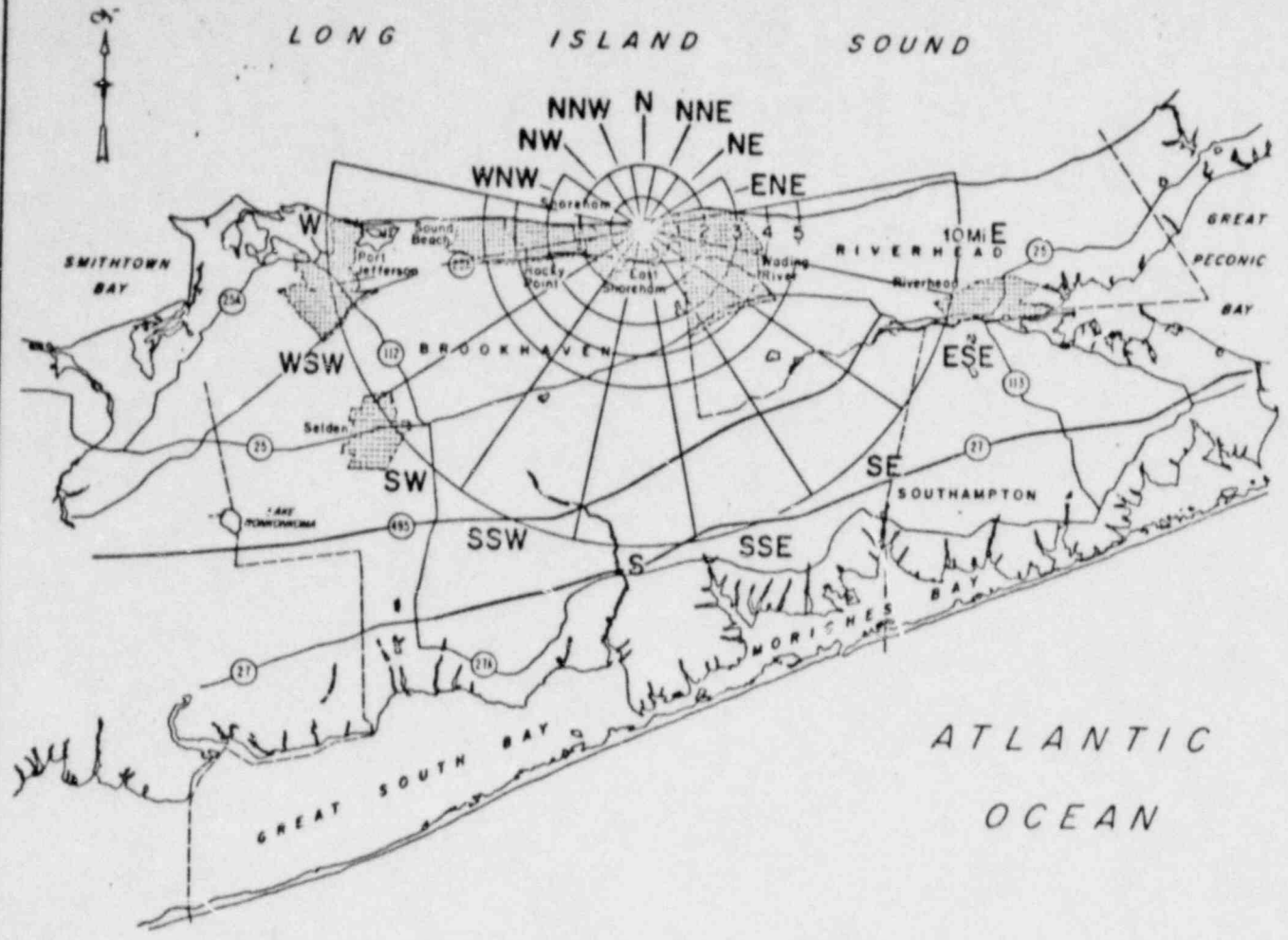
DIRECTION	DISTANCE IN MILES										
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
N	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
NNE	7	0	0	0	0	0	0	0	[illegible]	[illegible]	[illegible]
NE	52	0	0	0	0	0	0	0	[illegible]	[illegible]	[illegible]
ENE	343	793	161	0	0	0	0	0	[illegible]	[illegible]	[illegible]
E	71	1,316	2,799	1,484	654	1,208	326	662	1,0[illegible]	220	[illegible]
ESE	251	745	487	35	1,085	37	262	680	5,5[illegible]	1,297	9,[illegible]
SE	40	858	602	248	0	35	186	1,137	223	618	3,949
SSE	117	99	2,532	1,904	63	123	787	768	1,552	636	10,961
S	56	97	0	39	1,175	0	830	1,105	5,915	6,113	15,350
SSW	11	362	747	3,379	1,242	2,215	1,415	770	1,337	1,[illegible]	13,691
SW	11	1,209	37	0	333	1,334	3,376	4,200	8,117	6,170	24,777
WSW	120	1,678	1,220	711	551	540	1,249	7,824	10,531	11,471	35,895
W	734	1,457	3,072	4,063	4,725	7,704	5,375	5,544	5,102	4,573	42,349
WNW	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,813	8,864	11,157	11,883	9,608	13,654	13,661	27,690	38,484	32,628	164,442
CUM TOTAL		10,677	21,834	33,717	43,325	56,979	70,640	98,330	136,814	164,442	

WINTER

	DISTANCE IN MILES									
0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
[illegible]	0	0	0	0	0	0	0	0	0	[illegible]
[illegible]	0	0	0	0	0	0	0	0	0	[illegible]
[illegible]	0	0	0	0	0	0	0	0	0	[illegible]
93	411	56	0	0	0	0	0	0	0	[illegible]
53	1,071	1,667	289	551	453	301	407	894	220	[illegible]
54	745	487	35	1,085	37	262	656	3,215	1,098	[illegible]
6[illegible]	248	381	132	0	0	116	1,067	225	61[illegible]	[illegible]
117	99	1,650	1,368	63	18	612	768	3,552	606	[illegible]
56	97	0	39	1,144	0	425	902	5,503	5,633	[illegible]
11	362	747	3,379	1,242	2,147	1,277	504	1,748	[illegible]	[illegible]
11	1,209	37	0	333	1,331	3,180	4,106	8,555	6,170	[illegible]
110	1,840	1,010	571	281	826	1,119	7,756	10,531	[illegible]	[illegible]
340	1,195	2,027	[illegible]983	5,159	6,731	4,206	4,063	2,926	[illegible]	[illegible]
0	0	0	0	0	0	0	0	0	0	[illegible]
0	0	0	0	0	0	0	0	0	0	[illegible]
0	0	0	0	0	0	0	0	0	0	[illegible]
1,062	7,877	8,077	8,556	7,638	11,545	11,398	20,281	37,050	31,858	145,382
	8,939	17,016	25,572	33,210	44,755	56,153	76,434	113,324	145,382	

1990 PROJECTED POPULATION
DISTRIBUTION - 10 MILE RADIUS

Figure 6-3.2



SUMMER

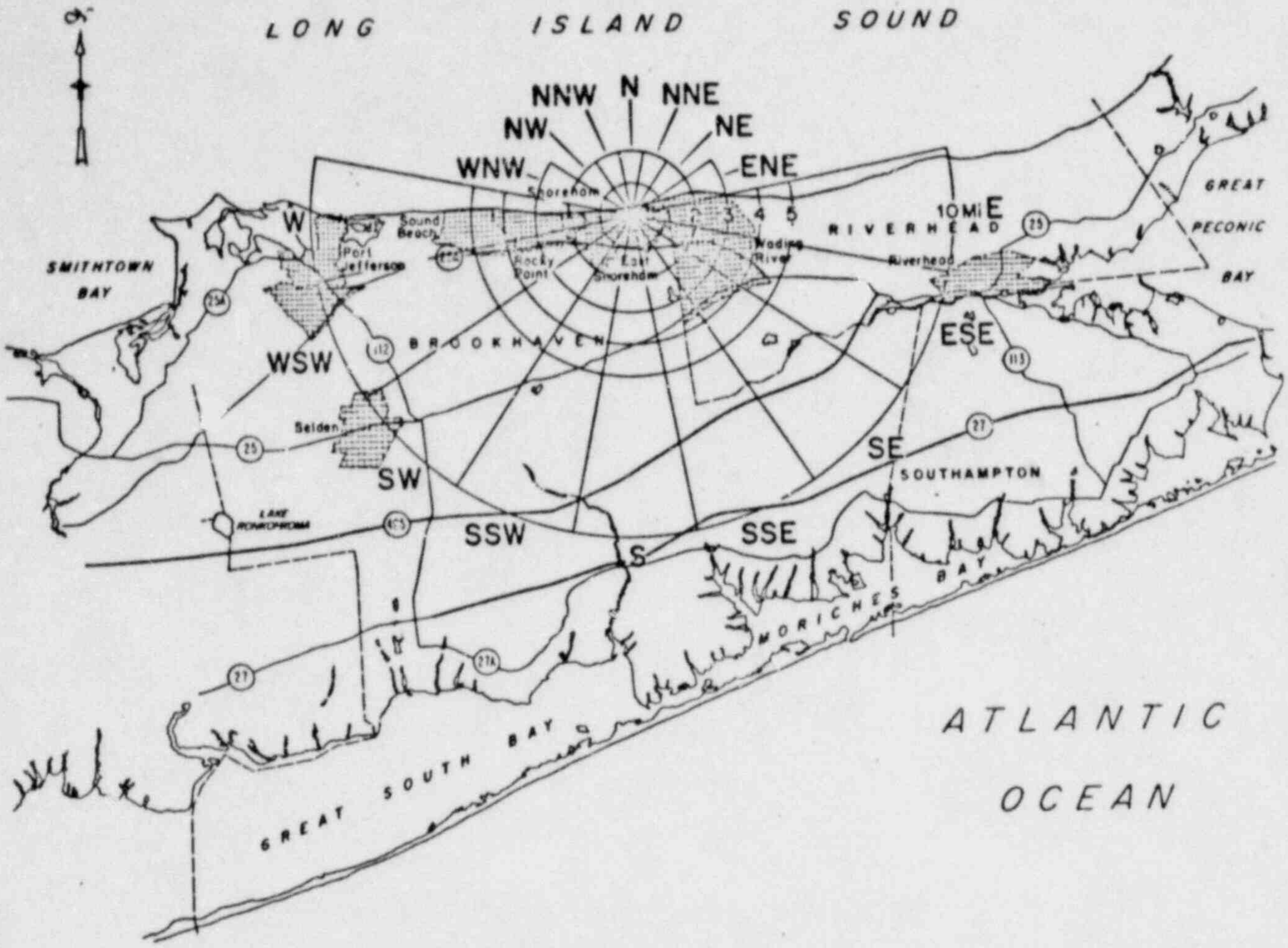
DIRECTION	DISTANCE IN MILES										
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
N	0	0	0	0	0	0	0	0	0	0	0
NNE	7	0	0	0	0	0	0	0	0	0	7
NE	54	0	0	0	0	0	0	0	0	0	54
ENE	354	814	172	0	0	0	0	0	0	0	1,340
E	80	1,566	2,638	1,542	875	1,519	587	744	1,277	226	10,392
ESE	254	875	582	673	1,278	44	195	814	4,147	1,456	9,769
SE	50	1,052	653	275	0	35	224	1,190	407	1,595	5,879
SSE	146	124	2,912	2,269	75	126	1,063	1,534	6,745	1,041	15,833
S	70	121	0	50	1,475	0	850	1,465	[illegible]	8,135	19,701
SSW	14	454	938	4,278	1,562	2,752	1,755	901	455	1,965	17,121
SW	14	1,514	46	0	425	1,660	4,174	5,294	10,251	7,075	30,455
WSW	140	2,237	1,325	776	581	1,044	1,462	6,871	12,025	12,395	41,827
W	826	1,705	3,289	4,372	5,064	8,942	6,176	6,211	5,561	5,193	47,255
WNW	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2,043	10,402	12,618	17,604	10,931	15,862	16,295	27,555	49,115	39,276	197,755
CUM TOTAL		12,445	25,063	38,667	49,598	65,460	81,755	109,310	158,425	197,755	

WINTER

DISTANCE IN MILES											
0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	12
14	432	67	[illegible]	[illegible]	0	0	0	0	0	[illegible]
42	1,261	2,076	34[illegible]	39[illegible]	564	362	449	1,073	224	[illegible]
294	875	582	42	1,278	44	155	802	3,825	1,561	[illegible]
50	1,042	432	219	0	0	134	1,720	407	1,333	5,417
146	124	2,090	1,733	75	21	886	1,334	6,678	1,141	[illegible]
70	121	0	[illegible]	[illegible]	1,444	0	425	[illegible]	[illegible]	[illegible]
14	454	938	4,278	1,562	2,726	1,622	641	2,207	[illegible]	[illegible]
14	1,514	46	0	425	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
150	2,149	1,118	636	511	932	1,522	8,943	12,653	[illegible]	[illegible]
426	1,445	2,252	2,972	3,478	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
1,292	9,415	9,538	10,277	8,561	13,755	14,010	25,184	47,719	[illegible]	178,675
	10,707	20,245	30,522	39,083	53,216	67,226	92,450	140,169	178,675	

2000 PROJECTED POPULATION
DISTRIBUTION - 10 MILE RADIUS

Figure 6-3.3



SUMMER

DIRECTION	DISTANCE IN MILES										
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
N	0	0	0	0	0	0	0	0	0	0	0
NNE	7	0	0	0	0	0	0	0	0	0	7
NE	55	0	0	0	0	0	0	0	0	0	55
ENE	361	827	178	0	0	0	0	0	0	0	1,366
E	86	1,619	2,820	1,573	685	1,370	420	788	1,374	246	10,991
ESE	320	953	834	46	1,393	48	213	866	4,474	1,605	10,572
SE	55	1,145	683	290	0	35	239	1,645	444	1,518	6,353
SSE	159	135	3,160	2,425	82	128	1,145	1,454	7,352	1,135	17,171
S	76	132	0	55	1,602	0	850	1,582	8,246	8,628	21,371
SSW	15	495	1,022	4,665	1,735	3,057	1,921	965	2,655	2,142	18,593
SW	15	1,650	50	0	461	1,874	4,545	5,262	11,149	7,710	33,144
WSW	152	2,430	1,429	833	409	1,128	1,581	9,778	13,835	13,329	45,352
W	858	1,835	3,451	4,639	5,377	9,550	6,630	6,762	3,654	5,596	46,542
WNW	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2,159	11,221	13,467	14,524	11,722	17,100	17,519	29,860	53,386	42,709	213,667
CUM TOTAL		13,380	26,847	41,371	53,093	70,193	87,712	117,572	170,958	213,667	

