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Commonwealth Of Massachusetts

Civil Defense Agency and Office of Emergency Preparedness

and Massachusetts Department of Public Health

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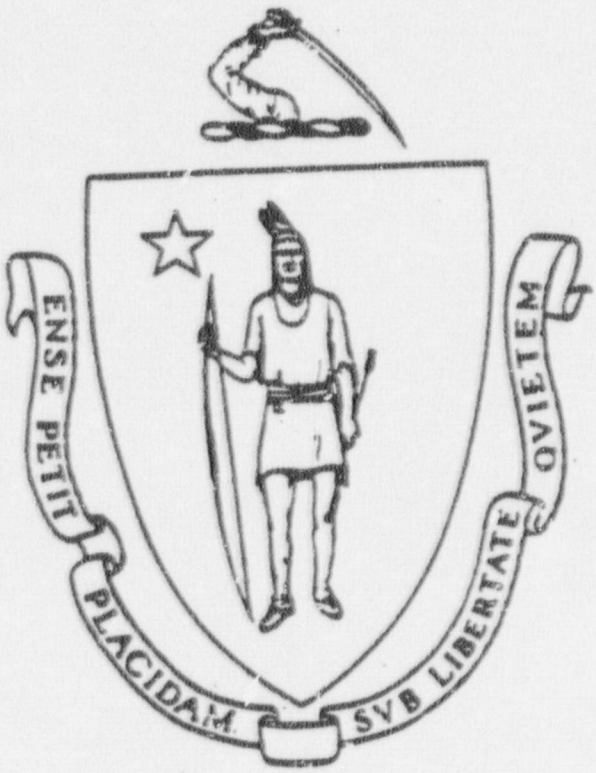
RADIOLOGICAL
EMERGENCY RESPONSE PLAN

APPENDIX 3 TO HAZARD SPECIFIC SUPPLEMENT NO. 6



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NUCLEAR REGULATORY COMMISSION

Docket No. 50-443-OL 50-444-OL Official Exh. No. 55

In the matter of PUBLIC SERVICE CO. OF N.H.

Staff	IDENTIFIED 23538
Applicant ✓	RECEIVED 23538
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COMMONWEALTH OF MASSACHUSETTS

RADIOLOGICAL EMERGENCY RESPONSE PLAN

APPENDIX 3 TO HAZARD SPECIFIC SUPPLEMENT NO. 6

RECORD OF CHANGES AND CORRECTIONS

PLAN DISTRIBUTION

Organization/Official	Copies
Governor	1
Secretary of Energy	1
Secretary of Human Services	1
Dept. of Mental Health	1
Dept. of Public Health	2
Nuclear Incident Advisory Team	2
Secretary of Environmental Affairs	1
Dept. of Environmental Management	1
Forest and Parks Division	1
Waterways Division	1
Dept. of Environmental Quality Engineering	1
Dept. of Food and Agriculture	1
Dept. of Fish, Wildlife, and Recreational Vehicles	1
Fish and Wildlife Division	1
Secretary of Labor	1
Office of Attorney General	1
Secretary of Public Safety	1
Massachusetts Civil Defense Agency and Office of Emergency Preparedness	10
MCDA/OEP Area Directors	4
Massachusetts National Guard	1
Massachusetts State Police	1

Organization/Official	Copies
Secretary of Transportation and Construction	1
Massachusetts Dept. of Public Works	1
Massachusetts Bay Transit Authority	1
Connecticut Office of Civil Preparedness	1
Maine Bureau of Civil Emergency Preparedness	1
New Hampshire State Civil Defense Agency	1
Rhode Island Emergency Management Agency	1
Vermont Civil Defense Division, Department of Public Safety	1
New York State Emergency Management Office	1
Federal Emergency Management Agency	1
United States Nuclear Regulatory Commission	1
United States Coast Guard	1
American Red Cross	1
Civil Air Patrol	1
Boston Edison Company	2
Public Service Company of New Hampshire	1
Vermont Yankee Nuclear Power Corporation	1
Yankee Atomic Electric Company	2
MCDA/OEP Stockpile	25
Total	80

OVERVIEW

The Radiological Emergency Response Plan for Fixed Nuclear Facilities is an appendix to the Massachusetts Comprehensive Emergency Response Plan. This arrangement reflects the fact that radiological emergencies at nuclear facilities are specialized kinds of emergencies. However, they have much in common with both natural disasters and emergency situations caused by man. Many of the emergency response functions which must be carried out (warning, coordination of emergency services, etc) are common to all emergencies.

The Radiological Emergency Response Plan is organized as follows:

Section A is the State Radiological Emergency Response Plan. It includes information such as the breakdown of responsibilities in both the public and private sectors, a discussion of emergency planning zones, protective action guides and protective actions, concept of operation, and notification and warning. The responsibilities of primary and support agencies (State, local, and Federal) are also identified. Procedures for each State agency which identify how it will carry out its task assignments will be developed and maintained by each respective state agency.

Section B is the State's emergency preparedness maintenance program. This consists of ongoing activities which are necessary to maintain emergency preparedness. Various elements of the public education and information program, training, drills and exercises, plan maintenance and updating are discussed. Procedures which implement the emergency preparedness maintenance program are contained as exhibits to Section B.

Section C contains the Massachusetts Civil Defense Agency and Office of Emergency Preparedness Area plan, 10-mile emergency planning zone community plans, and reception community plans for each of the four fixed nuclear facilities which could affect Massachusetts. Section C-1 contains those plans for Pilgrim Nuclear Power Station (MCDA/OEP Area II), Section C-2 contains plans for Yankee Nuclear Power Station (Yankee Rowe) and Vermont Yankee Nuclear Power Station (MCDA/OEP Area IV), and Section C-3 contains the plans for Seabrook Station (MCDA/OEP Area I). Sections C-1 through -3 are separately bound documents and are not provided as part of Appendix 3.

MASSACHUSETTS COMPREHENSIVE EMERGENCY RESPONSE PLAN

RADIOLOGICAL EMERGENCY RESPONSE PLAN
FOR
FIXED NUCLEAR FACILITIES

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SECTION A1
INTRODUCTION

A1.1 PURPOSE

This plan was developed to provide guidance and assistance to State and local officials with responsibilities for responding to radiological emergencies at nuclear power stations; to Federal or private agencies who are requested to assist in such response.

A1.2 AUTHORITY

General Laws of Massachusetts Chapter 639, Acts of 1950, as amended and codified in Chapter 33 appendix, Section 13-2B, authorizes the Director of the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) to make plans for response to potential effects of accidents at nuclear power stations. Section 13 also authorizes State coordination of disaster response efforts by local governing authorities who have primary authority and responsibility within their respective jurisdictions.

The administrative authority of the Governor may be delegated to the MCDA/OEP Director. The Director may subdelegate such authority as provided. Section 4 of the Radiological Emergency Response Plan specifies the responsibilities delegated to the MCDA/OEP and others.

Sections 5B and 5H of Chapter 111 of the General Laws of Massachusetts authorize the Commissioner of Public Health to determine what actions are required to protect public health whenever an incident involving radioactive substances or sources affects any part of Massachusetts.

