50-322 OL-3

LILCO EP-45
A-45
5/17/84

LONG ISLAND LIGHTING COMPANY

175 EAST OLD COUNTRY ROAD · HICKSVILLE, NEW YORK 11801

Direct Dial Number

May 17, 1984

Mr. Kevin Murray
Assistant Administrator
John T. Mather Memorial Hospital
North Country Road
Port Jefferson, NY 11777

Dear Mr. Murray:

Enclosed for your review are three copies of Revision 2 to the John T. Mather Memorial Hospital Protective Action Implementation Plan in the Event of a Radiological Emergency at the Shoreham Nuclear Power Station. Also enclosed are three copies of Revision 2A to the sheltering floor plans for the first and second floors of the hospital.

This material incorporates the changes to the Protective Action Implementation Plan and floor plans suggested by your staff at our March 29 meeting. The plan also includes a new section on evacuation of the hospital.

If you have any changes to this material or questions, please feel free to contact me (733-4884) or Steve Dudar (733-5079).

Very truly yours,

Eileen M. Ryan

Eileen M. Ryan
Local Emergency Response
Implementing Organization

EMR/kv

Enclosure

bcc: Messrs. J. A. Weismantle
C. A. Daverio
M. L. Miele
C. A. Gentile
J. N. Christman (H&W)
S. Dudar
J. Yedvab
Ms. E. D. Robinson
K. E. B. McCleskey (H&W)
R. Falzone
LERO File

JOHN T. MATHER MEMORIAL HOSPITAL

PROTECTIVE ACTION IMPLEMENTATION PLAN IN THE EVENT OF A RADIOLOGICAL EMERGENCY AT THE SHOREHAM NUCLEAR POWER STATION (SNPS)

DRAFT

Revision 2

TABLE OF CONTENTS

Revision 2

A. GLOSSARY

The terms listed below are used in these procedure or may be used in the emergency broadcast system (EBS) messages which you may hear on your tone alert radio in the event of a radiological emergency at the Shoreham Nuclear Power Station. Underlined words cited in the definitions are cross-indexed.

ALERT

An Alert would be declared if there were an actual or potential safety problem at the plant. A release of radiation may have occurred, but the amount would not have been significant. At this level, LERO would make emergency personnel ready and available to respond if the problem became more serious.

CONTAMINATION

The presence of radioactive material in undesirable locations.

DECONTAMINATION

The reduction or removal of radioactive contaminants from an object, person or area, as by cleaning or washing with water or detergents.

DOSE

A quantity of energy absorbed from ionization per unit mass of tissue. The rem is a unit of absorbed dose.

DOSIMETER

A device that measures radiation dose.

EMERGENCY OPERATIONS CENTER (EOC)

The command, coordination, and communication center operated by LERO which will be activated to evaluate the radiological emergency and make and coordinate protective action recommendations along with other efforts that may be implemented for emergency response.

EMERGENCY PLANNING ZONE (EPZ)

The area about a nuclear power plant for which planning is accomplished to assure that prompt and effective actions can

be taken to protect the public in the event of a radiological emergency. The plume exposure EPZ is an area approximately 10 miles in radius around a nuclear power plant.

EVACUATION

The protective action that entails the actual movement of people out of the affected area.

EXERCISE

A preplanned event that tests a major portion of all of the basic elements within the radiological emergency response plan. This event tests the capability of the emergency preparedness organization to successfully respond to a radiological emergency that could result in offsite consequences.

GENERAL EMERGENCY

A General Emergency would be declared if the situation involved actual or expected core damage and radiation releases were expected to exceed the government limits for areas beyond the immediate site. At this level, LERO officials would decide whether pre-planned protective actions such as sheltering or evacuation were necessary. Continuing information would be provided to the public.

LERO

Local Emergency Response Organization

MILLIREM (MREM)

One-thousandth (1/1,000) of a rem.