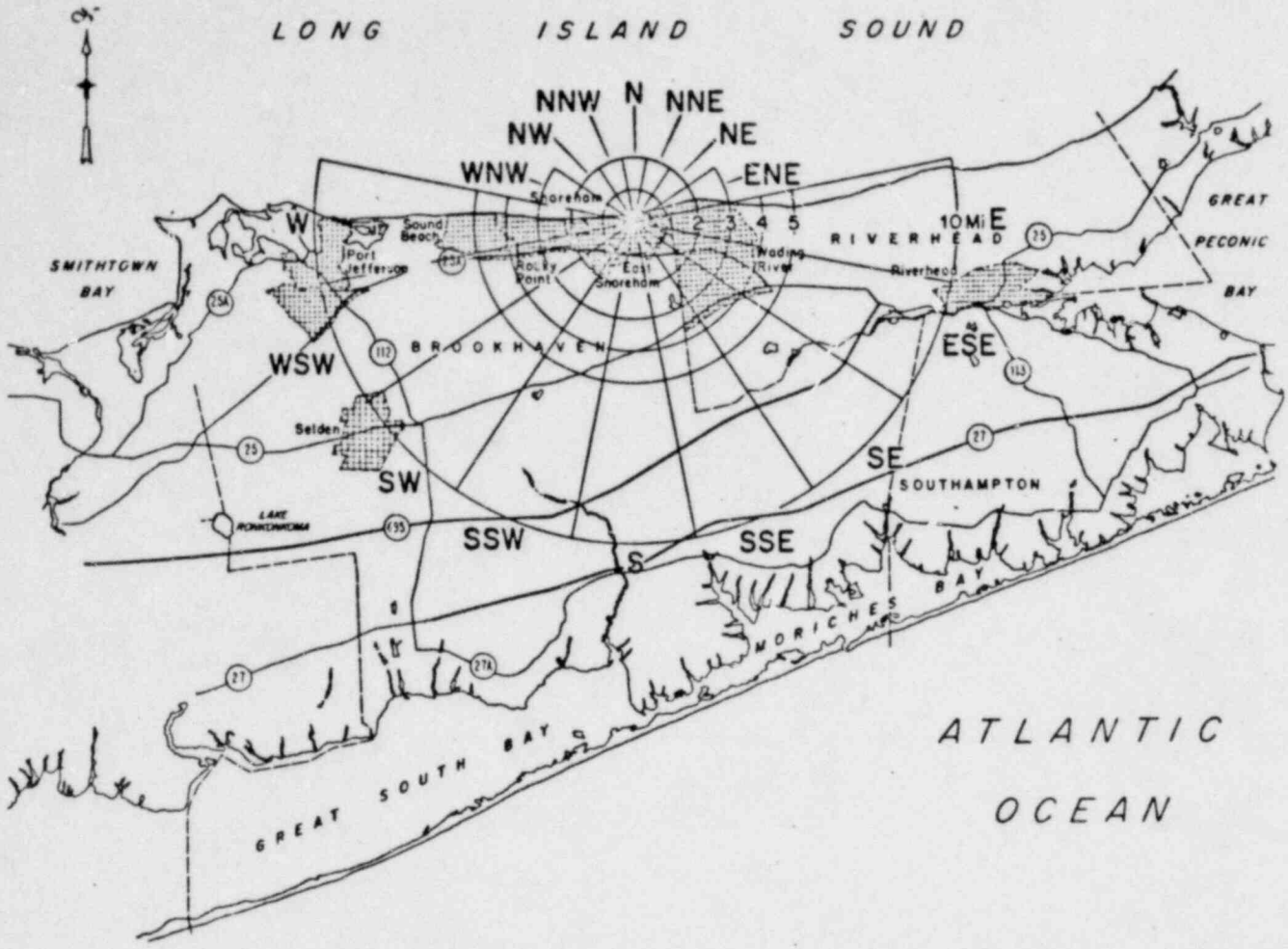
WINTER

DIRECTION	DISTANCE IN MILES										
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
N	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	13	0	0	0	0	0	0	0	0	0	13
ENE	81	445	73	0	0	0	0	0	0	0	599
E	68	1,374	2,208	378	412	615	395	[illegible]	1,170	245	[illegible]
ESE	320	953	634	46	1,393	48	213	874	4,152	1,407	[illegible]
SE	55	1,135	462	234	0	0	168	1,875	444	1,518	[illegible]
SSE	159	135	2,278	1,889	82	23	968	1,454	7,285	1,135	[illegible]
S	76	132	0	55	1,571	0	425	1,379	7,524	8,049	[illegible]
SSW	15	435	1,022	4,663	1,703	2,971	1,769	699	2,401	2,142	17,879
SW	15	1,550	50	0	461	1,741	4,417	5,668	11,118	[illegible]	[illegible]
WSW	142	2,342	1,215	655	339	1,016	1,441	9,748	13,835	13,553	[illegible]
W	464	1,573	2,441	3,225	3,791	8,577	5,461	5,221	3,658	5,404	39,859
WNW	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,408	10,234	10,587	11,197	9,752	14,991	15,256	27,451	51,562	41,939	194,557
CUM TOTAL		11,642	22,029	33,226	42,978	57,969	73,225	100,676	152,668	154,607	

2010 PROJECTED POPULATION
DISTRIBUTION - 10 MILE RADIUS

Figure 6-3.4

POOR ORIGINAL



SUMMER

DIRECTION	DISTANCE IN MILES										
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
N	0	0	0	0	0	0	0	0	0	0	0
NNE	7	0	0	0	0	0	0	0	0	0	7
NE	56	0	0	0	0	0	0	0	0	0	56
ENE	368	841	184	0	0	0	0	0	0	0	1,393
E	92	1,740	3,014	1,606	718	1,479	454	835	1,476	258	11,627
ESE	348	1,037	690	50	1,516	52	231	953	4,821	1,721	11,429
SE	60	1,245	715	306	0	55	252	2,110	463	1,652	6,858
SSE	173	147	5,361	2,592	89	130	1,228	1,582	7,991	1,235	18,528
S	83	143	0	60	1,757	0	850	1,705	8,943	9,537	23,078
SSW	16	539	1,112	5,073	1,853	3,299	2,057	1,026	3,857	2,330	20,167
SW	16	1,795	54	0	502	1,957	4,932	6,361	12,127	8,368	36,052
WSW	184	2,636	1,534	834	439	1,217	1,758	10,674	15,052	15,137	49,465
W	499	1,973	5,706	4,924	5,711	10,301	7,111	7,161	4,187	6,072	52,045
WNW	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2,282	12,096	14,372	15,505	12,565	18,419	18,823	32,275	57,917	46,270	230,624
CUM TOTAL		14,378	28,750	44,255	56,820	75,239	94,062	126,337	184,254	230,624	

WINTER

	DISTANCE IN MILES										
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	TOTAL
N	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	14	0	0	0	0	0	0	0	0	0	14
ENE	88	459	79	0	0	0	0	0	0	0	626
E	74	1,435	2,402	411	435	569	429	580	1,272	268	8,075
ESE	348	1,037	690	50	1,516	52	231	951	4,499	1,523	10,897
SE	60	1,255	454	250	0	0	182	2,040	493	1,652	6,376
SSE	173	147	2,579	2,056	89	25	1,053	1,582	7,971	1,235	16,760
S	83	143	0	60	1,706	0	425	1,500	8,621	9,287	21,825
SSW	16	539	1,112	5,073	1,853	3,233	1,924	760	2,628	2,330	19,448
SW	16	1,795	54	0	502	1,894	4,800	6,187	12,056	8,368	35,672
WSW	154	2,548	1,526	754	369	1,105	1,568	10,608	15,052	15,137	48,821
W	505	1,711	2,656	3,924	4,125	9,332	5,942	5,455	3,891	5,810	43,351
WNW	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,531	11,109	11,292	12,178	10,595	16,310	16,560	29,866	56,523	45,600	211,564
CUM TOTAL		12,640	23,932	36,110	46,705	63,015	79,575	109,441	165,964	211,564	

2020 PROJECTED POPULATION
DISTRIBUTION - 10 MILE RADIUS

Figure 6-3.5

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 7

7.0 EMERGENCY FACILITIES AND EQUIPMENT

This section of the Emergency Plan identifies and gives the locations of facilities and equipment that are provided and maintained by LILCO or by a responsible governmental agency to ensure a ready state of preparedness, and the capacity to respond promptly and efficiently to any given emergency situation.

7.1 Emergency Control Centers

Onsite and offsite emergency control centers are identified and described in this section including their location relative to the reactor. Also discussed is the interface of communication and monitoring systems used to initiate emergency measures.

The emergency control centers are as follows:

1. Control Room (CR)
2. Emergency Operations Facility (EOF)
3. Technical Support Center (TSC)
4. Operational Support Center (OSC)
5. Emergency News Center (ENC)
6. Suffolk County Emergency Operations Center (EOC)
7. New York State Emergency Operations Center (EOC)
8. Support Corporate Emergency Response and Recovery Center (SCERRC)

7.1.1 Control Room (CR)

Initially, the Control Room is the primary location for

assessment and coordination of corrective and protective actions for essentially all emergency conditions. Readouts and assessment aids interrelated with meteorological and radiological dose calculation data are also provided.

Access to the Control Room shall be limited to only those individuals with specific responsibilities for direct station operation along with technical advisors selected by the Emergency Director.

Various control responsibilities which are initially conducted in the Control Room will be transferred to the EOF, TSC and OSC, as appropriate, after those facilities have been activated.

7.1.2 Emergency Operations Facility (EOF)

The Company's Training Center in Hauppauge has been designated the Emergency Operations Facility. The facility is located approximately 18.5 miles from the reactor. Corporate, Federal and State officials may assemble at this location. This facility will be the center for the receipt and analysis of all field monitoring data available from Federal, State, local and LILCO field teams. Specific media personnel will be escorted to the EOF to observe operations when conditions permit. More detailed information on this center, including types of data displays, available documents, is contained in SNRC-573, dated May, 1981.

7.1.3 Technical Support Center (TSC)

The onsite Technical Support Center will be temporarily located in the Security Building on the second floor. The Security Building is adjacent to the Station, inside the protected area. A permanent TSC is under construction as part of the new Office and Service Building. Drinking water and food supplies will be contained in the TSC. More detailed information of these centers, including types of data displays and available documents is contained in SNRC-486, dated July 21, 1980; SNRC-506, dated September 16, 1980; and SNRC-573, dated May, 1981.

7.1.4 Operational Support Center (OSC)

The Operational Support Center is located in the Office and Service Building (Maze area) located north-northwest of the Reactor Building, adjacent to the Turbine Building, as one of the reporting locations for personnel reporting to the site under emergency conditions.

7.1.5 Emergency News Center (ENC)

The Emergency News Center will be established at a local motel and will be ready to accommodate the news media with such facilities as a large press conference area and working press area, smaller rooms for interviews and briefings, telephones, typewriters, food services and parking. Also, the ENC contains sufficient office space for LILCO communications staff as well as for communications

personnel from the NRC, FEMA, State and local agencies.

7.1.6 Suffolk County Emergency Operations Center (SCEOC)

The Suffolk County Emergency Operations Center is located in the basement of the Suffolk County Probation Building in Yaphank, New York. The Suffolk County Warning Point is a 24-hour communications center with multiple modes of communication. During normal business hours, the functions of the County Warning Point are carried out by the Department of Emergency Preparedness. During non-business hours, weekends and holidays, the County Warning Point functions are carried out by the Suffolk County Department of Fire Safety and the EOC Duty Officer.

Communications between the site, County, Southern District ODP and the State's Albany office are facilitated by use of the Hotline, the NAWAS dedicated phone system, and commercial telephone lines. Radios are used as back-up systems for emergencies. Upon activation, either by the State Commissioner of Health or the Suffolk County Emergency Preparedness Office, communications, planning and coordination personnel will be available to assist with the appropriate emergency response.

7.1.7 New York State Emergency Operations Center (NYSEOC)

The State Emergency Operations Center is located in the substructure of the Public Security Building, State Office

Building Campus, Albany, New York. State Warning Point communications system and the Office of Disaster Preparedness are also located in this center. Communication systems operate on an around-the-clock basis. Upon activation, planning and coordination personnel will be available to assist with the appropriate emergency response. Communications between the site and New York State are carried out by the Hotline, the NAWAS dedicated telephone system and commercial telephone lines with a dedicated radio system as a back-up.

7.1.8 Support Corporate Emergency Response and Recovery Center (SCERRC)

The Support Corporate Emergency Response and Recovery Center is located at the load control center of the LILCO Operations Office in Hicksville, New York. SNPS is approximately 45 miles east-northeast of Hicksville. The Support Corporate Emergency Response Team consists of Company officials drawn from the various departments affected by the emergency. This team provides administrative, logistic, technical, informational, communications and personnel support to the Recovery Manager.

7.2 Communications Systems

The SNPS communication capabilities include multiple systems and redundant power supplies which ensure the transmitting and receiving of vital information within the plant and with locations

onsite and offsite. Table 7-1 shows the multiple communication modes and where each mode is available for emergency communications.

Following is a list of available communication systems with a brief description of the intended use of each:

7.2.1 Hotline

This communications link will be the primary means for notification of the State and County of emergency conditions at Shoreham. These dedicated phone lines, made operational upon pick-up of the receiver and selection of desired location, shall provide the capability enabling any and all of the following locations to communicate simultaneously:

Control Room

Technical Support Center

Emergency Operations Facility

New York State Emergency Operations Center (Albany)

New York State Southern District Office (Poughkeepsie)

Suffolk County Emergency Operations Center

7.2.2 Dedicated Lines

In addition to the Hotline, dedicated lines will be installed as the primary means of communication with the Nuclear Regulatory Commission and for intra-Company communications.

This will be a dedicated phone system which will allow simultaneous communication with the NRC's Bethesda Office and their King Of Prussia Regional Office.

Internally, there will be three separate dedicated lines; one for use between the Control Room and the TSC. Another will be for use between the TSC, EOF and the SCERRC. Lastly, there will be a dedicated line between the EOF and the ENC.

7.2.3 National Alert Warning System (NAWAS)

A dedicated NAWAS line will serve as the primary back-up communication link between the Shoreham site and offsite officials.