If the Commissioner of Public Health determines that an incident at any nuclear power station requires an emergency response, the Governor has two options:

- Declare a state of emergency in the affected areas under provisions of Chapter 33 Appendix, Section 13-5;

- Declare a state of public health emergency, with the concurrence of the Public Health Council, under provisions of Section 2A of Chapter 17 of the General Laws. The Commissioner of Public Health then may direct state and local agencies to take appropriate action.

In either case, the Secretary of Public Safety acts, through the MCDA/OEP Director, as the Governor's coordinator of emergency response actions taken by State and local agencies as set forth in the State's Comprehensive Emergency Response Plan, and detailed in the hazard-specific supplement to that plan for emergency response to nuclear incidents.

A1.3 GUIDANCE

The general guidance issued by the joint Federal Emergency Management Agency/ Nuclear Regulatory Commission (FEMA/NRC) Steering Committee in NUREG-0654/ FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Revision 1, was used in the development of this plan.

SECTION A2
PLANNING BASIS

This section summarizes the planning concepts upon which the State, Area and local radiological emergency response plans were developed.

A2.1 FIXED NUCLEAR FACILITIES AFFECTING MASSACHUSETTS

Two fixed nuclear facilities operate within the borders of Massachusetts: Pilgrim Nuclear Power Station located in Plymouth, and Yankee Nuclear Power Station (Yankee Rowe) located in Rowe. Two other facilities are located just over the border from Massachusetts: Vermont Yankee Nuclear Power Station (Vermont Yankee) located in Vernon, Vermont; and Seabrook Station, located in Seabrook, New Hampshire. A fifth nuclear facility, Haddam Neck Plant (Connecticut Yankee) is located in Haddam, Connecticut, approximately 40 miles from Massachusetts. These facilities are shown on Figure A2-1.

A2.2 EMERGENCY PLANNING ZONES

The Nuclear Regulatory Commission (NRC)/Environmental Protection Agency (EPA) document entitled Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, NUREG-0396 (EPA 520/1-78-016), provides guidance on radiological emergency response plan development.

Prepared by an NRC and EPA Task Force on Emergency Planning, NUREG-0396 presents the concept of generic emergency planning zones as a basis for planning response actions which would result in dose savings in the environs of nuclear facilities in the event of a serious power reactor accident. The emergency planning zone concept was endorsed by the NRC and the EPA. The Federal Emergency Management Agency (FEMA) has concluded that the guidance in NUREG-0396 should be used as a planning basis for emergency preparedness around nuclear power facilities. The emergency planning zone concept is illustrated on Figure A2-2.

The EPA's protective action guides, accident considerations, and planning needs are factors central to the emergency planning zone concept and development. The emergency planning zones are designated as areas for which plans are prepared to ensure that prompt and effective actions can be taken to protect the public in the event of an accident. Emergency planning zones are considered essential for responding to any accident that would produce offsite doses in excess of the protective action guides. For commercial reactors, a radius of about 10 miles was selected for the plume exposure pathway emergency planning zone (plume zone) and a radius of about 50 miles was selected for the ingestion exposure pathway emergency planning zone (ingestion zone). The emergency planning zones for nuclear facilities affecting Massachusetts are shown in Figure A2-1.

Although the radius for the emergency planning zone implies a circular area, the actual shape depends upon the characteristics of a particular area. The emergency planning zone is of sufficient size to provide a dose reduction to the population from design basis accidents occurring under unfavorable atmospheric conditions. The emergency planning zone also provides for substantial reduction in early severe health effects for the more severe accidents.

A2.2.1 Plume Zone

Principal exposure pathways in the plume zone are a) whole body external exposure to gamma radiation from the plume and from deposited materials, and b) inhalation exposure from the passing radioactive plume. The time of potential exposure could range in length from hours to days.

A2.2.2 Ingestion Zone

Principal exposure pathways in the ingestion zone would be from ingestion of contaminated water or foods, such as milk or fresh vegetables. The time of potential exposure could range from hours to months. However, the time available to implement appropriate protective actions would also be of the same magnitude.

A2.3 BIOLOGICAL EFFECTS OF RADIATION

Human exposure to ionizing radiation is measured in millirems and rems which are units of dose equivalent. Dose depends upon the amount and type of radiation being emitted, the distance from the source, the length of exposure time, and the size of body area exposed. The greater the dose, the greater the biological effect. However, it is impossible to predict precisely how an individual will respond to a particular dose, as effect will vary from one person to another.

Radiation is normally present in the environment. Natural radiation sources annually produce an average dose of approximately one-tenth of a rem (100 millirems) for each person in the United States. People eat, drink, and breathe very small amounts of naturally occurring radioactive materials which can amount to another 25 millirems per year. Fallout from early atomic weapons tests might result in an additional 5 millirems a year. During normal operations, nuclear power stations account for less than one millirem a year to individuals in the general public. By far, the largest exposure to the public from manmade radiation is caused by diagnostic medical X-rays, which average about 70 millirems per year. Estimated average dose rates to the American public from all sources do not exceed one-quarter of a rem (250 millirems) a year.

Federal and international health agencies have studied the effects of radiation and recommend that exposure of the general population should not exceed 500 millirems or one-half rem annually. Although this is considered to be an upper limit, it indicates that receiving twice the normal annual radiation would still not exceed the permissible amount agreed upon by the experts. Understanding the margin of safety recommended by these health officials can be simplified by comparison with some known effects occurring at various radiation levels.

For example, it is difficult to detect any indication of radiation exposure or permanent damage in humans with doses of less than 50 rems (50,000 millirems). Radiation illness may occur above this amount. However,

with exposures of up to 100 rems (100,000 millirems), the symptoms will usually subside within a few weeks. Long-term effects from radiation sickness include increased chance of developing leukemia or other forms of cancer. Higher doses will gradually become more serious, with only a 20 percent chance of survival at 300 rems (300,000 millirems) exposure, and almost none from 1,000 rems (one million millirems) of ionizing radiation.

Radiation effects can be classified in two categories, early or delayed, but these categories are not mutually exclusive.

A2.3.1 Early Effects

Early (acute) effects, occurring within 90 days, may include fatalities, symptoms of radiation sickness, or clinically detectable changes, such as charges in white blood cell counts. However, emergency protective actions can be taken for selected populations to prevent or minimize these effects. The basis for protective action decisions regarding early health effects is not hard to justify because of the imminence of such effects. However, they must be made rapidly under existing constraints, such as severe weather considerations, that impact the need to protect the public.

A2.3.2 Delayed Effects

Delayed statistical effects (i.e., biological effects which can only be observed on a statistical basis) could occur at random in a population that has been exposed to an unplanned release of radioactive materials. These effects may be fatalities or disabilities of somatic or genetic origin. The incidence of these effects is estimated on the basis of statistical evaluation of epidemiological studies in groups of people who have been exposed to radiation. Decisions concerning statistical effect on populations will be more difficult because of the lack of immediacy of the effects. In the long run, these effects might cause the greatest impact on the general population.