MONITORING, RADIOLOGICAL

The operation of locating and measuring radioactivity by means of survey instruments that can detect and measure (as dose rates) ionizing radiation.

NUCLEAR POWER PLANT

A commercial nuclear electric power generating facility.

NUCLEAR REACTOR

A device in which a fission chain reaction can be initiated, maintained, and controlled. Its essential component is a core with fissionable fuel.

OFFSITE

The area beyond the property boundary line of a nuclear power plant.

ONSITE

The area including and around the nuclear power plant enclosed by the property boundary line.

PROTECTIVE ACTION GUIDELINES

Projected radiological doses to individuals in the general population and emergency workers, that warrant protective actions following a release of radioactive material.

PROTECTIVE ACTIONS

The measures taken in anticipation of, during, or after a release of radioactive material. The purpose is to reduce the radiological doses to persons that would be likely to occur if the actions were not taken.

RADIATION

The emission or propagation of waves or particles such as light, sound, radiant heat, or particles or waves emitted by radioactivity including any or all of the following: alpha particles, beta particles, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons and other atomic particles.

RADIOLOGICAL EMERGENCY

Any event involving actual or potential radiation exposure or radiological contamination to the environment.

RELEASE

Escape of radioactive materials into the environment.

REM

A measure of radiation's biological effect, similar to the way degrees measure temperature or inches measure distance.

SHELTERING

The protective action consisting of going indoors, closing doors and windows, and turning off ventilation systems.

SITE AREA EMERGENCY

A Site Area Emergency would be declared if there were actual or potential major failures of plant systems needed for public protection. Releases of radiation may be involved, but beyond the site boundary, they would not be expected to exceed safe limits past which the government requires protective action. At this level, LERO would staff emergency positions, radiation survey teams would be dispatched, and the public would be notified through the news media.

UNUSUAL EVENT

An Unusual Event would be declared if there were potential for a safety problem, but there had been no release of radiation from the plant. If this classification is declared, offsite officials are notified about the potential problem.

B. Concept of Operations

I. Introduction

The primary protective action recommendation for the John T. Mather Memorial Hospital in the event of a radiological emergency at the Shoreham Nuclear Power Station (SNPS) will be to shelter the patients and employees.

Under the Shoreham Plan, emergencies are to be classified using four categories of increasing seriousness: Unusual Event, Alert, Site Area Emergency, and General Emergency. Only at a General Emergency would there be the possibility that a release of radioactivity would be of sufficient magnitude to potentially exceed, in the plume Emergency Planning Zone (EPZ), the Environmental Protection Agency's Protective Action Guideline dose levels.

Your hospital will be notified initially of any emergency at Shoreham requiring protective actions by anyone in the EPZ by the tone alert radio provided to the hospital by LERO. Your tone alert radio may be activated at the Alert Classification although there will be no need for hospitals to take any protective actions at that emergency classification. If at a higher classification protective actions are recommended for the general public, your tone alert radio would broadcast the Emergency Broadcast System message. If it is necessary for the hospital to take protective actions, LERO would also contact your hospital by telephone to verify that you received the protective action recommendation and are implementing these procedures.

Protective actions of sheltering or evacuation are recommended based upon the projected radiation doses that may be received in particular areas of the plume EPZ, and the amount of time available in which to respond relative to the amount of time necessary to implement a response. While it is unlikely that an emergency resulting in a release would occur at Shoreham, it is more unlikely that a release would occur that would make it necessary to take protective actions out to the 10-mile boundary.

II. Sheltering

In sheltering John T. Mather Memorial Hospital patients during a release of radioactivity from Shoreham, the patients are being protected from two kinds of exposure: (1) external exposure to radiation from an overhead plume

and (2) internal exposure from inhaling radioactive particulates from the plume. Adequate sheltering can be provided by your building. The sheltering areas are indicated on the floor plans in Attachment 3.