7.2.4 Commercial Telephone

The commercial telephone system consists of various dial-type telephones connected to the New York Bell Telephone System. These phones provide a means of communication offsite, and may be used as another back-up to the Hotline. They are located in various parts of the plant as well as the following:

Control Room

Technical Support Center

Operational Support Center

Emergency Operations Facility

7.2.5 Emergency Card Dialer Phone

The emergency card dialer phone is connected to the commercial telephone system and has automatic dialing capability by insertion of pre-coded dialing cards. This phone shall be located in the Control Room, and can be moved to the Technical Support Center when it is activated.

7.2.6 Private Automatic Exchange

The private automatic telephone exchange consists of a network of commercial telephones that may be used in the dialing mode for intra-site communications. These phones are located throughout the plant including the following locations:

Control Room

Technical Support Center

Operational Support Center

Several essential members of the emergency organization shall have phones tied into this network installed in their private homes. They may include, but not be limited to, the following personnel:

Plant Manager

Chief Technical Engineer

Chief Operating Engineer

Health Physics Engineer

Operating Engineer

Reactor Engineer

Security Supervisor

7.2.7 Public Address and Party Line

Six separate and independent communications channels, one page and five party lines, exist to provide voice communications between two or more locations within the plant, even in areas of extreme noise. The page channel is used to call personnel over the speakers, issue plantwide instructions or communicate between two or more handsets. The party lines are used to carry on intercommunications after the page channel call is completed. Audio tone signals can be introduced into this system to allow for possible fire, system emergencies, etc. Each handset and speaker has its own amplifier and they are independent of all other components in the system with respect to their operation. The page/party line system is supplied by an uninterruptible power source and is not dependent upon the onsite supply. This system is located throughout the site, as well as the following areas:

Control Room

Technical Support Center

Operational Support Center

7.2.8 Sound Powered Telephone

The sound powered telephone system consists of independent string circuits connecting critical points in the plant. Communications within the system is by means of sound powered, portable headsets which can be plugged into any jack along a string circuit located throughout the plant. The sound powered phone system requires no power and is not affected by a loss of site power. This system shall be located in the following locations, as well as various areas within the plant:

Control Room

Technical Support Center

Operational Support Center

7.2.9 Beepers

In conjunction with the call-out by commercial telephone of Company personnel essential to the emergency organizations, beepers will also be activated. Upon activation of beepers, personnel shall call in on predetermined phone numbers to be given the course of action to be taken, plus any pertinent information regarding the emergency situation. Personnel issued beepers may include, but not be limited to, the following:

Plant Manager

Chief Technical Engineer

Chief Operating Engineer

Health Physics Engineer

Operating Engineer

Reactor Engineer

Security Supervisor

7.2.10 Two-Way Radio

A low powered UHF Radio Base Station with two frequencies, is established at the plant for communications between the Control Room Radio Communications Center, mobile car units, and portable "walkie-talkie" units, as well as with offsite locations.

A third frequency on this UHF Radio Base Station shall be established to provide the capability of two-way voice communication link between the station and police.

A VHF Radio Base Station shall be established for communications between the Control Room, the LILCO Operations Center in Hicksville and the Emergency Operations Facility.

7.3 Assessment Facilities

The following instrumentation and monitoring techniques are available for emergency assessment in each of the categories listed below:

7.3.1 Natural Phenomena

In the event an emergency is the result of a natural phenomenon, there is instrumentation to monitor its severity. Seismic monitoring is accomplished by a time history acceleration system which records triaxial acceleration from three discrete locations. This system provides monitoring and recording capabilities of impact motion and behavior of the plant in the event of an earthquake. The seismic monitoring system also provides an audible and visual annunciation to indicate to the Control Room operator a seismic event.

The existing meteorological measurement system is explained in Section 2.3.3 of the FSAR. This system will be supplemented as follows:

1. Sigma theta ($\sigma\Theta$) measurements will be added.
2. An uninterruptible power system capable of providing at least 40 minutes of uninterruptible power to the meteorological system will be added.
3. A remote interrogation system and storage capability for the meteorological system will be added to provide real-time and historical data access for at least the past 12 hours, in 15-minute averages.
4. A 10 meter back-up tower will be installed in compliance with NUREG-0654.

7.3.2 Radiological Monitors

Offsite radiological monitoring is discussed in general in Section 6.1.2. Details of the program and equipment are presented below.

The offsite teams will be equipped with site area maps showing preselected radiological sampling and monitoring points, airborne particulate sampling equipment, airborne iodine sampling and measurement equipment, and portable beta/gamma dose rate meters. An additional set of this equipment will be available in the EOF for use by a supplementary team or as a back-up. The teams will take beta/gamma dose rate measurements at each location and report the results to the TSC/EOF via radio. Airborne particulate and iodine samples will be taken at each location.

The airborne iodine samples will be analyzed in the field with the capability of detecting 10^{-7} µCi/cc radioiodine (as I-131). The results of these analyses will be transmitted to the TSC/EOF via radio. A detailed list of available survey team equipment is given in Appendix E.

Figures 7-1.1 and 7-1.2 show the REMP sampling and measurement locations. This program will be conducted under the direction of the Emergency Director in the event of an emergency.

In general, airborne particulate and iodine, TLDs, milk and edible vegetation will be collected within 24 hours of an emergency and will continue to be collected daily until the emergency ends. The Emergency Director will be able to accelerate or decelerate the sampling frequency based on REMP results and expected effluent discharges. The EOF will be in constant radio contact with the Radiological Monitoring Teams.

7.4 Protective Facilities and Equipment

7.4.1 Plant Control Room

The Plant Control Room has the following features which provide protection for personnel who may have emergency or operational duties throughout the course of any emergency:

1. Adequate shielding by concrete walls to limit radiation exposures to Control Room personnel to less than 5 rem whole body or its equivalent to any part of the body for the duration of a design basis accident.
2. Fresh, filtered and monitored air taken from either one of two separate air intakes and a working atmosphere of 75°F and 60 percent relative humidity.
3. Suitable sanitary, hygenic and sleeping facilities.
4. Fire protection warning and fire fighting equipment.

5. Protection from accidental toxic gaseous releases from onsite and offsite sources.

6. Emergency lighting and power, supplied by a 125V DC system.

7. Communications systems, as described in Section 7.2.

Additional details regarding the design and inherent protective capabilities of the Plant Control Room are discussed in the SNPS FSAR (Section 6.4).

7.4.2 First Aid and Medical Facilities

The First Aid Station is located in the Service Building near the health physics office and decontamination area. First aid supplies are provided in this room. Stretchers and first aid kits are located strategically throughout the plant. At least two persons on each shift will be trained in first aid techniques. Plant personnel requiring hospitalization will be transported to the hospital by volunteer or private ambulance, Company vehicle, or private cars of Station employees. Letters of agreement for ambulance service and hospital treatment are included in Appendix B.

7.4.3 Decontamination Facilities for Plant Personnel

Personnel decontamination will be accomplished, whenever possible, in the decontamination room. The decontamination

room is located in the Service Building near the First Aid Station and the health physics office. This room contains showers, sinks, and wash basins. All drains will lead to the radioactive liquid waste system where the liquid will be processed and monitored prior to discharge. Solid waste is disposed of in containers provided for this purpose. The decontamination area is located away from any area likely to be subjected to radiation.

A typical listing of decontamination equipment is contained in Appendix E.

7.4.4 Damage Control Equipment and Supplies

The Station maintains an adequate supply of damage control equipment and supplies. Such equipment and supplies consists of full face respirators with proper filters or cannisters, SCBA respirators, air supplied respirators, silver-zeolite cartridges (radioiodine sampling), portable sampling equipment, portable radiation survey instrumentation, polyethylene bags and bottles, radiation signs and rope, radioactive waste containers, ion-exchange resin (liquid waste processing), walkie-talkies, beepers, various communications systems and portable lighting equipment. This equipment is normally stored in the health physics office and warehouse. This equipment is periodically (at least once each quarter) inspected and inventoried. Equipment in need of calibration

or repair will be replaced; however, there shall be sufficient equipment available as reserves in the emergency supplies to ensure a minimum inventory if delay is experienced in replacing equipment. Portable survey instrumentation is calibrated quarterly and count room instrumentation annually (source checked daily).

TABLE 7-1

A. Control Room

1. Hotline
2. Dedicated Lines
3. NAWAS
4. Commercial Telephone
5. Private Automatic Exchange
6. Page/Party System
7. Sound Powered Phone
8. Card Dialer Phone
9. Radio

B. Technical Support Center

1. Hotline
2. Dedicated Lines
3. NAWAS
4. Commercial Telephone
5. Private Automatic Exchange
6. Page/Party System
7. Sound Powered Phone
8. (Card Dialer Phone)
9. Radio

C. Operational Support Center

1. Commercial Telephone
2. Private Automatic Exchange
3. Page/Party System

D. Emergency Operations Facility

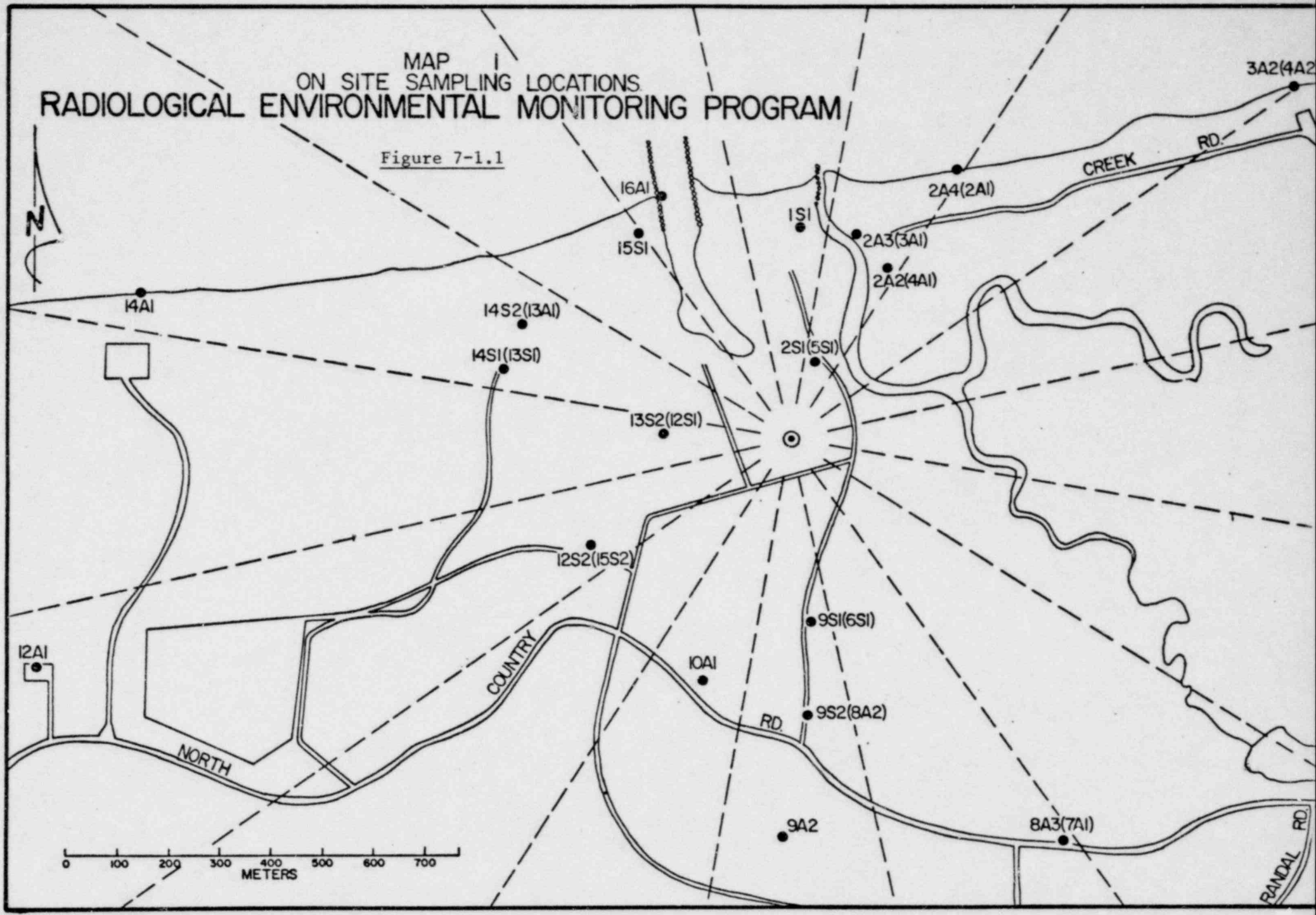
1. Hotline
2. Dedicated Lines
3. NAWAS
4. Commercial Telephone
5. Private Automatic Exchange
6. Radio