A2.4 RADIATION EXPOSURE PATHWAYS

A radioactive plume released from a nuclear power plant consists of gaseous and/or particulate material. Three dominant modes of exposure have been identified from these atmospheric releases. The first is whole body exposure to gamma radiation in the plume. For planning purposes it is assumed that the whole body dose is equivalent to the whole body external exposure. Whole body external exposure is generally a concern associated with submersion in the plume within the plume exposure emergency planning zone.

The second pathway is thyroid exposure to radiological materials. This occurs primarily as a result of inhalation or ingestion of radioactive materials. The principal inhalation dose is from radioiodines, most noticeably iodine-131. Because the thyroid gland concentrates iodines, the thyroid dose can be considerably greater than the corresponding whole body gamma dose. As with whole body exposure, however, thyroid doses are generally associated with direct exposure to the plume within the plume exposure emergency planning zone.

The third mode is exposure of internal organs other than the thyroid gland (e.g., lungs or digestive tract). This mode results from both direct exposure to the plume within the plume exposure emergency planning zone (i.e., breathing the plume), and from indirect exposure to radioactive materials. The indirect exposure is generally a result of ingesting radioactive materials deposited by the plume over the larger area represented by the ingestion pathway emergency planning zone. The indirect exposure generally results from human consumption of contaminated food and water supplies. Exposure to radiation through the food chain occurs most quickly via ingestion of contaminated drinking water, milk, meats, leafy vegetables, and fruits. For this indirect exposure associated with the ingestion pathway, the Food and Drug Administration (FDA) of the U.S. Department of Health and Human Services has identified iodine-131, cesium-134, cesium-137, strontium-90, and strontium-89 as the principal radioactive nuclides of concern.

A2.5 PROTECTIVE ACTION GUIDES

Following an accident involving a release of radioactive material to the atmosphere, there may be a need for rapid action to protect the public from radiation exposure. The EPA provides guidance for the initiation of protective actions in its Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-520/1-75-001.

After a nuclear accident occurs, an estimate is made of the radiation dose which affected population groups may potentially receive. This dose estimate is called the projected dose. A protective action is an action taken to avoid or reduce this projected dose when the benefits derived from such action are sufficient to offset any undesirable features of the protective action. The protective action guide is the projected dose to individuals in the population which warrants taking protective action.

A protective action guide never implies an acceptable dose. Since the protective action guide is based on a projected dose, it is used as an effort to minimize the risk from an event which has a high probability of occurrance, or which is occurring or has already occurred. For protective actions to be most effective, they must be implemented as soon as practical after the decision to take the action has been made.

Protective action guides are the numerical projected doses which act as trigger points to initiate protective actions. This projected dose does not include the unavoidable dose that has already been received prior to the time the projection is made nor does it include the dose received prior to implementation of the protective action. Protective action guides are provided for three principal pathways of radiation exposure:

1. External exposure to the whole body from the radioactive cloud and deposited materials;

2. Internal exposure from the inhalation of radioiodines and particulates; and

3. Internal exposure from the ingestion of food, water, and milk contaminated with radioactivity.

A2.5.1 Protective Action Guides for Direct Exposure Within the Plume Exposure Emergency Planning Zone

For direct exposure to a radioactive plume, the EPA delineates a range of protective action guide doses for the general public, as noted in Table A2-1. These guidelines provide protection for the most sensitive members of the general population: pregnant women and infants. Massachusetts has chosen to base its protective action decisions on the lowest values recommended by EPA, that is, a 1 rem whole body dose, and a 5 rem thyroid dose. In the event of an emergency, unanticipated events may make adherence to the minimum values impossible, but planning to base protective action decisions on the minimum doses increases the probability that the upper end of the EPA protective action guide range will not be exceeded.

The protective action guide doses for emergency worker exposure are significantly higher than the lower level protective action guides recommended for the public. These reflect the reduced sensitivity of emergency workers to radiological exposure (e.g., there are no infants or pregnant women in the emergency worker force), and the higher exposure warranted by the critical role played by emergency workers in helping to protect the general public. Emergency worker protective action guide doses (i.e., exposures greater than the protective action guide doses for the general public) must be specifically authorized by the Massachusetts Department of Public Health (MDPH).

Lifesaving protective action guide doses may be authorized by the MDPH for volunteer emergency wokers only when necessary to save lives. These protective action guide doses, however, have little applicability to offsite emergency response activity.

Authorization of onsite emergency workers to exceed normal exposure limits is the responsibility of the utility.

A2.5.2 Protective Action Guides for Indirect Exposure Within the Ingestion Pathway Emergency Planning Zone

Protective action guides for ingestion exposure assume that the population group receiving radiation doses via the food chain receive only insignificant doses from other pathways such as external exposure or exposure resulting from inhalation of airborne radioactive materials. If this is not the case, the initiation of protective actions will be based on consideration of the total radiation dose from all pathways. As with the protective action guides established for direct exposure, these protective action guides are defined in terms of projected dose, and no prior accumulated dose is taken into account. These protective action guides are listed in Table A2-2.

The FDA has developed protective action guides for use in protecting the public from radiation exposure via the ingestion pathway (43 FR 58790). These guides are for exposures to radionuclides such as iodine-131, cesium-134, cesium-137, strontium-90, and strontium-89, which can be deposited on pastures, food crops, and orchards, or on produce ready for sale in retail markets. Of special importance is contamination of milk through the pasture-cow-milk-child pathway. The protective action guides have been developed for whole body and thyroid exposures. Whole body exposure guides include consideration of the effects of radiation on bone marrow and other organs.

Two categories of protective action guides for human food and livestock feed have been promulgated by the FDA for radiological accidents: preventive protective action guides and emergency protective action guides.

A2.5.2.1 Preventive Protective Action Guides

Preventive protective action guides are applicable to situations where protective actions will cause minimal impact on the food supply. A preventive protective action guide establishes a level at which responsible officials should take protective actions to prevent or reduce the concentration of radioactivity in food or livestock feed. By taking action at this level, food and water can be conserved for use. Preventive actions can include sheltering food supplies, placing dairy herds on stored feed, washing and peeling vegetables or fruits, and delaying distribution of foods and milk to market until radioactive decay reduces contamination levels.

The following criteria are provided for guidance on the need to implement protective actions at the preventive protective action guide level:

- 0.5 rem dose commitment to the bone marrow or whole body for an exposed individual in the population

- 1.5 rem dose commitment to the thyroid

Table A2-3 shows response levels corresponding to preventive dose commitments.

A2.5.2.2 Emergency Protective Action Guides

Emergency protective action guides are applicable to accidents where protective actions of great impact on the food supply are justified because of the projected health hazards. An emergency protective action guide establishes a level at which responsible officials should isolate radioactive food to prevent its sale and at which the responsible officials must determine whether condemnation or other disposition is appropriate (see Table A2-4).