The primary sheltering areas are the x-ray, cobalt, cast and trauma rooms and corridors on the first and second floors. These areas have no outside walls and are well below the roof, and thus provide maximum sheltering protection. The ventilation system in these areas can be isolated protecting the patients and staff from radioactive particulates that could be inhaled.

Hospital staff should be instructed to move small amounts of water and food to the sheltering areas. Portable life-support equipment and medication should also be moved to the sheltering areas. All patients should be sheltered in the special sheltering areas except those patients in intensive care unit, coronary care unit, and isolation. The following individuals should be sent home if they do not live in an affected (evacuated/sheltered) area: patients who are in the hospital for elective surgery; patients who were due to have been discharged the day of the emergency is announced; any other persons, which from the standpoint of their health, the hospital considers safe to release.

III. Evacuation

It is possible to postulate a highly unlikely accident scenario that would result in the conclusion that it would be necessary to evacuate John T. Mather Memorial Hospital. However, John T. Mather Memorial Hospital is located on the edge of the plume EPZ and in most accident scenarios, a radioactive release from Shoreham would not present the hospital with an immediate emergency (as would, for example, a fire), giving the hospital ample time to implement protective actions. In addition, government studies indicate that the probability of large radiation doses, even from a worse case accident at the plant, drops off substantially at about 10 miles from the reactor (NUREG 0396, Pg. I-37).

IV. Why Will LERO Recommend Sheltering Over Evacuation As the Primary Protective Action?

LERO will recommend sheltering rather than evacuation as the primary protection action based on the high level of radiation shielding provided by your hospital, your distance from Shoreham, and the greater possibility of risk to patients by relocating rather than sheltering them.

There is federal guidance which acknowledges the need to apply different criteria in establishing the appropriate protective action for special groups (e.g., hospital patients). As written in the Environmental Protection Agency's Manual of Protection Action Guides and Protective Actions for Nuclear Incidents, "..... some persons are involuntarily included under different criteria because the risk of taking action is different than that for the general population. This involuntarily selected population may include bedridden and critically ill patients, patients in intensive care units, prisoners, etc." (EPA-520/1-75-001, pg. 1.14).

V. Summation

In the event of a radiological emergency at the Shoreham Nuclear Power Station, LERO's primary protective action recommendation to John T. Mather Memorial Hospital will be to shelter. Patients in ICU, CCU, and isolation should not be moved.

C. PROTECTIVE ACTION IMPLEMENTATION PROCEDURE

1.0 PURPOSE

This procedure provides guidance for the implementation of sheltering and evacuation efforts for the John T. Mather Memorial Hospital in the event of a radiological emergency at the Shoreham Nuclear Power Station (SNPS).

2.0 RESPONSIBILITY

The Hospital Administrator or his designee is responsible for implementing this procedure.

3.0 PRECAUTIONS

You may be notified at the Alert level and will be notified at all higher emergency classifications that there is an emergency situation at the SNPS by the Emergency Broadcast System (EBS) message broadcast over your tone alert radio. Protective action recommendations will not be made by LERO until a Site Area or General Emergency is declared.

4.0 PREREQUISITES

An Alert , Site Area Emergency or General Emergency condition is in progress and has been verified.

5.0 ACTIONS

5.1 Hospital Administrator or his designee do the following:

5.1.1 Upon notification of an Alert or higher emergency classification via the tone alert radio, note that your hospital is located in Zone Q. All EBS messages which require protective actions are keyed to 19 zone letters, A through S. See Attachment 1 for a map illustrating the EPZ.

5.1.2 Continue to listen to your tone alert radio for further EBS messages.

5.1.3 If sheltering or evacuation is recommended for the general public by the EBS message for Zone Q go to Section 6.0 and implement the sheltering procedure.

5.1.4 If evacuation is recommended for the John T. Mather Memorial Hospital, the LERO Health Facilities Coordinator will contact you via commercial phone. Implement the evacuation procedures in Section 7.0.