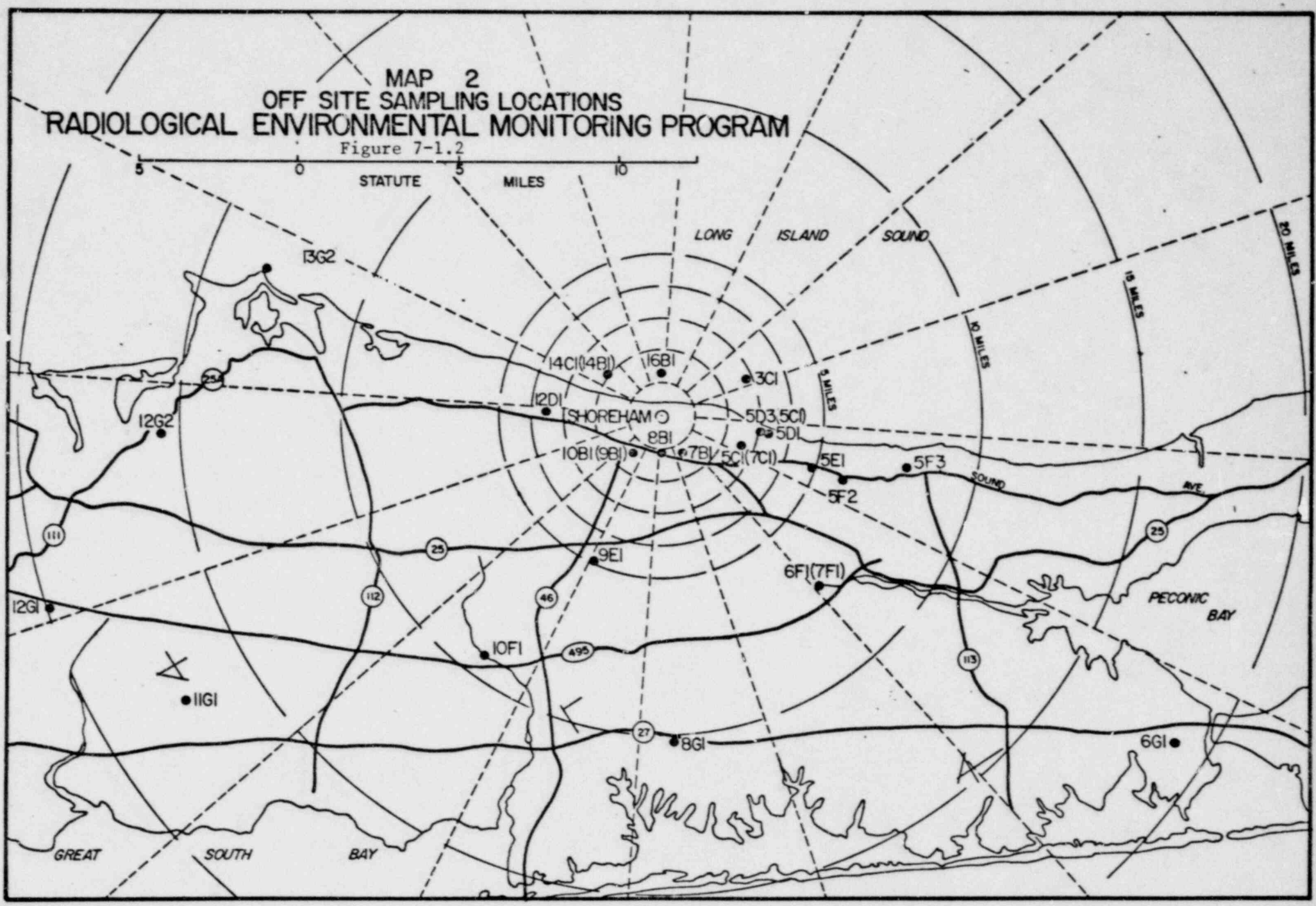
E. New York State Emergency Operations Center

1. Hotline
2. NAWAS
3. Commercial Telephone
4. Radio

F. Suffolk County Emergency Operations Center

1. Hotline
2. NAWAS
3. Commercial Telephone
4. Radio


MAP I
ON SITE SAMPLING LOCATIONS
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
Figure 7-1.1
N
16A1
15S1
1S1
2A4(2A1)
3A2(4A2
CREEK
RD.
2A3(3A1)
2A2(4A1)
14A1
14S2(13A1)
14S1(13S1)
2S1(5S1)
13S2(12S1)
12S2(15S2)
9S1(6S1)
12A1
10A1
COUNTRY
RD.
9S2(8A2)
NORTH
9A2
8A3(7A1)
RANDAL RD.
0 100 200 300 400 500 600 700
METERS


MAP 2
OFF SITE SAMPLING LOCATIONS
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
Figure 7-1.2
5 0 5 10
STATUTE MILES
LONG ISLAND SOUND
5 MILES
10 MILES
15 MILES
20 MILES
13G2
14C1(14B1)
16B1
3C1
12D1
SHOREHAM
5D3,5C1)
5D1
12G2
8B1
10B1(9B1)
7B1
5C1(7C1)
5E1
5F3
5F2
SOUND
AVE.
9E1
6F1(7F1)
12G1
PECONIC BAY
10F1
11G1
8G1
6G1
GREAT SOUTH BAY
111
25
112
46
495
113
27

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 8

8.0 MAINTAINING EMERGENCY PREPAREDNESS

Continual emergency preparedness is maintained through initial training and periodic retraining, timely emergency drills and exercises, review and update of emergency plans and procedures, maintenance inventory of emergency equipment and supplies, and public information and education programs. The overall authority and responsibility for radiological emergency response planning and preparedness rests with the Vice President-Nuclear. The methods for maintaining emergency preparedness are described in this section.

8.1 Organizational Preparedness

Organizational preparedness for emergencies is developed using a combination of initial training and periodic retraining, and periodic drills and exercises to test the adequacy of timing and content of implementing procedures and methods, to test emergency equipment, and to ensure that emergency organization personnel are familiar with their duties.

8.1.1 Training

Each LILCO employee assigned to the Shoreham Nuclear Power Station, including those on a temporary basis or in training status, is initially trained and tested via formal classroom sessions on the station's Emergency Plan and on his individual responsibilities. Thereafter, retraining sessions in the EPIPs are conducted once per calendar year. Personnel are assigned EPIPs they must be familiar with for their specific

emergency functions. Alarms, assembly areas and individual responsibilities are stressed.

The training will be conducted in a formal fashion with evaluations made at the end as to the individual's qualifications. The training program shall include, where applicable, practical drills in which each individual demonstrates the ability to perform assigned emergency duties. During the practical drills, on-the-spot corrections of erroneous performance shall be made and a demonstration of proper performance given to the individual. A written evaluation will be made on the performance of each drill and shall be reviewed with the drill's participants. Retraining will be conducted once per calendar year.

All offsite agencies who will be called upon to participate in the Plan will be invited to attend an orientation course at SNPS to ensure that they are familiar with the plant lay-out and their actions in the event of an accident.

Specialized initial training and periodic retraining programs are as follows:

1. Emergency Directors and Managers

   Emergency Directors and Managers, those individuals designated to supervise and direct emergency response positions, will receive training regarding the scope, responsibilities, and functions of the Emergency Plan

and implementing procedures. They will also receive training in supervision of emergency teams, interpretation of data, estimation of offsite radiation doses, and coordination and communication with offsite agencies. Retraining will occur once per calendar year.

2. Accident Assessment and Control Room Personnel

Accident assessment and Control Room personnel will receive training regarding methods of assessment, corrective actions, protective actions, and the location and function of all facilities. Retraining will occur on an annual basis.

3. Radiological Monitoring Teams

Radiological monitoring training will be given to plant operation and maintenance personnel who may be required to perform surveys and reentry without the assistance of the chemistry and health physics personnel. Health physics personnel receive extensive training for their normal duties and/or Radiological Monitoring Team functions. Training on new monitoring equipment will occur upon the institution of such equipment. Retraining on Emergency Plan Implementing Procedures will occur annually.

Retraining of offsite survey teams will be included as part of the annual drills described in Section 8.1.2.

Retraining of Radiological Environmental Monitoring Program personnel will not be required since they perform their tasks on a continual basis.

4. Fire Brigade

Selected station personnel will be trained in fire fighting. Each shift complement will have the capability to respond to all fires. Shift personnel will be supplemented as necessary by additional station personnel and offsite agencies. The training of fire fighting personnel will be in accordance with SNPS procedure 69.001.03.

5. Repair and Damage Control Teams

Those individuals assigned to repair and damage control will receive selective training in their roles and functions during emergencies. The training includes intensive system review with an emphasis on accident-related assignments and repairs. Review of damage control and repair operations will occur semi-annually.

6. First Aid and Rescue Teams

Selected station personnel will receive Red Cross Standard First Aid and Personal Safety Course training to ensure that at least two members each shift hold a valid certificate. Training will include the care and transportation of contaminated patients as well as the medical aspects of the Emergency Plan. First Aid

retraining will occur as required (every three years) to maintain certification. Emergency Plan retraining will be conducted annually.

7. Local Support Services Personnel

All members from local fire and ambulance companies will be given the opportunity to receive an initial familiarization training session at SNPS to ensure that they are familiar with the plant layout and their actions in the event of an incident. In addition, fire department personnel will be trained in notification procedures, health physics, applicable station procedures, and plant layout. This training will be available to new fire department personnel on an as-needed basis. Changes in applicable station procedures and plant layout hazards will be transmitted to them as necessary to keep the fire departments up-to-date.

8. Medical Support Personnel

Company medical support personnel at the facility or those who are likely to be called to the station shall receive radiological response training, and retraining sessions once per calendar year thereafter.

Central Suffolk Hospital has a designated plan, a qualified staff, and required equipment to handle contaminated and/or overexposed individuals. This plan requires the alerting of selected trained staff

members, monitoring and restricted areas through which potentially contaminated personnel may pass. Training is coordinated with the medical emergency drill, Section 8.1.2.2.

9. LILCO Headquarters Support Personnel

Those individuals designated in the Corporate Nuclear Emergency Response Plan responding to a SNPS emergency will receive training in their roles and functions during such emergencies. This training will be conducted at the Company's Corporate Headquarters, as well as on-site, with retraining sessions provided once per calendar year.

The training will be documented and annually assessed for suitability. Initial training programs will be separate from retraining programs. These programs will cover the specifics of individual assignments as well as the interface with other response actions.

10. Nuclear Emergency Communications Personnel

The effectiveness of LILCO's Nuclear Emergency Communications Plan will depend largely on steps taken before an event takes place; the close interrelationship of the plant operating, technical support, and information staffs; the forethought given to procedures; and the commitment to prompt, candid

explanations of ev..ts. Following are major steps that will be taken in advance to plan for communications during an emergency situation.

(a) Emergency Communications Staff

The Emergency Communications Staff will be educated and updated on generic nuclear issues, site-specific issues, and the emergency plans developed by the Company as well as County, State and Federal authorities. Additional education regarding nuclear engineering, plant operations, radiation and other technical issues will be conducted by the Shoreham staff personnel. These personnel will be members of the communications staff stationed permanently at the Shoreham facility who are thoroughly familiar with technical issues and serve as information liaisons.

(b) Advance Orientation of Governmental Officals and Media

Programs will be developed to acquaint officials and media with the emergency plans, information concerning radiation, and points of contact for release of public information in an emergency.

(c) Materials Intended for Public Information

If an emergency occurs, LILCO will have information kits at its division offices, headquarters

and operations centers, and Emergency News Center. Such kits will include fact sheets, charts and photos, and a glossary of nuclear and emergency related terminology. Also, LILCO will keep readily accessible such visual aids as diagrams, flip charts, scale models, films, video-tapes, and rearview portable viewers, all of which are intended to help explain a plant-related event to the media and community.

(d) Emergency News Center

A serious accident or slowly developing threat can attract hundreds of media representatives. The Emergency News Center is located offsite, but near to the Emergency Operations Facility and will be ready to accommodate the media with such facilities as a large press conference area and working press area, smaller rooms for interviews and briefings, telephones, typewriters, food services and parking. Also, the Emergency News Center will contain sufficient office space for LILCO communications staff as well as for Public Information Officers (PIOs) from the NRC, FEMA, State and County agencies.

(e) Communications Links

An event of any duration will require reliable and continuous communication between the EOF,

Corporate Headquarters and the Emergency News Center. Dedicated lines will be installed at these links by the local telephone company on immediate notice. Also, the telephone company is prepared to install multiple lines at the Emergency News Center. In addition, beepers will be provided for all high-level officials involved in the recovery, drivers will be made available for hand delivery of messages, and UHF/VHF radios will be available for assured communications.

8.1.2 Drills

Drills based on simulated emergency conditions will be staged to ensure maximum effectiveness of the Plan and to keep personnel aware of their responsibility should such an incident occur. A drill may be a component of an exercise. These drills are held at least annually and appropriate offsite agencies are requested to participate or observe the drill(s) where applicable. Applicable EPIPs shall be utilized to ensure accountability, adequacy of the communication systems and overall response to the scenario. Audit personnel shall be stationed at various locations to audit response to, and adequacy of the Plan. Simulated emergency conditions shall be reviewed and approved by the Nuclear Review Board and the Review of Operations Committee (ROC) prior to the drill. Both the

Nuclear Review Board and the ROC shall also review critique reports of the drill. Definitive performance criteria will be established for all levels of participation to assure an objective evaluation.

1. Fire Drills

   Fire drills shall be conducted in accordance with the requirements of the Shoreham Technical Specifications.

2. Medical Emergency Drills

   A medical emergency involving a simulated contaminated individual that involves participation by local service agencies including the Central Suffolk Hospital, shall be conducted annually. The drill shall involve the actual transportation of a simulated victim. The medical drill may be coordinated with item 8.1.1.6 of this Plan.

3. Radiological Monitoring Drills

   Station environs and radiological monitoring drills shall be conducted annually both onsite and offsite. These drills shall include the collection and analysis of samples that include, but are not limited to, water, grass, soil and air, and shall include provisions for communications and record keeping.

4. Health Physics Drills

Health physics drills shall be conducted semi-annually which involve responses to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements of the environment. In addition, drills conducted annually by the shift operators shall include in-plant liquid samples with actual elevated radiation levels for analysis by Health Physics. The shift on which the drill is carried out shall be changed each year.

5. Communication Drills and Testing

A combined communication drill shall be performed annually. The drill will be pre-selected as to day of the week and time, and will be varied from year to year. The drill will be monitored and the results and critique shall be evaluated. The annual drill shall involve Federal, State, County and Corporate telephone and radio circuits, and shall also require call-back verification where applicable.

Testing shall be separate from drills and will be performed on the following schedule:

(a) Communications with New York State and Suffolk County - once a month.

(b) Communications with Federal emergency response organizations - quarterly.

(c) Communications between LILCO, New York State and Suffolk County EOCs and field assessment teams - annually.

6. Evaluation and Records

The results of all the aforementioned drills shall be documented and commented upon by the instructor(s) in charge of the drill. Records shall be maintained for at least five years on the results of both drills and, where appropriate, the individual's performance, so as to compare the results of both to previous performances. Recommendations should be made if the quality of the drill can be improved.

8.1.3 Exercises

A combined exercise involving State, local and station personnel shall be conducted annually. The scenario for the exercise shall be mutually agreed upon by those involved. The scenario shall include, but not be limited to, the following:

1. The basic objective of the exercise.
2. The date, time and place of the exercise.
3. The organizations participating in the exercise.

4. The simulated events.

5. The time schedule of real and simulated initiating events.

6. A narrative summary of the exercise including simulated casualties, offsite assistance, use of protective clothing, deployment of monitoring teams, communications, rescue of personnel, and public relations.

7. Arrangements for qualified observers.

The scenarios will be rotated each year to ensure all major elements of the plan are tested over a five-year period. At least once every six years an exercise shall be scheduled to take place between 6:00 P.M. and midnight and another between midnight and 6:00 A.M. Exercises shall be conducted under various weather conditions. Some exercises shall be unannounced.

Qualified observers from Federal, State and local governments shall be invited to participate and/or critique all exercises of emergency preparedness with qualified Shoreham observers. A formal critique of the exercise shall be held as soon as possible upon the conclusion of the exercise. Comments from participants in the exercise shall be solicited and incorporated in the critique. Copies of the critique shall be forwarded to the participating organizations.