The following criteria are provided for guidance on the need to implement protective actions at the emergency protective action guide level:

- 5 rem dose commitment to the bone marrow or whole body for an exposed individual in the population
- 15 rem dose commitment to the thyroid

A2.6 PROTECTIVE ACTIONS FOR DIRECT EXPOSURE WITHIN THE PLUME EXPOSURE EMERGENCY PLANNING ZONE

Three protective actions for limiting direct exposure of the general public will be considered within the plume exposure emergency planning zone. These are access control, sheltering, and evacuation.

A2.6.1 Access Control

Access control restricts entry into the plume exposure emergency planning zone. It is a necessary adjunct to either sheltering or evacuation. Access control restricts persons from entering an area where they may be exposed to radiation. It also helps clear traffic from the roads within the emergency planning zone so they may be better used for evacuation and/or emergency vehicles, if these measures are advised. Access control also provides security for areas that have been evacuated.

A2.6.2 Sheltering

Sheltering involves remaining inside, closing all doors and windows, turning off all ventilation systems, extinguishing all unnecessary combustion, and sealing, to the extent possible, all other access to the outdoor air. All these actions limit the exchange of indoor air with outdoor air that may be contaminated with radioactive materials. Heavier construction materials or increased layers of building material increase the amount of protection from exposure to radiation through increased shielding. Therefore, shelter should be sought in the lowest level of the building (e.g., in basements),

away from windows. Sheltering can reduce both whole body and thyroid doses. Representative shielding afforded by various structures is shown in Table A2-5.

Generally, sheltering can provide significant protection for about 2 hours in small residential structures. Larger masonary structures, like institutions, can provide protection for up to 5 hours. This degree of protection is afforded by small structures. The main reason sheltering is a valuable protective action is that it can be implemented quickly, usually in matter of minutes, as compared to evacuation which can require hours to implement. The dose reduction from which an individual benefits by sheltering is a function of how well the structure is sealed and how long the plume takes to travel over the area.

A2.6.3 Evacuation

If significant radiological exposure can be avoided by implementing a timely evacuation, evacuation may be the preferred protective action.

The constraint to using evacuation is the time required to initiate, implement, and complete the action. In addition, evacuation involves significant displacement of people, families, and economic activities, and potential problems associated with controlling access and maintaining the security of evacuated areas. Likewise, an evacuation involves some limited potential public safety risk. These difficulties will be considered prior to ordering an evacuation.

A2.7 PROTECTIVE ACTIONS FOR INDIRECT EXPOSURE WITHIN THE INGESTION PATHWAY EMERGENCY PLANNING ZONE

Protective actions for indirect exposure are designed to minimize opportunities for the human consumption of radiologically contaminated material. The following protective actions are included in this category.

A2.7.1 Food Control

Field and orchard crops or other foods may be contaminated by deposition from the radioactive plume. Preventive actions require these foods to be stored until the radioactivity has decayed or been washed off. Emergency protective actions will be used only if crops have been so heavily contaminated that preventive measures are ineffective. Emergency actions implemented by the Massachusetts Department of Food and Agriculture will prevent contaminated food from entering the marketplace.

A2.7.2 Water Control

Water supplies that receive a major portion of their water from the power station's surrounding watershed will be the focus of protective actions for water control should there be a release of radioactive materials to the environment. The soil may have been contaminated and runoff may concentrate radioactive materials in the water supply. Reservoirs that are filled by pumping from flowing streams can be protected by prohibiting pumping when runoff causes an increase in contamination. Public surface water supplies can be temporarily condemned until testing for radioactivity levels can be undertaken to confirm or refute the need for control. Wells and groundwater sources are not likely to be contaminated but will be checked if they are muddy or otherwise suspected of having received runoff from contaminated soils. The Massachusetts Department of Environmental Quality Engineering, Water Supply Division, maintains a listing of all public water supplied.

A2.7.3 Milk Control

Preventing contamination of milk is an important element of the ingestion pathway protective actions. Preventive actions for controlling consumption of contaminated milk include two approaches. One involves protecting animal feed and ordering dairy farmers to use only stored feed rather than letting herds graze on contaminated pastures. In Massachusetts, contamination of dairy feed is not likely to be a significant problem, since 75 to 80 percent of all feed is stored. Most silos are filled for the year, and emptied daily according to need. Horizontal silos using plastic or other coverings are becoming the dominant method of feed storage.

The second preventive action is for milk that has been directly contaminated. It involves delaying its release to market or diverting it to other uses which allow the radioactivity to decay before consumption. In addition to the above, emergency protective actions may require condemning and destroying milk supplies to prevent distribution to the market. The Massachusetts Department of Food and Agriculture will implement protective actions for milk products.

A2.8 PROTECTIVE ACTION DETERMINATION

One purpose of developing a Radiological Emergency Response Plan is to reduce the response time in the event of an emergency at a nuclear power station. To facilitate planning, a number of accident scenarios have been developed by NRC. These are the basis for the protective action decision criteria discussed in this section. It should be noted, however, that these criteria are sufficiently flexible to be applied to any type of radiological release from a nuclear power plant.

A2.8.1 Protective Action Determination Within the Plume Exposure Pathway Emergency Planning Zone

The discussion below explains the decision process for choosing shelter or evacuation as a protective action during an emergency response. The eight variables involved in choosing between shelter and evacuation are:

1. Protective Action Guides - These are discussed in Section A2.5. Table A2-1 presents the protective action guides for the direct exposure pathway.

2. Projected Dose - The amount of radiation received through direct exposure to the plume assuming no protective actions are taken. The projected dose is determined by the MDPH according to accident assessment procedures discussed in Section A7.

3. Time to Release - An estimate of the time remaining between the present and an anticipated release of radioactive materials from

the plant. This estimate is provided to the MDPH by the power plant operator.

4. Plume Arrival Time - The time period between release of radioactive material into the atmosphere and the arrival of the leading edge of the plume at the reference location. The MDPH will obtain this information from the utility, in accordance with established utility procedures through its own monitoring, and from independent plume model calculations.

5. Plume Exposure Time - The elapsed time between plume arrival at the reference location and the time when it has passed the reference location. The MDPH will obtain this information from the utility in accordance with established utility procedures and from its own accident assessment activity. The cloud exposure time is determined by the duration of the release and meteorology.

6. Delay Time - The elapsed time between the determination that a release will occur and the issuance of protective action instructions to the public. The Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) will estimate the delay time based on its knowledge of the decision process and the notification system.

7. Action Time - The estimated time required to complete an evacuation of an area, or to implement sheltering. MCDA/OEP will use these estimates, which are based upon an assessment of actual road conditions existing during an emergency.

8. Dose Reduction Factor - The dose reduction factor is the amount of protection offered by a protective action. It is measured as the proportion of the projected dose that is expected after a protective action has been taken. The dose reduction factor can range from zero (complete protection) to 1.0 (no protection). The EPA has developed dose reduction factors for various shelter and

evacuation scenarios and presented them in two documents: Protective Action Evaluation, Part I, the Effectiveness of Sheltering as a Protective Action Against Nuclear Accidents Involving Gaseous Releases (EPA 520/1-78-001A) and Protective Action Evaluation, Part II, Evacuation and Sheltering as Protective Actions Against Nuclear Gaseous Releases (EPA 520/1-78-001B).