6.0 SHELTERING PROCEDURE

6.1 Call in any additicnal staff that may be required for the implementation of the sheltering protective action by using the Hospital Call List in Attachment 2.

6.2 Upon a recommendation of a protection action, prepare your patients for sheltering. The following activities must be considered:

- o Keep all employees and patients indoors.
- o Close all doors and windows.
- o Have everyone, except ICU/CCU and isolation, go to a sheltering area (see Attachment 3 for the floor plans illustrating the sheltering areas.)
- o If your facility has decided to use Potassium Iodine (KI) it should be administered to the patients and/or employees as soon as possible (see Attachment 4 for KI distribution instructions).

6.3 Keep in contact with the LERO Health Facilities Coordinator located at the EOC (xxx - xxxx). The EOC should be contacted:

- o if the mounted dosimeter indicates a 1.0 REM reading and again if it indicates a 3.5 REM reading
- o when the sheltering protective action is completed
- o to tell the EOC how many patients will not be sheltered in the special sheltering areas

6.4 Brief your key personnel on the status of the emergency. Review their procedures with them:

Nursing - Section 6.4.1
Maintenance - Section 6.4.2
Dietary - Section 6.4.3
Housekeeping - Section 6.4.4
Social Services and Medical Records - 6.4.5
Administration - 6.4.6
Security - 6.4.7

6.4.1 Upon notification of sheltering from the person in charge, the Nursing Administrator will do the following:

6.4.1.1 Hold a separate briefing with your staff, including inhalation therapy, ICU, CCU, and emergency room and implement the following steps:

A. Identify those patients who should not be moved to the sheltering area (e.g. patients in intensive care unit/coronary care unit and isolation should not be moved).

B. Provide instructions on where the sheltering areas are located (see Attachment 3) and how patients are to be moved to the sheltering areas.

C. Instruct your staff that all medications and charts for patients should be taken to the sheltering area.

D. If your facility has decided to use Potassium Iodine (KI), administer the KI to the patients and/or employees ASAP (see Attachment 4 for KI distribution instructions).

6.4.1.2 Call in any additional nurses and support staff that may be required to implement the protective action recommendation.

6.4.2 Upon notification of sheltering from the person in charge, the Maintenance Supervisor will do the following:

6.4.2.1 Hold a separate briefing with your staff and implement the following steps:

A. Prepare the sheltering area for the arrival of the patients. Review the floor plan illustrating the sheltering area (Attachment 2).

B. Turn off all outside ventilation. Close and lock doors and windows.

C. Read the mounted dosimeter every 30 minutes.

6.4.2.2 Advise the Dietary Staff where to store a small amount of food and drink that is near the sheltering area.

6.4.3 Upon notification of sheltering from the person in charge, the Dietary Supervisor will do the following:

6.4.3.1 Hold a separate briefing with your staff and implement the following steps:

A. Check with nursing about food for tube feeders to accompany patients to the special sheltering areas.

B. Move a small amount of food and drink to the sheltering locations. The maintenance supervisor will give instructions on where the food and drink should be stored. Avoid spending more than ten minutes gathering the food and drink.

C. Stop all cooking activities. Turn off all ranges, disconnect all electrical equipment (except those providing refrigeration).

D. After steps A, B, and C are complete, have all members of the dietary staff report to the central pooling area (_____) to assist with sheltering the patients.

6.4.3.2 Advise the person in charge when you have completed your actions.

6.4.4 Upon notification of sheltering from the person in charge, the Housekeeping Staff Supervisor will do the following:

6.4.4.1 Hold a separate briefing with your staff and implement the following steps:

A. Close all windows in patients and other rooms.

B. Upon the completion of the above step, report to the central pooling area (_____) to assist with the sheltering of patients.