The Plant Manager shall be responsible for ensuring that the results of the critique and comments are addressed and appropriate action taken. If corrective actions are required at the Corporate level, the Vice President-Nuclear shall be responsible to ensure that the appropriate action is taken.

8.1.4 Emergency Planning Coordinator (EPC)

The Emergency Planning Coordinator or his alternate has the responsibility for meeting with offsite agency members, discussing their response activities in regard to the Plan, updating their copy of the Plan and letters of agreement as needed and to review and certify them to be correct on a bi-annual basis. He shall also be responsible for ensuring the Plan is kept current, procedural changes are properly made, corrective actions are implemented and all records of changes, drills and exercises are properly maintained. Telephone numbers in emergency procedures will be updated quarterly. The EPC is responsible for the distribution of changes to the Plan to those individuals or organizations assigned copies and coordinating training efforts with local agencies.

The EPC's training will be continually upgraded by such methods as attendance at Emergency Planning Workshops conducted with other utilities; attendance at NRC, FEMA and other government-sponsored emergency planning seminars; and, participation in SNPS-specific training programs

related to emergency preparedness

8.2 Review and Updating of the Plan and Procedures

The Emergency Plan and the Emergency Plan Implementing Procedures (EPIPs) and any subsequent revisions will be formally reviewed by the Nuclear Review Board and the Review of Operations Committee, respectively, on an annual basis.

Selected personnel from those offsite agencies likely to respond to emergency conditions will be requested to attend a bi-annual meeting on emergency planning and response activities. Members of the overall emergency organizations will be informed of changes in the Plan by the distribution of such changes. Letters of agreement in support of the Shoreham Emergency Plan will be reviewed annually and changed, if necessary.

If the results of exercises, drills and critiques so require, or if changes in Federal, State or local requirements occur, revisions will be incorporated into the Plan. The revision number and date will be noted on the right hand side of a page, opposite the line where the revision occurs.

All procedures other than EPIPs that are used in the implementation of this Plan shall be reviewed annually.

An annual audit of the emergency preparedness program shall be conducted under the cognizance of the Nuclear Review Board to ensure the training exercises and drill commitments are being kept current. Assessment will be made as to the completeness of procedures and the adequacy of training.

The audits shall specifically address the following:

1. The SNPS Emergency Plan
2. Emergency Plan Implementing Procedures
3. Training
4. Drills
5. Exercises
6. Emergency Equipment

Those conducting any audit must be independent of involvement in Emergency Planning. The results of each audit shall be documented and reported to the Vice President-Nuclear, the Nuclear Review Board, and the Review of Operations Committee.

The results of each audit shall be answered and details of corrective actions taken shall become part of a formal record. These records shall be maintained for five years.

8.3 Maintenance and Inventory of Emergency Equipment and Supplies

Schedules, including checklists as applicable, for maintenance, surveillance testing, calibration and inventory of emergency equipment and supplies are included in EPIPs. The Emergency Planning Coordinator or his designated alternate will conduct

an annual review of these procedures to ensure the operational readiness of emergency equipment and supplies.

Emergency equipment and instrumentation will be inventoried and inspected at least once each calendar quarter and after each use. Since the equipment utilized in the Radiological Environmental Monitoring Program is in continuous use, no further inventory or performance checks will be required. Sufficient reserves of equipment and instrumentation will be stocked to replace emergency equipment and instrumentation removed from service for calibration and/or repair. All calibration, maintenance and repair of emergency equipment and instrumentation will be performed in accordance with manufacturer's recommendations.

8.4 Public Information and Education

The Public Information and Education Program will provide for the periodic (at least annually) dissemination of information to the public regarding how they will be notified and what actions they should take, if any, in the event of an emergency. The LILCO Public Information Program is the responsibility of the Vice President for Public Affairs. The information to be prepared will include, but not be limited to:

1. How the plant works
2. Information on radiation
3. The nature of nuclear accidents
4. Emergency Planning

5. Methods of public notification
6. Protective measures (including evacuation instructions)
7. Special needs of the handicapped
8. Where to get additional information

Public information and education materials will be developed in cooperation with the State Health Department PIO (Director of Health Communications), the statewide Radiological Education Task Force, and the Suffolk County PIO. This cooperative effort will eliminate unnecessary duplication of effort and will provide for the sharing of useful materials and resources. Educational activities and materials that will be incorporated within the Shoreham program include the following:

1. General comprehensive pamphlet
2. Telephone directory pages
3. Television and radio announcements
4. Newspaper materials and news releases
5. Special education programs for organizations and groups
6. Posters and decals
7. Utility bills

These activities and materials, all developed through a combined effort of New York State, Suffolk County and LILCO, will be presented to the public as a unified statement.

The principal information document will be the general pamphlet which will include the complete scope of background and emergency information. The telephone directory pages

will contain the complete scope of emergency actions to be taken, if any, by the public in the event of an accident. The coverage of the entire population within the plume exposure EPZ is accomplished through the wide availability of telephone directories as well as a thorough dissemination of pamphlets to the permanent residents and areas frequented by the transient population. The permanent population is further contacted through media announcements and articles, special education programs, and utility bills. The transient population will also be made aware of emergency information through decals and posted notices in public areas (hotels, motels, gasoline stations, and telephone booths). As a result of the program, both the permanent and transient population shall be aware of the necessary emergency information or will be directed to sources of local emergency information that are easily and quickly accessible.

Public information and educational materials will be distributed initially, commencing January 1982 (180 days before fuel loading), and periodically (at least annually) thereafter. Every year, or in conjunction with an exercise of the facility, FEMA and the State Health Department in cooperation with LILCO and Suffolk County officials, will conduct tests of the effectiveness of the Public Information and Education Program, and evaluate public awareness and understanding of emergency response procedures.

Particular emphasis will be placed on the population residing within 10 and 50 miles of the Shoreham Station. Identifiable information gaps will be addressed through additional and/or redesigned educational materials or programs.

SHOREHAM NUCLEAR POWER STATION

EMERGENCY PLAN

SECTION 9

9.0 RECOVERY

Once the emergency hazard potential has passed, steps will be taken to recover from the incident. Recovery operations will utilize the emergency response organizations discussed in Sections 5.2, 5.3 and 5.5. All actions will be preplanned in order to limit exposures. Following an emergency which results in the contamination of otherwise uncontaminated areas within the Exclusion Area, recovery efforts will be directed towards restoring the site to its pre-emergency condition to the extent reasonable. An area outside the Protected Area of the station will be considered contaminated by the event if the beta-gamma activity of removable (smearable) samples exceed the criteria set forth in the normal station health physics procedures. Areas will be roped off and posted with radiological levels based on results of surveys. Portable shielding material may be used whenever deemed necessary. Access to the area will be controlled and exposures of personnel documented.

Headquarters management, administrative and technical personnel shall provide additional technical support during planning and reentry/recovery operations.

9.1 Recovery Methodology

The recovery of the station after an emergency is a prime consideration. Procedures shall be available that address recovery following a Site Area or General Emergency, including when and how it will take place.

The decision to relax protective measures is based upon a comprehensive review of station system parameters. These shall include, but not be limited to, the following:

1. Stability of the reactor shutdown condition; i.e., successful movement toward a cold shutdown condition.

2. Integrity of the Reactor Containment Building.

3. Operability of Radioactive Waste Systems and Decontamination Facilities.

4. The availability and operability of a heat sink.

5. The integrity of power supplies and electrical equipment.

6. The operability and integrity of instrumentation including radiation monitoring equipment. In the latter instance, this shall include portable equipment assigned to the emergency.

7. Availability of the trained personnel and support services.

The decision on the Company's part to relax protective measures shall be reached in and by a meeting of the Emergency Director and the Recovery Manager. They will base their decision upon input from their advisors. Federal, State and local entities will be notified of the decision and any resulting changes to the Corporate or station organizations.

The following conditions shall be considered appropriate for the consideration of relaxation of protective measures:

1. Station parameters of operation no longer indicate a potential or actual emergency exists.

2. The release of radioactivity from the station is controllable and no longer exceeds permissible levels and no danger to the public from this source is credible.

3. The station is capable of sustaining itself in a long term shutdown condition.

4. Station entry and clean-up is possible without workers receiving an excess of their permissible exposures.

Because it is not possible to forsee the entire consequences of an emergency, general procedures will be written together with appropriate plans as part of the Corporate Nuclear Emergency Response Plan and Procedures that will formalize the manner in which the decision is reached. Specific plans to suit the occasion will be produced with this decision. The plan by which the decision is reach will specifically require evaluation of the potential of the emergency.

9.2 Notification

The Recovery Manager shall notify the NRC Region I, NRC Headquarters, FEMA, New York State Emergency Operations Center, Suffolk County Emergency Operations Center, and any other

pertinent offsite agency with the same information. He shall also inform these agencies if any change in organizational structure is to occur because of the recovery.

9.3 Population Exposure

Total population doses shall be periodically estimated in those affected sectors and zones by utilizing population distribution maps within the emergency planning zones.

Station personnel shall initially determine those doses and will identify whole body exposure based on external dose equivalent Xe-133 gamma radiation and thyroid exposure resulting from inhalation of radionuclides (dose equivalent I-131). The methodology used shall be consistent with that presented in Regulatory Guide 1.111, "Methods of Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routing Releases From Light-Water Cooled Reactors," dated July 1977.

9.4 Review

If the reactor has been shutdown because a safety limit was exceeded, a complete analysis of the circumstances leading up to, and resulting from, the situation together with recommendations to prevent a recurrence will be issued by the Nuclear Review Board and Review of Operations Committee. Notification of such occurrences will be made to the NRC as specified in the Technical Spocifications.

APPENDIX A

REFERENCES

APPENDIX A

REFERENCES

The Emergency Plan for the Shoreham Nuclear Power Station has been developed in accordance with the guidance provided by the following documents:

1. "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," U. S. Nuclear Regulatory Commission/ Federal Emergency Management Agency - NUREG-0654/FEMA-REP-1, Revision 1, November 1980;

2. 10 CFR 50 Appendix E, Emergency Plans for Production and Utilization Facilities;

3. Standard Regulatory Review Plan 13.3 and specifically Appendix A thereto;

4. Regulatory Guide 1.3;

5. Regulatory Guide 1.70.14;

6. 10 CFR 100, Reactor Site Criteria;

7. The Guide to Preparation of Emergency Plans for Production and Utilization Facilities issued by the Atomic Energy Commission, December 1970;

8. NRCP Report No. 39, Basic Radiation Protection Criteria (1971);

9. 10 CFR 20, Standard for Protection Against Radiation;

10. Information Bulletin 72-40, State Government of New York, Department of Health, "Emergency Plan for Major Radiation Accidents Involving Nuclear Facilities;"

11. Suffolk County Disaster Preparedness Plan, January 1981;

12. Suffolk County Emergency Plans in Support of New York State Specific Operational Procedures, January 3, 1975;

13. New York State Emergency Plan for Major Radiation Accidents Involving Nuclear Facilities, January 1981;

14. "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents" (Chapter 2), U. S. Environmental Protection Agency - EPA-52011-75-001, September 1975.

APPENDIX B

LETTERS OF AGREEMENT

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS
Captain of the Port
120 Woodward Ave.
New Haven, CT. 06512
TEL: (203)432-2464

5700
14 November 1978

C.H. Streater
Long Island Lighting Co.
1650 Islip Ave.
Brentwood, N.Y. 11717

Atten: Goverment Relations

Dear Mr. Streater

As per the phone conversation of LTJG Conway and Mr. Hemp on 3 NOV 78 I am resubmitting the information on Coast Guard response:

a. Personel and equipment from the Coast Guard Captain of the Port, New Haven, CT. would be available in the event of an emergency at the Shorehaven Nuclear Power Station. Specifically a One mile safety zone would be enacted and enforced by boats from Coast Guard Group Long Island Sound. I will take other additional protective measures for the public safty as deemed necessary by the Emergency Duty Officer.

b. Taking into consideration the variables such as weather, non-operable equipment and the Coast Guard SAR mission , a maximum response time of 4 hours is considered to be a reasonable estimate.

If you have any further questions related to this matter please feel free to contact the Captain of the Port Office at (203)432-2464.

J.R. Harrald

J.R. HARRALD

Department of Energy
Brookhaven Area Office
Upton, New York 11973

November 8, 1978

Mr. John R. Gummersall, Jr.
Vice President
Long Island Lighting Company
175 East Old Country Road
Hicksville, New York 11801

Dear Mr. Gummersall:

SUBJECT: Shoreham Nuclear Power 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 responsible 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 immedia[illegible] hazards to health and safety. Radiological emergency assistance will be terminated as soon as the emergency situation is under cont[illegible]l. 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 or local government, or private authority as soon as the emergency conditions are stablized.

If you have any further questions or desire further information, feel free to contact me.

Very truly yours,

Robert A. Friess

Robert Friess
Technical Assistant to Area Manager

cc: B. H. Grier, Office of Inspection & Enforcement, Nuclear Regulatory Commission, Region I
H. Hollister, Director, Division of Operational and Environmental Safety, HQ

COUNTY OF SUFFOLK

John V. N. Klein
COUNTY EXECUTIVE

December 31, 1979

Ira L. Freilicher, Vice President
Long Island Lighting Company
250 Old Country Road
Mineola, New York 11501

Re: Memorandum of Understanding - Shoreham

Dear Ira:

Enclosed herewith is a photocopy of the original Memorandum of Understanding between the Long Island Lighting Company and the County with respect to emergency planning at Shoreham.

With the addition of paragraph 1, providing for mutual termination on ten days notice, I have signed the agreement and made the County Executive-elect Peter Cohalan aware of such action, with which he is in agreement.

If you wish a copy executed in original, I would be glad to do so.

Sincerely yours,

John V. N. Klein
Suffolk County Executive

JVNK:ds
Enclosure

cc: Honorable Peter F. Cohalan
Suffolk County Executive-Elect

rmc

radiation management corporation

UNIVERSITY CITY SCIENCE CENTER

3508 MARKET STREET
PHILADELPHIA, PA 19104
(215) 243-2950

November 20, 1978

Mr. James Rivello
Superintendent
Shoreham Nuclear Power Station
Long Island Lighting Company
175 E. Old Country Road
Hicksville, New York 11801

SUBJECT: Emergency Medical Assistance Program

Dear Mr. Rivello:

This confirms an agreement between Radiation Management Corporation (RMC) and Long Island Lighting Company, wherein RMC agrees to furnish certain services to nuclear generating stations operated by Long Island Lighting Company. These services comprise a program that is identified by RMC as an Emergency Medical Assistance Program (EMAP). With regard to Shoreham Nuclear Power Station Unit No. 1, the EMAP contains the following provisions:

1. Semi-annual review of plant and hospital procedures, equipment and supplies; one of these audits will be in conjunction with (6.) 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, videotaped and critiqued by RMC;

continued ....