The protective action guides have been predetermined as outlined in Table A2-1. Dose reduction factors for typical structures have also been predetermined. Relative reduction factors for protection from plume exposure and surface deposited radionuclides are shown in Table A2-5 and Table A2-6. The values for the other six variables will be determined during the emergency.

A2.8.2 Decision Process for Selection of Protective Actions for Ingestion Pathway Exposures

The decision process for determining protective actions for ingestion pathway exposures is similar to the decision process for determining protective actions against direct exposure in the plume emergency planning zone. Recommended protective action guides for ingestion pathway exposure are listed in Table A2-2.

To facilitate rapid decision making, a radioactivity level which corresponds to the protective action guide for a particular food pathway is used. This level is the amount of radiation in food, water, or animal feed that would ultimately result in exceeding the protective action guide if it were allowed to pass up through the food chain to the human consumers. For example, if the level of iodine-131 on a pasture exceeds the precalculated radioactivity level, the human dose resulting from the pasture-animal-milk pathway would exceed the protective action guides if preventive actions were not taken for milk. This radioactivity level to protective action guide dose conversion calculation has been described by the FDA in 43 FR 58790.

The MDPH procedures and precalculated levels for specific pathways are based on this guidance.

The MDPH must determine whether a preventive protective action guide may be exceeded for one or more of the three ingestion pathways. This entails using the response levels for milk, other foods, and water to determine whether the preventive protective action guides, listed in Table A2-3, may be exceeded. If the answer is negative, no protective action is required. If the answer is positive for one or more of the pathways, the Governor will be advised to order preventive actions until more definitive analysis can be undertaken. Preventive actions involve control of the ingestible material by the appropriate state agency followed by field testing to more accurately define the levels of contamination. Upon activating preventive actions, the MDPH must proceed to the third decision step.

If predictive techniques show potential for exceedance of emergency protective action guide levels (Table A2-4) of the ingestible commodity, the MDPH will advise control or condemnation pending verification by field data. If field data confirm predicted contamination, the MDPH will advise condemnation or storage for suitable future use.

If field data show levels below the appropriate response levels, state control of the ingestible material will be relinquished. In either event, the MDPH will issue advisories on the nature of the controls for each ingestible material and means for minimizing ingestion of radioactive materials.

A2.9 TERMINATION OF PROTECTIVE ACTIONS

The lifting of controls for protective actions may be justified on the basis of cost savings when the corresponding health risks have been adequately reduced. For example, the costs incurred by the public and state and local governments in maintaining food, water, and milk control will exceed the risk reduction value of these controls after a certain period of time. At this point, the controls may be lifted. The costs for maintaining these

controls should remain relatively constant with respect to time, while their significance in reducing risk will decrease as the released nuclides disperse or decay away.

A2.10 EMERGENCY CLASSIFICATION

Each nuclear power station addressed by this plan has established its radiological accident classifications in conformance with current federal regulatory guidance. The classification system is based upon emergency action levels that have been categorized according to potential offsite doses. Emergency action levels are expressed as predetermined plant parameters, radioactive release potentials, and/or measured offsite radiation levels. The classification system also provides indication of the offsite response required by state and local officals with respect to notification, radiological response, and recommended protective measures.

The four emergency classes in order of increasing severity, are Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency.

Examples of initiating conditions for each accident class have been established by the NRC and Federal Emergency Management Agency and are contained in NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1. These initiating conditions form the basis for the specific plant instrumentation readings emergency action levels which, if exceeded, will initiate the emergency class notification by the power plant operator. For specific initiating conditions and emergency action levels, refer to each nuclear power station's site emergency plan. State and local response to each accident class are discussed in Section 5.

A2.10.1 Notification of Unusual Event

This classification applies to an unusual plant condition which either has occurred or is impending. This plant condition could eventually lead to a potential degradation in overall safety. Inherently, however, this is a situation in which time is available for the plant operator to take

precautionary and constructive steps to prevent a more serious event or to mitigate any consequences that may occur. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

The purpose of this classification is to provide offsite notification 1) to assure that the first step in any response later found to be necessary has been carried out, 2) to bring the operating staff to a state of readiness, and 3) to provide systematic handling of information and decision making.

A2.10.2 Alert

An Alert classification is declared when events are in progress or have occurred which involve an actual or potential degradation of the level of plant safety. Although the potential for limited releases of radioactivity in excess of plant technical specification limits may exist, the initial assessment leading to this classification indicates that it is unlikely that an offsite hazard will be created. Any releases which do occur would be expected to be limited to a small fraction of the protective action guide levels.

The purpose of this classification is 1) to assure that emergency personnel are readily available to respond if the situation becomes more serious and to perform confirmatory radiation monitoring, if required, and 2) to provide offsite authorities with current status information.

A2.10.3 Site Area Emergency

The Site Area Emergency classification is declared when events are in progress or have occurred which involve actual or impending major failures of plant functions. In these events, there is a potential for offsite releases which could impact the public to the extent that protective actions are recommended. Any releases which do occur would not be expected to exceed protective action guide levels except near the site boundary.

The purpose of this classification is 1) to assure that response centers are manned, 2) to assure that monitoring teams are dispatched, 3) to assure that personnel required for evacuation are at their duty stations if the situation becomes more serious, 4) to provide consultation between onsite and offsite authorities, and 5) to provide information updates for the public through offsite authorities.

A2.10.4 General Emergency

The General Emergency classification indicates that events are in progress or have occurred which involve actual or imminent substantial core degradation or melting and a potential for loss of containment integrity. Releases can reasonably be expected to exceed protective action guide exposure levels offsite for more than the immediate site area.

The purpose of this classification is 1) to initiate predetemined protective actions, 2) to provide continuous assessment of information from onsite and offsite organization measurements, 3) to initiate additional measures as indicated by actual or potential releases, 4) to provide consultation with offsite authorities, and 5) to provide information updates for the public through offsite authorities.

TABLE A2-1

RECOMMENDED PROTECTIVE ACTION GUIDES FOR PLUME EXPOSURE PATHWAY

Projected Dose to the Population (rem)		Recommended Actions*	Comments
Whole Body	Less than 1	No protective action required.	Previously recommended protective actions may be reconsidered or terminated.
or			
Thyroid	Less than 5	State may issue an advisory to seek shelter and await further instructions or to voluntarily evacuate.	
		Monitor environmental radiation levels.	
Whole Body	1 to less than 5	Seek shelter and await further instructions. Consider evacuation, particularly for children and pregnant women.	
or			
Thyroid	5 to less than 25		
		Monitor environmental radiation levels.	
		Control access.	
Whole Body	5 and above	Conduct mandatory evacuation of populations in the predetermined area.	Seeking shelter would be alternative if evacuation were not immediately possible.
or			
Thyroid	25 and above		
		Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels.	
		Control access.	