6.4.5 Upon notification of sheltering from the person in charge, the Social Services and Medical Services Staff Supervisors will do the following:

6.4.5.1 Hold a separate briefing with your staff and implement the following steps:

A. Notify relatives and friends about the sheltering of the patients. Inform them that they will be notified again when the emergency is terminated.

B. Upon the completion of the above step, report to the central pooling area (_____) to assist with the sheltering effort.

6.4.6 Upon notification from the person in charge, the Administration Supervisor will do the following.

6.4.6.1 Hold a separate briefing with your staff and implement the following step:

A. Instruct all members of the administration staff to report to the central pooling area (_____) to assist with the sheltering effort.

6.4.7 Upon notification from the person in charge, the Security Supervisor will do the following.

6.4.7.1 Hold a separate briefing with your staff and implement the following steps:

A. Set up Security at the main entrance and emergency room entrance.

B. Direct all non-injured potentially contaminated persons to the nearest decontamination center for monitoring and if necessary, decontamination.

7.0 EVACUATION PROCEDURE

7.1 When the LERO Health Facilities Coordinator calls with evacuation instructions, provide him with the number of patients who could be transported by bus, the number who would require ambulette/vans, and the number would require ambulance transportation.

7.2 If the projected dose is expected to reach 1-5REM inside the hospital, the LERO Health Facilities Coordinator will call the Hospital Administrator or his designee and recommend evacuation of all pregnant women (patients, staff, and visitors) and children under the age of 12. If the projected dose within the hospital is expected to exceed 5 REM, LERO may recommend that the remaining hospital population be evacuated.

7.3 Call in any additional staff that may be required for the implementation of the evacuation protective action by using the Hospital Call List in Attachment 1.

7.4 Upon a recommendation of evacuation from LERO, prepare your patients for evacuation. The following activities must be considered:

- o Radiosensitive patients (e.g. pediatrics) and pregnant staff and visitors should be evacuated first.
- o LERO will provide transportation (ambulances, ambulette/vans, buses) for the evacuation of patients.
- o LERO will work with you in identifying reception hospitals.

7.5 Keep in contact with the LERO Health Facilities Coordinator located at the EOC (___-____). The EOC should be contacted:

- o if difficulties arise with transportation during the evacuation,
- o to inform the EOC when evacuation is completed.

7.6 Brief your key personal on the status of emergency. Review their procedure with them:

Nursing - Section 7.6.1
Maintenance - Section 7.6.2
Dietary - Section 7.6.3
Housekeeping - Section 7.6.4
Social Services - Section 7.6.5
Administration - Section 7.6.6
Security - Section 7.6.7

7.6.1 Upon notification of evacuation from the person in charge, the Nursing Administrator will do the following:

7.6.1.1 Hold a separate briefing with your staff, including inhalation therapy, ICU, CCU, and emergency room and implement the following steps:

A. Identify those patients who will require ambulances, ambulette/ vans and buses to be evacuated.

B. Provide instructions on which patients should be evacuated first and how the evacuation will be implemented.

C. Insure that all residents' charts accompany them to the reception hospital.

D. Prepare and transfer to the reception hospitals all resident medications.

E. Provide each resident with adequate and proper clothing.

7.6.1.2 Call in any additional nurses and support staff that may be required to implement the protective action recommendation.

7.6.1.3 Inform the person in charge of the number of patients who are ambulatory, the number of patients who will require ambulances and the number of patients who will require ambulette/vans.

7.6.1.4 Record the reception hospital that each evacuated patient was sent to and provide the list to the Social Services and Medical Records Departments.

7.6.2 Upon notification of evacuation from the person in charge, the Maintenance Supervisor will do the following:

7.5.2.1 Hold a separate briefing with your staff and implement the following steps:

A. Drain boilers and all water lines in freezing weather and leave faucets open (except fire hydrant and sprinkler lines).