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

Consultation 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

Stephen M. Kim
EXECUTIVE VICE PRESIDENT

Attest:

Fred G. Rocco
Vice President, Technical Services

SMK:lw

MEMORANDUM OF UNDERSTANDING
BETWEEN
SUFFOLK COUNTY, NEW YORK
AND
LONG ISLAND LIGHTING COMPANY
ON
EMERGENCY PLANNING

In order to comply with 10CFR50 Appendix E IV(D) and to provide for efficient and timely implementation of protective actions should they ever be required as a result of an accident at the Shoreham Nuclear Power Station (SNPS), Suffolk County (County) and the Long Island Lighting Company (LILCO) have reached the following agreements and understandings:

A. The (LILCO) Emergency Plan defines accident conditions and delineates responsibilities and duties of the SNPS staff in the event of a potential radiological incident. The Emergency Plan Implementing Procedures will be implemented whenever conditions exist which have a significant probability of leading to elevated levels of radiation which might result in an onsite or offsite personnel hazard, and/or environmental concern. Certain nonradiological events at the plant may also result in activating portions of the emergency organization. Emergencies have been separated into five classifications which are explained in detail in Section 13.3 SNPS FSAR.

B. LILCO is responsible for the protective action of notifying the following persons onsite and in the immediate vicinity of the site in the event of an emergency:

1. All persons whether LILCO employees or visitors within the "owner controlled area" of the site,

2. All persons on the jetties or on the shore-front that is part of the Shoreham site,

3. All persons within the LILCO owned portion of the Wading River marsh on the northeast portion of the site, and

4. All persons associated with the St. Joseph's Villa located on the Shoreham West site.

C. The County is responsible, in support of New York State, for the notification and protective action of all members of the public not specifically included in B, above.

D. LILCO agrees to notify the Emergency Operations Center (EOC) or Warning Point, using the National Alert Warning System (NAWAS) under the following circumstances:

1. Upon declaration by the LILCO Emergency Director of a Plant Emergency as defined in Section 13.3.3.1,3 of the SNPS FSAR where significant potential exists for the emergency to become a Site or General Emergency, as defined in Sections 13.3.3.1.4-5,

2. Upon declaration by the LILCO Emergency Director (within 15 minutes) of a Site Emergency or a General Emergency,

3. LILCO agrees to notify the County in a timely fashion (within 3 hours) upon a serious incident, regardless of whether such incident involves releases of radioactivity and LILCO also undertakes to notify the County of events which could, mistakenly or otherwise, be construed as a radiological incident, and

4. Upon dispatch from the site of injured or sick personnel who are contaminated with radioactivity and who are being transported to a local hospital (within 3 hours).

E. LILCO will install and maintain at its expense a dedicated telephone line connected to the NAWAS. Three telephones will be installed onsite, in the (1) Control Room, (2) Onsite Emergency Control Center, and (3) Alternate Onsite Emergency Control Center. The County will provide a terminal for this line in its NAWAS system located in its Emergency Operations Center in Yaphank, New York.

F. In the event of a Site or General Emergency, LILCO agrees to notify the County Warning Point and to provide the following information:

1. Location and type of emergency,

2. Caller's name and means of communications contact if different than the predesignated telephone number,

3. Date/Time of incident,

4. Wind speed and direction, and

5. Status of engineered safeguards (working/not working).

County EOC or Warning Point will call LILCO to confirm information, above. LILCO will then provide as much of the following additional information as possible:

1. Type of accident (transportation accident, reactor accident, fire involving radioactive material, liquid discharge, fuel handling accident, accidental criticality, other),

2. Primary effect to offsite areas (release to the atmosphere, release to water, direct radiation),

3. Estimate of the quantity and type of radioactive material released or that may be released,

4. Estimates of offsite two-hour whole body (immersion) and thyroid (inhalation) dose,

5. Perimeter survey results,

6. Pasquill wind stability category,

7. Status of safeguards (status of core coolant systems, containment integrity, etc.),

8. Additional offsite agencies notified and nature of request and response, and

9. Other pertinent information.

G. The County and LILCO agree to coordinate their efforts in the release of information to the public to provide the public with accurate and timely information.

H. LILCO agrees to conduct at least one drill annually to test communication channels in which the County will be invited to participate.

I. This agreement may be terminated by either party upon 10 days written notice to the other party.

FOR SUFFOLK COUNTY

Signature _____ Date 12-28-79

Title _____

FOR LONG ISLAND LIGHTING COMPANY

Signature _____ Date December 26, 1979

Title Vice President

AGREEMENT

between

LONG ISLAND LIGHTING COMPANY

and

CENTRAL SUFFOLK HOSPITAL

AGREEMENT

This Agreement, made as of the 6 day of November 1980, by and between CENTRAL SUFFOLK HOSPITAL, a New York not-for-profit corporation located at 1300 Roanoke Avenue, Riverhead, New York (hereinafter "Central Suffolk" or "hospital"), and LONG ISLAND LIGHTING COMPANY, a New York corporation with a principal address at 250 Old Country Road, Mineola, New York (hereinafter "LILCO"):

W I T N E S S E T H :

Central Suffolk hereby agrees for itself and its assigns to act as the primary care facility for LILCO's Shoreham Nuclear Power Station in the Town of Brookhaven, New York, for as long as the Station is operated as a nuclear facility. As the primary care facility, Central Suffolk undertakes to:

1) treat injured or injured and radiologically contaminated individuals from the Shoreham Station;

2) dedicate an area adjacent to the existing physical therapy section in the hospital for the treatment of such individuals;

3) solicit proposals from qualified contractors to construct the above-described dedicated area in the hospital and award a commitment to the lowest evaluated proposal submitted;

4) secure all necessary permits and approvals for construction of the dedicated area described above;

5) supervise construction of the dedicated hospital area; and

6) have certain of its hospital personnel participate in training programs and periodic training exercises as required by LILCO.

In consideration of the foregoing undertakings from Central Suffolk, LILCO hereby agrees for itself and its assigns to:

1) provide architect's drawings and written specifications to Central Suffolk on a no cost basis for the construction of the above-described hospital area;

2) pay costs, up to $65,000, for the construction of the dedicated hospital area. Any costs beyond this amount shall be reviewed with LILCO before they are authorized by Central Suffolk. Administrative, overhead and clerical costs of Central Suffolk and LILCO are not included as part of the foregoing construction costs and shall be the separate responsibility of each party to this Agreement;

3) allow Central Suffolk to utilize the dedicated area in the hospital during normal operations, provided that the area is kept free from encumbrances or uses that would inhibit its immediate conversion, upon notice from LILCO, to the primary care facility described above;

4) provide necessary training for specified hospital personnel; and

5) pay to Central Suffolk an annual retainer of $5,000 as compensation for the time and expenses to be incurred by its staff in participating in the above-mentioned training, the first such payment to be made in the year of the first training exercises.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

CENTRAL SUFFOLK HOSPITAL

By _____

Exec. Vice President
Name and Title

Sworn to before me this
6 day of November, 1980.

_____

KATHRYN M. WILDER
NOTARY PUBLIC, State of New York
No. 52 4692614
Qualified in Suffolk County
Commission Expires March 30, 1982

LONG ISLAND LIGHTING COMPANY

By _____

J. R. Gummersall, Jr.
Vice President-Operations
Name and Title

Sworn to before me this
3 day of September, 1980.

_____

GENEVIEVE T. FAULS
NOTARY PUBLIC, State of New York
No. 30-6245400
Qualified in Nassau County
Commission Expires March 30, 1982

AGREEMENT
BETWEEN
THE WADING RIVER FIRE DISTRICT
AND
LONG ISLAND LIGHTING COMPANY
ON
EMERGENCY PLANNING

In order to provide for efficient and timely implementation of protective actions should they ever be required at the Shoreham Nuclear Power Station, the Wading River Fire District (WRFD) and Long Island Lighting Company (LILCO) hereby agree to the following undertakings:

(A) The WRFD will respond to a request from LILCO for assistance in fighting any fires at the Shoreham site.

(B) At LILCO's request, the WRFD will transport any injured persons, irrespective of the nature or cause of injury, including personnel who may be radiologically contaminated, from LILCO's Shoreham site to a nearby hospital.

In consideration of the foregoing commitments by the WRFD, LILCO agrees:

(A) To provide training to the active members of the WRFD in respect to the performance of the undertakings set forth in this Agreement. This training will be reinforced by periodic drills to maintain a proficient crew of volunteer personnel in the WRFD.

(B) To provide an individual qualified in Health Physics to accompany personnel from the WRFD whenever they are requested to provide assistance at the Shoreham Station.

(C) To provide dosimeters, breathing apparatus and protective clothing, when necessary, to the members of the WRFD who are supplying assistance at the Shoreham Station.

(D) To maintain records, in accordance with 10 CFR 20, showing the radiation exposures of all WRFD personnel who require radiation monitoring as a result of their presence at the Shoreham Station.

(E) To make a record of any equipment or personal belongings of the WRFD or its personnel that becomes unusable due to contamination at the Shoreham Station and to replace or otherwise compensate the WRFD or its personnel for the loss of such equipment or personal belongings.

(F) To establish a Committee, with the Shoreham Station's Plant Manager as Chairman, to answer questions and provide information to the WRFD concerning the contents and execution of this Agreement.

(G) To provide radio communication equipment to personnel of the WRFD at the time they supply assistance at the Shoreham Station.

(H) To obtain, prior to fuel-load at the Shoreham Station, insurance that will provide coverage against radiation damage to fire department personnel and equipment in connection with the WRFD's response to any incident at the Station and,

after such insurance is secured, supply evidence thereof to the WRFD.

FOR THE WADING RIVER FIRE DISTRICT

Carl J. Frano Jr. Date May 21, 1980

Title CHAIRMAN
WADING RIVER FIRE DISTRICT

FOR LONG ISLAND LIGHTING COMPANY

J R Summersall Jr Date 5/5/80

John R. Summersall, Jr.

Title Vice President

APPENDIX C

STATE AND COUNTY EMERGENCY PLANS

(Contracts)

APPENDIX C

STATE AND COUNTY EMERGENCY PLANS

The "New York State Emergency Plan for Radiation Accidents Involving Nuclear Facilities" was submitted to FEMA on January 2, 1981 by Consolidated Edison Company and the Power Authority of the State of New York for Indian Point Units 2 and 3 (Docket Nos. 50-247 and 50-386).

The agreement for developing a Suffolk County Radiological Response Plan between the Long Island Lighting Company and the Suffolk County Department of Planning is included in this appendix.

AGREEMENT

THIS AGREEMENT made the day of , 1980 by and between the People of the State of New York, acting by and through the Executive Department, Division of Military and Naval Affairs (hereinafter called the "Division") and Consolidated Edison Company of New York, Inc., Rochester Gas & Electric Company, Long Island Lighting Company, Niagara Mohawk Power Corporation, and Power Authority of the State of New York (all hereinafter referred to as the "Utilities").

W I T N E S S E T H :

WHEREAS, the New York State Disaster Preparedness Commission (DPC) has been established pursuant to Executive Law, Article 2-B, Section 21, having powers and responsibilities concerning emergency response plans in the State of New York, and

WHEREAS, the Chief of Staff to the Governor, who is the head of the Division, serves as Secretariat to the DPC, and

WHEREAS, the Utilities are responsible for the operation of certain nuclear facilities in New York State, and

WHEREAS, the Utilities are licensed by the Nuclear Regulatory Commission (NRC), pursuant to the provisions of the Atomic Energy Act of 1954, as amended, and the Energy

Reorganization Act of 1974, and

WHEREAS, the NRC has proposed new regulations and the NYC and the Federal Emergency Management Agency (FEMA) have proposed guidelines which would require the submission to NRC/FEMA of revised radiological emergency response plans for New York State, and

WHEREAS, the DPC and the Division represent that they are not currently funded to employ appropriate staff to review or prepare the necessary state emergency response plans within the time constraints which would be imposed by the proposed NRC/FEMA regulations and guidelines, and

WHEREAS, the failure of the State to have emergency response plans prepared within the time constraints proposed by NRC/FEMA could result in termination or suspension of licenses to operate nuclear power reactors by the Utilities, and

WHEREAS, the Division has been authorized by the Division of the Budget to be the recipient of funding for the purpose of developing state emergency response plans, and to be the employer of personnel employed for that purpose, and

WHEREAS, the Division requires that funding be remitted to the Division prior to the need for disbursement thereof by the Division,

NOW, THEREFORE, in consideration of the mutual promises herein contained, the parties hereto agree as follows:

1. The Division, as contractor, shall be responsible for preparing and timely submitting to the NRC and/or FEMA, by September 1, 1980 or as soon thereafter as possible, a State radiological emergency response plan, and by November 1, 1980 or as soon thereafter as possible, written implementing procedures, all of which at the time of submission the Division in good faith believes are in compliance with all applicable Federal regulations and guidance for the protection of public health and safety from the effects of a radiological incident arising out of the operation of nuclear power plants. The plan and implementing procedures shall comply, to the extent practicable, with the guidance and acceptance criteria contained in NUREG-0654/FEMA-REP-1. The Division shall use its best efforts through January 31, 1981 to make promptly any modifications to the submitted plan and implementing procedures as necessary to obtain final NRC and/or FEMA concurrence. If funding is believed necessary by the Division and is made available hereunder for periods after January 31, 1981, the Division shall see to it that the plan and implementing procedures submitted by the State fully comply with all applicable Federal regulations and guidance. The Division shall also be responsible for the coordination and review of local radiological emergency response plans and written implementing procedures. The Division shall work diligently in all phases of the work described in this paragraph.

2. This Agreement shall be effective as of April 29, 1980 and will terminate at the conclusion of the work to be performed by the Division, as set forth in Paragraph 1.