*These action are recommended for planning purposes. Protective action decisions at the time of the incident must take into consideration the [illegible]

TABLE A2-1 (Cont)

RECOMMENDED PROTECTIVE ACTION GUIDES FOR PLUME EXPOSURE PATHWAY

Projected Dose to the Population (rem)		Recommended Actions*	Comments
Whole Body or Thyroid	5 to 25 125	Control exposure of emergency team members to these levels except for lifesaving missions. (Appropriate controls for emergency workers include time limitations and use of respirators, self-contained breathing apparatus, and stable iodine.)	Although respirators, self-contained breathing apparatus, and stable iodine should be used where effective to control dose to emergency team workers, thyroid dose may not be a limiting factor for lifesaving missions.
Whole Body or Thyroid	75 **	Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)	Exposure should be only for the most compelling reasons.

* These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take into consideration the impact of existing constraints.

** No specific upper limit is given for thyroid exposure, since in the extreme case complete thyroid loss might be an acceptable penalty for a life saved. However, this should not be necessary if respirators and/or thyroid protection for rescue personnel are available as the result of adequate planning.

SOURCE:

Manual for Protective Action Guides and Protective Actions for Nuclear Incidents, September 1979 and as revised June 1980, U.S. Environmental Protection Agency.

TABLE A2-2

RECOMMENDED PROTECTIVE ACTION GUIDES FOR INGESTION EXPOSURE PATHWAYS

Projected Dose to the Population (rem)	Recommended Actions*	Comments
Whole Body 0.5 Thyroid 1.5	Preventive Actions	
	Fruits, grains and vegetables • Washing, milling, or peeling to remove surface contamination • Preservation to permit radioactive decay of short-lived radionuclides • Diversion to nonhuman consumption • Disposal of products in which the radioactivity cannot be reduced to acceptable levels	The most efficient protective action must be taken. Officials must weigh the health benefits to be gained from reduction in radiation dose against the cost of disrupting the food supply.
	Water • Provide alternate source of potable water • Designate critical users such as fire-water systems or industrial systems.	
	Milk and meat • Remove animals from pasture and place on uncontaminated stored feed • Diversion to production of milk and meat products • Disposal of milk and meat products in which radioactivity cannot be reduce to acceptable levels.	

TABLE A2-2 (Cont)

RECOMMENDED PROTECTIVE ACTION GUIDES FOR INGESTION EXPOSURE PATHWAYS

Projected Dose to the Population (rem)	Recommended Actions*	Comments
Whole Body 5 Thyroid 15	Emergency Actions • All of the above preventive actions, or • Condemn and destroy products in which the radioactivity cannot be reduced to acceptable levels.	The food value of the product and the availability of uncontaminated products must be considered prior to condemnation.

SOURCE:

Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, September 1979 and as revised June 1980, U.S. Environmental Protection Agency.

TABLE A2-3

RESPONSE LEVEL FOR PREVENTIVE PROTECTIVE ACTION GUIDE [1,2]

	Iodine 131[3]	Cesium 134	Cesium 137	Strontium 90	Strontium 89
Organ of Interest	Thyroid	Whole Body	Whole Body	Bone Body	Bone
Initial Deposition (uCi/m)	0.13	2	3	0.5	8
Peak Activity Pasture(uCi/kg)[4]	0.05	0.8	1.3	0.18	3
Milk or Water (uCi/liter)	0.015	0.15	0.24	0.009	0.14
Total Intake (uCi)	0.09	4	7	0.2	2.6

NOTES:

1. Response levels which correspond to 0.5 rem whole body or bone; 1.5 rem thyroid.

2. Newborn infant critical segment of population for iodine-131. For other radionuclides "infant" refers to child less than 1 year of age.

3. From fallout, iodine-131 is the only radionuclide of significance with respect to milk contamination beyond the first day. In case of a reactor accident, the cumulative intake of iodine-133 via milk is about 2 percent of iodine-131 assuming equivalent deposition.

4. Fresh weight.

SOURCE:

Accidental Radioactive Contamination of Human Food and Animal Feeds, Federal Register, Vol. 47, No. 205, October 22, 1982, Department of Health and Human Services, Food and Drug Administration.

TABLE A2-4

RESPONSE LEVEL FOR EMERGENCY PROTECTIVE ACTION GUIDE (PAG)[1]

	Iodine-131[2]		Cesium-134		Cesium-137		Strontium-90		Strontium-89	
	Infant[3]	Adult	Infant	Adult	Infant	Adult	Infant	Adult	Infant	Adult
Organ of Interest	Thyroid		Whole Body		Whole Body		Bone		Bone	
Initial Deposition (uCi/m)	1.3	18	20	40	30	50	5	20	80	1600
Peak Activity										
Pasture, (uCi/kg)[4]	0.5	7	8	17	13	19	1.8	8	30	700
Milk or Water (uCi/liter)	0.15	2	1.5	3	2.4	4	0.09	0.4	1.4	30
Total Intake (uCi)	0.9	10	40	70	70	80	2	7	26	400

NOTES:

1. Response levels which correspond to 5 rem whole body or bone; 15 rem thyroid.
2. From fallout, iodine-131 is the only radioiodine of significance with respect to milk contamination beyond the first day. In case of a reactor accident, the cumulative intake of iodine-133 via milk is about 2 percent of iodine-131 assuming equivalent deposition.
3. Newborn infant critical segment of population for iodine-131. For other radionuclides, infant refers to child less than 1 year of age.
4. Fresh weight.

TABLE A2-4 (Cont)

RESPONSE LEVEL FOR EMERGENCY PROTECTIVE ACTION GUIDE (PAG)

SOURCE:

Accidental Radioactive Contamination of Human Food and Animal Feeds, Federal Register, Vol. 47, No. 205, October 22, 1982, Department of Health and Human Services, Food and Drug Administration.

TABLE A2-5

REPRESENTATIVE SHIELDING FROM PLUME EXPOSURE

Structure or Location	Exposure Reduced by	Relative Protection
Outside	0	less protection
Vehicles	0	
Wood-frame house (no basement)	10%	
Basement of wood house	40%	
Masonry house* (no basement)	40%	
Basement of masonry house	60%	
Large office or industrial building	80%	more protection

*A wood frame house with brick or stone veneer is approximately equivalent to a masonry house for shielding purposes.

SOURCE:

Adapted from Public Protection Strategies for Potential Nuclear Reactor Accidents: Sheltering Concepts with Existing Public and Private Structures, SAND 77-1725, February 1978, Sandia Laboratories.