B. Secure all entrances after evacuation of the building by locking, chaining, etc.

7.6.3 Upon notification of evacuation from the person in charge, the Dietary Staff Supervisory will do the following:

7.6.3.1 Hold a separate briefing with your staff and implement the following steps:

A. Check with nursing about food for tube feeders to accompany patients to reception hospital.

B. Stop all cooking activities. Turn off all ranges, disconnect all electrical equipment (except those units providing refrigeration).

C. After steps A and B are complete, all dietary staff members will report to the central pooling area (_____) to assist with evacuation.

7.6.4 Upon notification of evacuation from the person in charge, the Housekeeping Staff Supervisor will do the following:

7.6.4.1 Hold a separate briefing with your staff and implement the following steps:

A. Close all windows in patients' and other rooms.

B. Upon the completion of the above step, report to the central pooling area (_____) to assist with the evacuation of patients.

7.6.5 Upon notification of evacuation from the person in charge, the Social Services and Medical Records Staff Supervisors will do the following:

7.6.5.1 Hold a separate briefing with your staffs and implement the following steps:

A. Notify relatives and friends about relocation of patients and convey their new location and telephone numbers.

_____

_____

_____

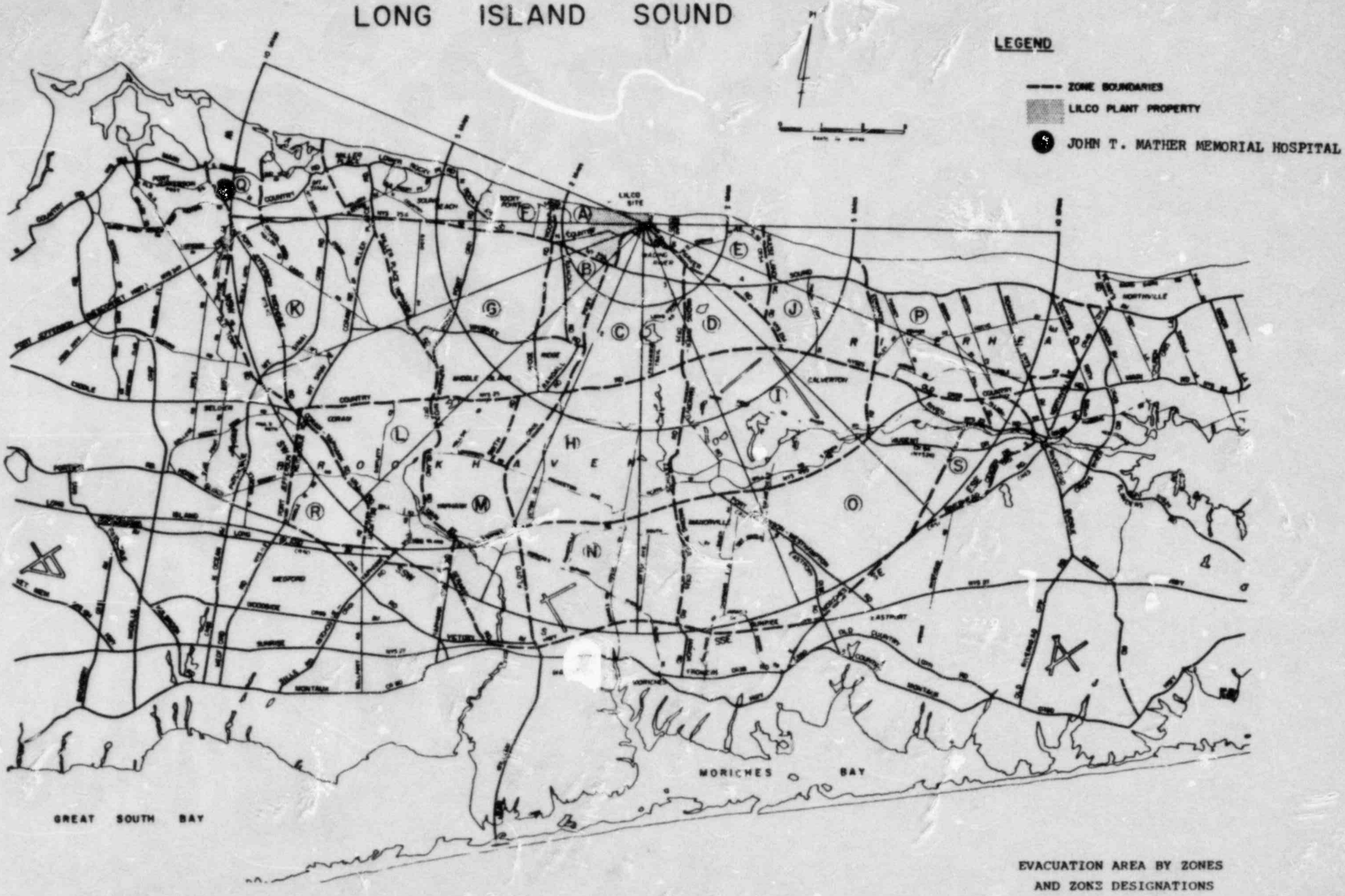
_____

7.6.6 Upon notification of evacuation from the person in charge, the Administration Department will assist the nursing staff with the evacuation.

7.6.7 Upon notification of evacuation from the person in charge, the Security Department will set up security around the hospital until the evacuation efforts have been completed.

ATTACHMENT 1

MAP OF EPZ



EVACUATION AREA BY ZONES
AND ZONE DESIGNATIONS

ATTACHMENT 2

HOSPITAL CALL LIST

(to be provided)

ATTACHMENT 3

FLOOR PLANS OF SHELTERING AREAS

(see enclosures)

Revision 2

ATTACHMENT 4

KI DISTRIBUTION

ATTACHMENT 4

Potassium Iodide (KI) Distribution Instructions

I. General Background on KI:

KI blocks radioiodine, which might be ingested or inhaled by an exposed person, from entering the thyroid gland by saturating the gland with nonradioactive iodine. If radioiodine exposure has occurred or is anticipated, the Administrator or her designee can recommend the use of KI as a protective action, in conjunction with sheltering.

Because KI works by saturating the thyroid gland with nonradioactive iodine before radioiodine reaches the thyroid, it is very important to take KI shortly before or soon after any exposure to radioiodine. The concept is illustrated by the fact that KI is over 95 percent effective when taken at the time of exposure to radioiodine and is only 50 percent effective when taken 3-4 hours after exposure. It is important to remember that KI protects only the thyroid gland and does not protect the rest of the body from radiation exposure.

II. Decision Authority:

LERO will not make a recommendation for the use of KI as a protective action. The decision to recommend KI will be made by the Administrator or her designee.

III. Recommended Dose and Frequency:

The recommended dosage is one (1) 130 mg. tablet per day (equivalent to 100 mg. of iodine) to all individuals over one year of age and one-half (½) of a 130 mg. tablet per day (equivalent to 50 mg. of iodine) to infants under one (1) year of age.

KI will not be required after ten (10) days if other protective measures are taken. These protective measures could include interruption of contaminated milk supplies or evacuation.

Radioiodine already present in the body but blocked from entering the thyroid gland by KI will continue to circulate for up to 48 hours after cessation of exposure. Thus, it takes the body two (2) days to eliminate radioiodine by renal excretion. The thyroid gland must be protected for this 48 hour period to prevent uptake of radioiodine from other parts of the body. Continued use of KI is, therefore, required for two (2) additional days after cessation of exposure. The minimum dosage of KI is three (3) days.

IV. Side Effects:

Read the manufacturer's brochure for possible side effects to KI. IF the side effects are severe or if a person has an allergic reaction, they should contact a doctor.

V. Storage:

There are no special storage requirements for this type of KI, provided that each bottle remains tightly close. It is recommended, however, that all KI be kept under lock and key to ensure against possible misuse.