3. In order to assist the Division in fulfilling its obligations as set forth in Paragraph 1, above, and for those purposes alone, the Utilities will provide funding in an amount up to a maximum cumulative payment (including the initial payment) of $250,000. Toward this end, the Utilities have already made an initial payment of $50,000, and they will provide future payments of $50,000 on a bi-monthly basis, starting in June, 1980, and ending in December, 1980. Since the Division believes that additional funding beyond $250,000, up to a maximum cumulative payment of $439,297, may be required in order for it to fully and finally perform all of the duties set forth in Paragraph 1, the Utilities may elect to change the amount of and/or extend the bi-monthly payments. Within two weeks after remittance of the October, 1980 payment, the Division shall provide a progress report of the work performed to date pursuant to this Agreement, a financial statement of expenditures to date, a budget of projected future expenditures, and the specific tasks which would be performed utilizing additional monies. After review of these reports, the Utilities may elect to change the amount of and/or extend the bi-monthly payments beyond December, 1980, up to a maximum

cumulative payment of $439,297. The Utilities shall provide notice of such election to the Division by letter, which election shall be made at the sole discretion of the Utilities.

4. With respect to funding disbursements made by the Division, all laws, rules and regulations of the State Comptroller and the Office of General Services shall be followed. At the completion of the work to be performed by the Division pursuant to this Agreement, the Division shall arrange for an independent audit of all such activities and the disbursements of funds supplied hereunder, and a copy of the audit report shall be supplied to the Utilities. This audit may be performed by the New York State Comptroller.

5. The Division shall submit to the Utilities bi-weekly status reports of the work performed pursuant to this Agreement, including completion schedule updates and the proportion and amount of time devoted to the State plan, and to each local plan.

6. All uncommitted funds shall be returned to the Utilities in direct proportion to the contribution made by each Utility. As to the equipment, fixtures and materials purchased or leased under this Agreement still having a useful life or leasehold term at the termination of the Agreement, and absent some other agreement between the parties, said property shall revert to the Utilities in such manner as they shall determine. In the event that said equipment is not removed by the Utilities within ninety (90) days of the termination of this

Agreement, said equipment shall become the property of the Division.

7. After the execution of this Agreement, if the State of New York or any instrumentality thereof, including the Division, appropriates or receives monies from any source, which monies are permitted by law to be reimbursed to the Utilities for monies expended in furtherance of the purposes set forth in Paragraph 1 of this Agreement, said monies will be distributed to the Utilities, up to the amount of, and in proportion to, the contributions of each as made under this Agreement.

8. It is understood and agreed that neither party is an employee or agent of the other and neither party shall have any authority to bind or commit the other in any way and shall make no representations to the contrary or allow third parties to infer that either is an agent or employee of the other. The Division hereby represents to the Utilities that it is authorized under State law to enter into this Agreement and to perform all of the obligations set forth herein. This Agreement, with the Appendix "A" attached hereto, constitutes the entire understanding and agreement between the parties, whether oral or written. No amendment, modification or claimed waiver of any of the provisions hereof shall be valid unless in writing and signed by an authorized representative

the entire understanding and agreement between the parties, whether oral or written. No amendment, modification or claimed waiver of any of the provisions hereof shall be valid unless in writing and signed by an authorized representative against whom such amendment, modification, or waiver is sought to be enforced.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed the day and year first above written.

DIVISION OF MILITARY AND NAVAL AFFAIRS

By: _____
VITO J. CASTELLANO
Chief of Staff to the Governor

CONSOLIDATED EDISON

By: _____

LONG ISLAND LIGHTING COMPANY

By: _____

NIAGARA MOHAWK POWER CORPORATION

By: _____

ROCHESTER GAS & ELECTRIC CORPORATION

By: Leon D. White, Jr.

POWER AUTHORITY OF THE STATE OF NEW YORK

By: _____

STATE OF NEW YORK)
) ss.:
COUNTY OF New York)

On this 16th day of July, 1980, before me personally appeared Charles F. Loutas to me known, who being by me duly sworn, did depose and say that he resides in Manhattan City, New York that he is the Senior Vice President of CONSOLIDATED EDISON, the Corporation described in and which executed the above Agreement, ~~that he knows the seal of said corporation, that the seal affixed to said Agreement is such corporate seal, that it was so affixed by order of the Board of Directors of said corporation,~~ and that he signed his name thereto ~~by like order.~~

Pamela J. McDonald
Notary Public, State of New York

PAMELA J. McDONALD
Notary Public, State of New York
Qualified in Albany County
No. 4602369
Commission Expires March 30, 1982

THIS AGREEMENT, as entered into as of this 16th day of APRIL, 1981 by and between the Long Island Lighting Company (hereinafter referred to as "LILCO") and the County of Suffolk acting through its Suffolk County Department of Planning (hereinafter referred to as the "DEPARTMENT").

J.F. 4/22/81

WITNESSETH THAT:

WHEREAS, LILCO desires to engage the DEPARTMENT to render certain technical and professional services hereafter described,

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Employment of Contractor. LILCO hereby agrees to engage the DEPARTMENT and the DEPARTMENT hereby agrees to perform the services hereinafter set forth. The relationship of the parties hereto shall be that of client and independent contractor; neither the DEPARTMENT nor any person hired by the DEPARTMENT shall be considered employees of LILCO for any purpose.

2. Scope of Services. The DEPARTMENT shall prepare a County Radiological Emergency Response Plan, as required by Federal Regulations in effect on the date of this Agreement for the LILCO Shoreham Nuclear Power Station. Said plan shall be prepared in accordance with the description contained in clause 3 "Work Statement." The DEPARTMENT represents that it has read and is familiar with the applicable Federal regulations contained in Exhibit B attached hereto and that the DEPARTMENT believes it can develop a County Radiological Emergency Response Plan which complies with such regulations. If revisions to the aforesaid Federal Regulations shall be made during the period of this Agreement, calling for changes in the scope of work, then the provisions of clause 10 "Changes in Scope" of this Agreement shall apply.

3. Work Statement

a. The DEPARTMENT shall perform the activities described in the SCOPE OF WORK appended hereto as Exhibit A.

b. The DEPARTMENT shall conform to the Federal Regulations and guidelines listed in Exhibit B, appended hereto, in the formation of outputs of

activities described in Exhibit A.

c. Wherever specialized technical and scientific inputs are necessary, the DEPARTMENT will retain, after consultation and concurrence by LILCO, the services of appropriate experts, at the DEPARTMENT's expense.

4. Time of Performance

a. The DEPARTMENT will make every effort to complete the tasks listed in Exhibit A within 6 months from the date of execution of this Agreement, subject to the timely response by Federal and State agencies to requests for information, and the timely receipt of Federal and State concurrences with the draft and final Emergency Radiological Response Plans. In the event the DEPARTMENT fails to receive timely response from Federal and State agencies to requests for information, the DEPARTMENT shall promptly notify LILCO in writing of such failure.

b. The DEPARTMENT will issue monthly progress reports, and distribute them to LILCO, the Nuclear Regulatory Commission, the Federal Emergency Management Agency, the New York State Department of Health, and other involved and interested agencies, as specified by LILCO and agreed to by the DEPARTMENT. The DEPARTMENT agrees to provide LILCO with reasonable access to all memoranda, correspondence, employee qualification records, papers, reports, studies and similar documents prepared by or obtained by the DEPARTMENT in connection with the performance of its obligations under this contract. LILCO shall give the DEPARTMENT 7 days' notice of its intention to exercise its rights under this paragraph.

5. Supervision and Personnel

a. All work performed by the DEPARTMENT shall be under the direct supervision of Lee E. Koppelman.

b. The DEPARTMENT represents that it has, or will secure at its own expense, all personnel required to perform the services covered by this Agreement. Such personnel shall not be employees of, or have any contractual relationship with, LILCO.

6. Compensation. LILCO agrees to reimburse the DEPARTMENT on a fixed price basis; total compensation shall be TWO HUNDRED AND FORTY-FIVE THOUSAND ($245,000.00) DOLLARS for the services described in clause 3 "Work Statement" of this Agreement unless this Agreement is amended as provided herein. The DEPARTMENT shall be compensated according to the following payment schedule:

$75,000.00 on execution of this Agreement;

$75,000.00 on June 1, 1981;

Balance on completion.

7. Nondiscrimination. The DEPARTMENT shall not discriminate, directly or indirectly, on the grounds of race, color, religion, sex, age, or national origin in its employment practices related to this Agreement. The DEPARTMENT shall take affirmative steps to ensure that applicants are employed and employees are treated during employment without regard to race, color, religion, sex, age, or national origin.

8. Interest of Contractor. The DEPARTMENT represents that it presently has no interest and will not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. The DEPARTMENT further represents that, in the performance of this Agreement, no person having any such interest shall be employed.

9. Title of Property. Title to property acquired under this Agreement vests with the DEPARTMENT.

10. Changes in Scope. If during the period of this Agreement, any change in the relevant Federal regulations causes an increase or decrease in the DEPARTMENT's cost of, or the time required for, the performance of any part of the work under this Agreement, an equitable adjustment shall be made and this Agreement modified in writing accordingly. No charge shall be made to LILCO for any change or increase in the obligations of

the DEPARTMENT requiring extra work under this Agreement, unless the parties execute such an Agreement specifying the work to be done thereunder and the cost thereof. Disputes over such an adjustment shall be resolved as provided in clause 11 "Remedies" of this Agreement.

11. Remedies. This Agreement shall be interpreted according to the laws of the State of New York. All claims, counter-claims, disputes and other matters in question between LILCO and the DEPARTMENT arising out of or relating to this Agreement or the breach thereof shall be decided by arbitration in accordance with the rules for commercial disputes of the American Arbitration Association in the City of New York. The parties hereto agree that the determination of said aribtration shall be final and binding upon the parties hereto and that a judgment on said award may be entered as a judgment of record in the Supreme Court of the State of New York. The fees and expenses of the arbiters shall be borne equally by the parties. Claims and disputes shall be defined as any formal written complaint which remains unresolved between the parties after reasonable efforts to resolve such matters have failed.

IN WITNESS WHEREOF, LILCO and the DEPARTMENT have executed this Agreement as of the date first above written.

LONG ISLAND LIGHTING COMPANY

By: Matthew C. Cordaro
Matthew C. Cordaro, Vice-President

SUFFOLK COUNTY DEPARTMENT OF PLANNING

By: Lee E. Koppelman
Lee E. Koppelman, Director

APPROVED AS TO FORM,
NOT REVIEWED AS TO EXECUTION

PAD

Alfred Jackson, Jr.
Deputy County Attorney

SUFFOLK COUNTY

By: Peter Cohalan
Peter F. Cohalan, County Executive

E. ... .
GEN'L COUNSEL
By JJF Date 11/5/71

STATE OF NEW YORK)
ss.:
COUNTY OF Nassau)

On this 15th day of APRIL, 1981, before me personally came MATTHEW C. CORDARO, to me known, and known to me to be the person described in and who executed the foregoing instrument as Vice-President of the LONG ISLAND LIGHTING COMPANY, and he duly acknowledged to me that he executed the same.

Graceann Powers

GRACEANN POWERS
Notary Public, State of New York
No. 24-4721193
Qualified in Nassau County
Commission expires Mar. 30, 1982

STATE OF NEW YORK)
ss.:
COUNTY OF SUFFOLK)

On this 16th day of APRIL, 1981, before me personally came LEE E. KOPPELMAN, to me known, who being by me duly sworn, did depose and says: That he resides at Suffolk County, New York; and that he is the Director of the SUFFOLK COUNTY DEPARTMENT OF PLANNING, described herein, and which executed the above instrument, and that it was executed by order of them, and that he signed his name thereto by like order.

Lucille Sardella

LUCILLE SARDELLA
NOTARY PUBLIC, State of New York
No. 52-4458435
Qualified in Suffolk County
Commission Expires March 30, 1982

EXHIBIT A

SCOPE OF WORK

The preparation of the County Radiological Emergency Response Plan consists of nine phases. In carrying out the nine phases, the Suffolk County Department of Planning (the DEPARTMENT) will provide overall management and technical direction, and will be responsible for preparing document draft input (or modifications to existing documents), typing, printing, and distribution. In the development and effectuation of the Emergency Radiological Response Plan, the DEPARTMENT may utilize and employ the responsible County agencies and Departments to the maximum degree possible. The work already performed by LILCO, Suffolk County emergency planning organizations, the State of New York, and other New York counties surrounding operating nuclear plants in New York State will be utilized to the fullest extent practicable.

Each phase and its associated tasks is discussed below:

Phase I - Assess Suffolk County Emergency Planning Needs

The purpose of this phase is to review and assess the present status of the County emergency preparedness program and to make recommendations for a detailed program concerning schedules for both the County Radiological Emergency Response Plan and its Implementing Procedures. Based upon the results of this analysis, Suffolk County would have clear understanding of how best to accomplish its emergency planning responsibilities and could add to or modify the further phases and tasks described below. The specific tasks to be performed follow.

Task No. 1

Review and evaluate existing Suffolk County plans and procedures and determine the level of effort needed to bring them into compliance with existing regulations. Develop a schedule and an action plan that would accomplish this.

Task No. 2

Review existing evacuation plans, evacuation time estimates and public notification/communication systems with those parties involved. Develop a detailed program for upgrading or developing these plans and systems in order to meet existing requirements.

Task No. 3

Evaluate Suffolk County's independent environmental radiological monitoring capabilities and determine steps necessary to bring this capability up to the level required by Suffolk County to meet applicable Federal and State requirements. This task shall be coordinated with other work in this area done by LILCO and New York State. Methods and equipment required to perform radiological assessments to a degree desired by County officials in order to meet applicable laws and regulations will be determined.

Task No. 4

Prepare a needs analysis report which would address each aspect of Tasks 1-3; develop a detailed recommended approach to meet these needs; and provide a refined schedule for both the plan and its respective implementing procedures.

Phase II - Development of Draft Suffolk County Radiological Emergency Response Plans

The purpose of this phase would be to develop a County RERP that incorporates all necessary information and which is suitable for review by all appropriate agencies. The specific tasks to be performed follow.

Task No. 1

Perform an in-depth review of participating County government organizations and their existing radiological emergency response plans.

Task No. 2

Identify County agencies involved in emergency planning, define the authorization and responsibilities of these agencies, and identify the cognizant individuals within each agency.

Establish technical and managerial liaison with the responsible individuals in the County preparedness agency, LILCO, New York State, the Nuclear Regulatory Commission, and the Federal Emergency Management Agency.

Task No. 3

The DEPARTMENT will conduct familiarization meetings with the cognizant individuals in the County emergency preparedness agencies. The DEPARTMENT will provide guidance and background concerning the role and contribution of each agency in the emergency planning process, and recommend measures which will result in the most efficient planning activity.