TABLE A2-6

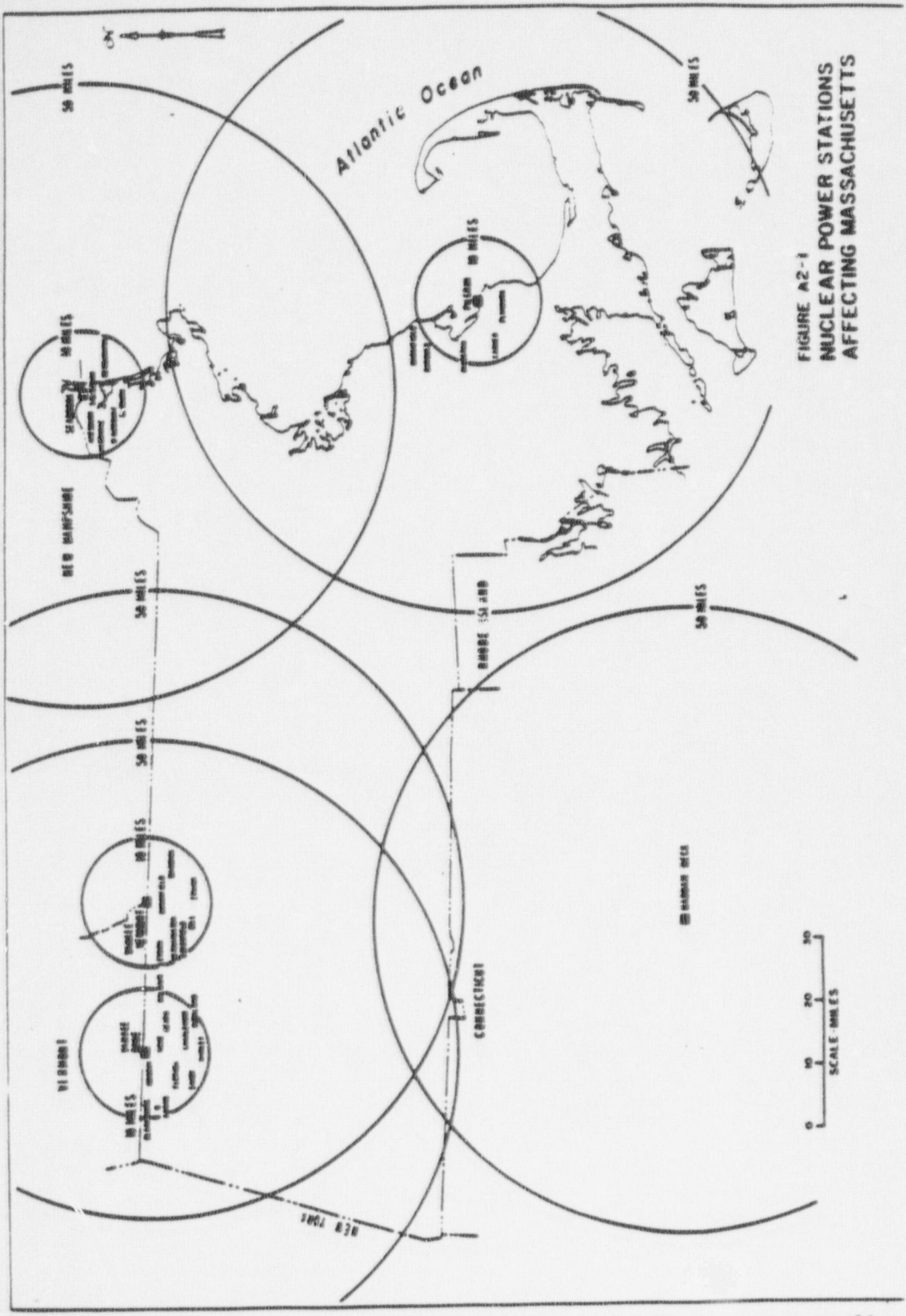
REPRESENTATIVE SHIELDING FROM
SURFACE DEPOSITED RADIONUCLIDES

Structure or Location	Exposure Reduction (percentage)
1 meter above a smooth surface	0
1 meter above ordinary ground	30
1 meter above center of 50-ft roadways, 50% decontaminated	45
Cars on 50-ft road:	
Road fully contaminated	50
Road 50% decontaminated	50
Road fully decontaminated	75
Trains	60
One- and two-story wood-frame house (no basement)	60*
One- and two-story block and brick house (no basement)	80*
House basement, one or two walls fully exposed:	90*
One story, less than 2 ft of basement walls exposed	95*
Two stories, less than 2 ft of basement, walls exposed	97*
Three- or four-story structures, 5,000 to 10,000 square ft per floor:	
First and second floors	95*
Basement	99*
Multistory strutures, 10,000 square ft per floor:	
Upper floors	99*
Basement	99.5*

* Away from doors and windows.

SOURCE:

Adapted from Public Protection Strategies for Potential Nuclear Reactor Accidents: Sheltering Concepts with Existing Public and Private Structures, SAND 77-1725, February 1978, Sandia Laboratories.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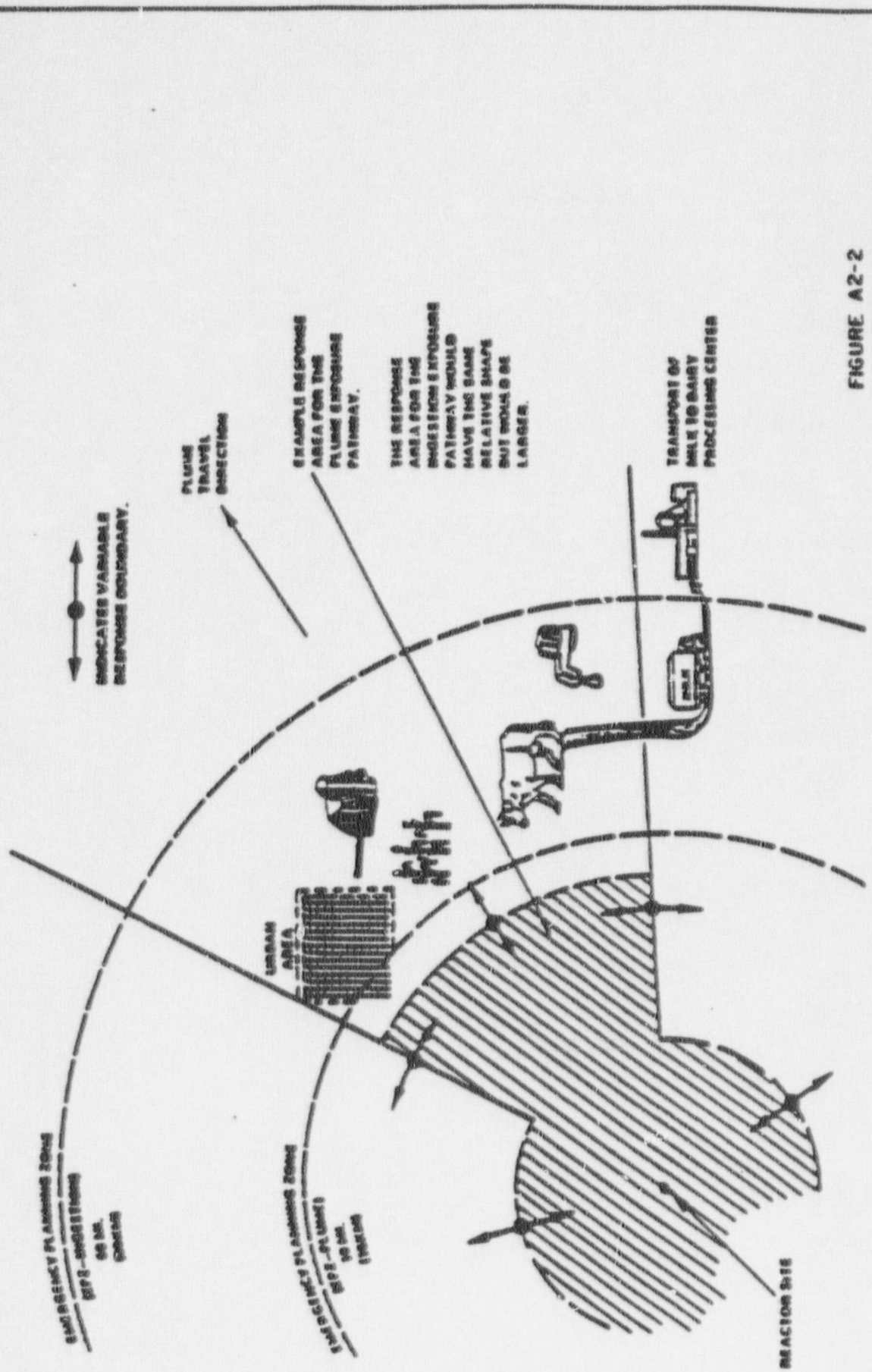