Task No. 4

Identify a list of available County resources so that the overall emergency plan will make maximum use of these resources. The DEPARTMENT will develop checklists and prepare discussion agenda to ensure that the initial survey information is obtained in an orderly fashion, is properly documented, and is complete. These discussions will help determine assignment of various responsibilities to applicable emergency preparedness agencies and will also provide an effective format for identifying special emergency planning situations and/or problems.

Task No. 5

Manage the RERP development effort. The DEPARTMENT will identify individual agency tasks, responsibilities and interfaces to ensure maximum coordination and to facilitate the preparation of the draft plan.

The execution of Task No. 5 will require the completion of the following Subtasks.

Subtask No. 5.1

Building on the work done in Phase 1, Task 3, those agencies or organizations having some radiological assessment role during the emergency will be identified, and their responsibilities will be delineated. Discussions will be held with the Department of Energy Regional Coordinating Office to determine their assistance role. The specifications, procurement and installation of this equipment is not included as part of this program.

Subtask No. 5.2

Review the existing or proposed communications network between the responsible Federal agencies, State and local officials, LILCO and field survey teams to ensure that the system is effective and reliable.

Subtask No. 5.3

Review and outline existing development of an early warning system for the general public. Individuals responsible for maintaining and actuating this system will be identified and their specific roles will be determined. Twenty-four (24) hour per day operational capability of the system shall be a program requirement.

Subtask No. 5.4

Incorporate into the County RERP the emergency action levels developed for the Shoreham Nuclear Power Station in accordance with NUREG-0610.

Subtask No. 5.5

Incorporate the prepared evacuation plans and associated time estimates into the County Plan.

Task No. 6

This task will be performed in parallel with Task No. 5, and will comprise the following subtasks:

Subtask No. 6.1

The RERP will also include the use of protective measures other than general evacuation. The following protective action response options will be developed:

- Initial Precautionary Operations (i.e., institution of road blocks, etc.)
- Selective Evacuation
- Selective Sheltering
- General Sheltering
- Radioprotective Drug Administration
- Isolation of Ingestion Pathways and Sources

Subtask No. 6.2

The emergency planning needs for special facilities and/or problems will be addressed in this subtask along with the development of preliminary approaches for dealing with them. Facilities having special emergency planning needs and/or problems include, but are not limited to, the following:

- Hospitals
- Nursing/Retirement Homes
- Jails
- Recreational Areas
- Airports

Task No. 7

Prepare and issue the draft RERP for Licensee, State and local agency review and comment. This RERP shall emphasize proper and effective coordination between the responsible emergency preparedness agencies. All authorities and responsiblities, as determined in Task No. 2, will be clearly delineated in the plans.

Phase III - Preparation of Final Emergency Response Plan

The objective of this phase would be to finalize the emergency plan for submission to the Nuclear Regulatory Commission and to the Federal Emergency Management Agency. The following taks will be completed during this phase.

Task No. 1

Conduct meetings with the responsible County emergency planning officials, the Licensee, and New York State officials to discuss their comments on the draft plan and to secure action, where necessary, to resolve outstanding concerns.

Task No. 2

Gather inputs and other information from County and State planning representatives and the Licensee as necessary to resolve outstanding differences.

Task No. 3

Finalize the County and State emergency plans by incorporating the information developed in Task No. 2. The DEPARTMENT will print and distribute the finalized plans to all parties.

Task No. 4

Coincident with Task No. 1 above, the DEPARTMENT and the cognizant emergency planning agencies will finalize the development of plans for the previously identified special emergency planning situations and/or solutions to problems.

Task No. 5

Coordinate final plan sign-off meetings, print and distribute final plans to the Licensee, State and local agencies and other organizations as designated by the County.

Phase IV - Assist in Obtaining Federal Agency Staff Concurrence With Emergency Plans

The objective of this phase is to confer with the reviewing Federal agency staffs to discuss their comments and to develop a program for obtaining agency concurrence with the plans developed in Phases I through III.

Task No. 1

Participate in meetings with the NRC, FEMA, DOT and other responsible agency staffs to discuss the plans and, to the extent possible, resolve commission and agency concerns.

Task No. 2

Discuss agency comments with the County and State emergency planning representatives and the Licensee to develop a program to resolve outstanding differences.

Phase V - Preparation of RERP Implementing Procedures

The objective of this phase is to develop detailed implementing procedures for the County Radiological Emergency Response Plan.

Task No. 1

Develop a listing of all necessary implementing procedures for the County emergency response plan. Any available local specific operating procedures will be utilized to the maximum extent feasible.

Task No. 2

Hold discussions with the County emergency planning organizations to ensure that they are fully aware of the latest Federal requirements for preparing satisfactory implementing procedures. Develop detailed outlines for each implementing procedure in cooperation with County emergency planning coordinators.

Task No. 3

The DEPARTMENT will prepare drafts of the implementing procedures and distribute them to the respective agencies for review and approval.

Task No. 4

Coordinate comments from the agencies and prepare final drafts of the procedures.

Task No. 5

The DEPARTMENT will assist the County agencies in meetings held with the NRC, FEMA, New York State, or other reviewing agencies as necessary to obtain final approval of the procedures.

Phase VI - Notification System Integration

In cooperation with LILCO and work which LILCO contracted to an independent consultant experienced in site evaluation, system design and system specification, the DEPARTMENT shall determine the resources, both administrative and physical, that are required to comply with the NRC 15-minute EPZ notification regulation and assist in review of the preparation of specification and procurement of the necessary hardware. Installation and test procedures would also be developed upon selection of a vendor. Actual installation would be accomplished by others.

Task No. 1

Review survey of the 10-mile EPZ; including demographic, topographic and geographic considerations that determine the characteristics of the required warning/notification system. Also, review the evaluation of existing notification capabilities, such as town and village fire department sirens.

Task No. 2

The DEPARTMENT will work jointly with LILCO to:

i. select the nofification system(s) that will be utilized;
ii. review list of commercially available equipment and vendor selection/ qualification; and
iii. develop system installation and test procedures.

Phase VII - Public Education Program

Task No. 1 - Define Program Scope

During this task, the detailed scope and content of the public education information program will be identified after consultation with and concurrence by LILCO. Work completed or in progress by LILCO shall also be reviewed and evaluated. Examples of items which will be addressed include:

- brief factual information on radiation
- sources for additional information during emergency (i.e., Emergency Broadcasting System)
- guidance on respiratory protection
- protective action response options such as sheltering and evacuation
- emergency response planning areas (map)
- evacuation routes (map)
- reception center assignment and location
- provisions for identifying transit captives and those individuals requiring special handling who live in private residences
- ingestion exposure safeguards
- what plans and preparations can be made now
- things to take during evacuation (checklist)
- notification or alerting system details (sirens, etc.)
- method for notifying authorities that residents have left their homes (verification/confirmation)

Task No. 2 - Method of Dissemination

During this task, the means of disseminating the information to the public will be developed and supported by detailed procedures formulated jointly by the DEPARTMENT and LILCO. These methods could include:

- regional information centers
- periodic information in utility bills
- public service announcements (radio and TV)
- ads in periodicals (local newspapers and magazines)
- posting in public areas
- pamphlets distributed on a periodic basis
- information in the telephone book
- distribution to school children/PTA meetings
- local government/community meetings
- telephone information service

Task No. 3 - Program Implementation

During this task, the program will be implemented via procedures incorporating details developed in Tasks No. 1 and 2.

Phase VIII - Testimonial Services

At the request of Suffolk County or appropriate Federal or State agencies having jurisdiction or supervision over Emergency Response Plans, the DEPARTMENT will provide expert witness testimony before local, State and/or Federal regulatory agency boards concerning all emergency planning work performed by the DEPARTMENT.

Phase IX - Radiological Emergency Response Training

In cooperation with LILCO and New York State, where practical, and in support of the overall Radiological Emergency Response Program, the DEPARTMENT will provide personnel training services for all program participants. Emphasis will be placed on the following disciplines:

- emergency plan and procedure familiarization
- use of radiological survey instruments
- radioactive waste disposal methods and techniques
- radiation protection measures
- decontamination procedures
- radiological exposure control record keeping
- dosimetry
- notification procedures
- evacuation methodology
- radiological accident prognosis
- protective action response option evaluation process

EXHIBIT B

Guideline Documents

All finalized plans and procedures will be developed to meet NRC, FEMA, EPA and any other applicable regulatory requirements in effect at the date of the execution of this Agreement. It is the intention of the DEPARTMENT therefore, to utilize the following criteria as the basic guideline documents for the development of the appropriate plans and implementing procedures.

a. NUREG-0396

"Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants"
December, 1978

b. NUREG-0610

"Draft Emergency Action Level Guidelines for Nuclear Power Plants"
September, 1979

c. EPA-520/1-75-001

"Manual of Protective Action Guides and Protective Actions for Nuclear Incidents"
September, 1975

d. 10 CFR 50, Appendix E

"Emergency Plans for Production and Utilization Facilities"

e. NUREG-0654, FEMA-REP-1 Rev. 1

"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
November, 1980.

COUNTY OF SUFFOLK

DEPARTMENT OF TRANSPORTATION

August 27, 1980

Mr. Charles Davareo, Section Supervisor
of Nuclear Licensing
Long Island Lighting Company
175 East Old Country Road
Hicksville, New York 11801

Dear Mr. Davareo:

This is in further reference to Appendix 4, NUREG 0654/ FEMA-REP1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants".

As you are aware, the time assessments presented in response to Appendix 4 were compiled predicated on this Department's preliminary plan for evacuation. Since that time, we have substantially modified and refined the plan with respect to zone boundaries and routing, all of which were designed to minimize the amount of time required to achieve a successful evacuation. These modifications will result in substantially reduced times.

Specifically, if you refer to our correspondence of March 7, 1980, Table of Estimated Evacuation Times, the estimated time of 10.5 hours for the worst case 90° sector will be reduced to approximately 6 hours. Similarly, the other 90° sector time estimate will be reduced from 7.5 hours to approximately 5.5 hours.

Upon completion of our final evacuation plan, we will provide revised time estimates for each of the radial distances indicated in Appendix 4.

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

Should there be any questions on this matter, please do not hesitate to contact this office.

Very truly yours,

Richard A. Strang
Deputy Commissioner

By: Robert C. Meunkle
Assistant Director of
Traffic Safety

RCM:df

cc: John C. Gallagher
Chief Deputy County Executive

William Regan
Director, Department of Emergency
Preparedness

APPENDIX D

EMERGENCY PLAN IMPLEMENTING PROCEDURES

APPENDIX D

EMERGENCY PLAN IMPLEMENTING PROCEDURES

Title	Emergency Plan Section(s) Initiated
Emergency Organizations	5.2
Emergency Response Facilities	7.1, 7.3, 7.4
Communications Equipment	7.2
Notifications	5.3, 6.1, 6.2, Appx.
Conditions for Emergency Action Levels	4.2, 6.0, 7.0
Unusual Event	6.1, 6.2
Alert	5.3, 5.4, 6.0, 7.0
Site Area Emergency	5.3, 5.4, 6.0, 7.0
General Emergency	5.3, 5.4, 6.0, 7.0
Downwind Surveys	6.4, 7.3
Determination of Offsite Doses	6.2, 7.3
Environ. Sample Collection During Emergency	6.2, 7.3
Evacuations During an Emergency	6.4.2, 7.4.3
Personnel Accountability	6.4.2
Monitoring of Personnel/Equipment During an Evacuation	6.4.2, 7.4.3
Personnel Injury/Illness	6.5.2, 7.4.2
Offsite Medical Assistance	6.5
Radiation Doses During an Emergency	6.5, 7.4
Emergency Response Training	8.1.1
Emergency Response Facilities Equipment Control and Readiness Check	8.3

Title	Emergency Plan Section(s) Initiated
Inventory of Emergency Kits	8.3, Appx. E
Reentry	9.0
Recovery	9.0
Rescue	6.5
Documentation and Record Keeping During an Emergency	

APPENDIX E

EMERGENCY EQUIPMENT LIST

APPENDIX E

EMERGENCY EQUIPMENT LIST

TECHNICAL AND SUPPORT SUPPLIES

1. Copies of Emergency Plan
2. Copies of Emergency Plan Implementing Procedures
3. Copies of Emergency Operating Procedures
4. Logbooks
5. Paper and Clipboards
6. Pens and Pencils
7. Map Sets

COMMUNICATIONS EQUIPMENT

(Refer to Section 13.7.0 of the FSAR)

RADIATION SURVEY AND MONITORING EQUIPMENT

1. TLD Badges (personnel)
2. Direct Reading Dosimeters and Dosimeter Charger
3. G.M. Survey Meter
4. High and Low-Range Dose Rate Instrument
5. Personnel Frisker
6. Air Sampler with Particulate Filter and Silver-Zeolite
7. Survey Forms
8. Scintillation Detector Equipped with a Single Channel Analyzer

CONTAMINATION CONTROL EQUIPMENT

1. Radiation Warning Signs and Rope
2. Sealed Decontamination Kit (personnel)

CONTAMINATION CONTROL EQUIPMENT (Cont'd.)

3. Filter Paper for Swipe Samples
4. Plastic Bags
5. Plastic Sheeting

PERSONNEL PROTECTIVE EQUIPMENT

1. Coveralls
2. Hoods
3. Gloves and Booties
4. Respiratory Protection Equipment (full-face masks)

FIRST AID AND MEDICAL SUPPLIES

1. First Aid Kit
2. Stretchers
3. Blankets

SUPPLIES AND CONSUMABLE MATERIALS MAINTAINED IN THE STOREROOM INVENTORY

DOWNWIND SURVEY KIT

1. Portable Ion Chamber
2. Portable F.M. Detector
3. Single Channel Analyzer
4. NaI Detector With Shield
5. Portable Air Sampler
6. Sample Holder (if not integral with NaI Shield)
7. Particulate Filter for Portable Air Sampler
8. Silver Zeolite Cartridges and Portable Air Sampler

DOWNWIND SURVEY KIT (Cont'd.)

9. Smears
10. Air Purifying Respirator with Particulate and Iodine Canister
11. Direct Reading Dosimeters
    a) 0-200 mr
    b) 0-1 r
12. Plastic Sample Bags
13. Environmental Sampling Station Key
14. Environmental TLD Badges
15. Particulate Filters for Environmental Air Samplers
16. Charcoal/Silver Zeolite Cartridges for Environmental Air Samplers
17. Dosimeter Charger
18. Check Sources
19. Clip Board
20. Ruled Pad
21. Pens/Pencils
22. Map
23. Phone List
24. Dimes
25. Survey Forms
26. Portable Two-Way Radio
27. Flashlight
28. KI