FIGURE A2-2
CONCEPT OF EMERGENCY PLANNING ZONES

SECTION A3
CONCEPT OF OPERATION

This section summarizes the operational concepts and the emergency organization that would be used in responding to a radiological emergency at a nuclear power station.

A3.1 EMERGENCY ORGANIZATION AND RESPONSIBILITIES

The emergency organization established by government and private organizations in response to a radiological emergency is shown on Figures A3-1 and A3-2. The general responsibilities of each organization in the event of a radiological emergency are described in this section.

A3.1.1 Nuclear Power Stations

Nuclear power stations, by virtue of their licensing agreements with the U.S. Nuclear Regulatory Commission (NRC) and agreements with the Commonwealth, have accepted responsibility for initiating the necessary immediate action required to:

Minimize the consequences of an incident.

Evaluate conditions and determine the magnitude of an incident.

Immediately notify appropriate State and Federal agencies.

Minimize public and plant personnel radiation exposure and/or injury.

Take immediate steps to limit or reduce the loss of property.

Upon declaration of an emergency, the station will mobilize its emergency response organization in accordance with the emergency class. Emergency

response organizations for each nuclear power station are described further in each facility's emergency response plan.

A3.1.2 Local Government

Legally and practically, the primary responsibility for the safety of citizens and the protection of property rests with the government of each city and town. In the event of a radiological emergency, each community will mobilize and utilize all resources available to it to mitigate the emergency. When determined necessary by the Governor, the State may assume direction and control of the community's emergency operations. In that event, the community must comply with that direction and control and continue in the coordination and utilization of its resources.

The emergency organization of each community and its response to a radiological emergency at a nuclear power station are presented in detail in each EPZ community's RERP.

A3.1.3 State Government

The capability of local government to protect public health and continue essential public services may be overwhelmed under emergency conditions. In such instances, the State must be prepared to augment local government operations through a coordinated delivery of resources and personnel.

The State emergency organization conforms to the normal government structure. Certain State agencies have assigned disaster response functions, either as the primary agency for a given functional field, or for the provision of support and assistance in carrying out functions assigned elsewhere.

Such assignments are made through executive or administrative order, through enabling legislation, or through other agreement. Task assignments for lead agencies in responding to a radiological emergency are summarized in Section A4.3.

Upon notification of an Alert class emergency, or at the request of the director of the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP), State agencies having assigned emergency response functions in this plan will dispatch designated representatives to the State Emergency Operating Center (EOC).

A3.1.4 Federal Government

Emergency aid and disaster assistance to the state and local governments may be provided by the Federal government through the Federal radiological emergency response plan. Such assistance is intended to supplement, rather than replace, the efforts of State and local government.

While all Federal agencies have been directed to assist in emergency operations, the general coordination of Federal disaster operations with the State is the responsibility of the Federal Emergency Management Agency. Additional primary response assistance are provided directly by the U.S. Coast Guard and NOAA. Details of the federal response are provided in Section A4.4.

A3.1.5 Private Sector

Support from the private sector may be provided directly to the utility, local, State, and Federal organizations and agencies. Any support provided will be under the direction of the requesting agency and in accordance with existing agreements. The American Red Cross is the primary private sector response agency for managing and providing mass care services.

A3.2 COMMAND AND COORDINATION

Responsibilities for the command and coordination of emergency operations among local, State, and Federal governments are summarized in the following subsections.

A3.2.1 Local Responsibilities

The authority and responsibility for direction of local emergency response operations rests with the city or town's chief executive. Authority to

accomplish certain tasks or emergency functions may be delegated to heads of departments as the chief executive deems appropriate.

The direction of local emergency response operations may be delegated to the local civil defense director. The local civil defense director is also responsible for coordinating the community's emergency response and ensuring a coordinated response with neighboring communities.

Operations beyond the local area will be coordinated through the MCDA/OEP Area director.

For details of the command and coordination of local communities' emergency response operations, refer to the site-specific local plans.

A3.2.2 State Responsibilities

The Governor has ultimate command and control authority of all State operations. The direction of emergency response is exercised, on behalf of the Governor, by the Secretary of Public Safety.

The coordination of State emergency response operations is the responsibility of the MCDA/OEP. For purposes of emergency reponse, the State has been divided into four operating areas. The Area offices of the MCDA/OEP provide liaison among the local communities and between the local communities and the State. MCDA/OEP is responsible for coordinating State emergency response operations with adjoining states.

The MOCA/OEP is also responsible for coordinating the nontechnical response of the Federal government with the Federal Emergency Management Agency. Technical response provided by the Federal government will be coordinated by the Massachusetts Department of Public Health (MDPH). This includes accident assessment and monitoring assistance provided by the U.S. Department of Energy, U.S. Environmental Protection Agency, and the Nuclear Regulatory Commission.

A3.2.3 Federal Responsibilities

Federal nontechnical support of State and local operations will be coordinated through the Federal Emergency Management Agency, Region I Director in Boston. Federal technical support provided to the State will be coordinated between the Massachusetts Department of Public Health and the responding federal agency.

A3.3 EMERGENCY RESPONSE FACILITIES

Emergency facilities are operated at the local and State levels, as well as by the utility. The Federal Emergency Management Agency will operate a Federal Response Center near the EPZ to coordinate the activities and communications among the various federal agencies responding, should the Federal Radiological Emergency Response Plan be activated.

A3.3.1 Locally Operated Facilities

Local emergency facilities are described fully in the local radiological emergency response plans.

A3.3.1.1 Emergency Operating Center

Each locality involved in emergency response operates its own emergency operating center (EOC). The center serves as command and control headquarters of local emergency response activities, as well as the center for communications to local field units and to the area and State EOCs.

A3.3.1.2 Reception Centers

Reception centers will be operated by local officials in each of the designated host communities. Local officials will be responsible for overseeing the reception, radiological monitoring, registration, and processing of evacuees. Assistance is available from MCDA/OEP, as requested.

A3.3.1.3 Local Dispatch Centers

These facilities provide 24-hour notification and police, fire, and medical dispatch services to local communities in their service areas.

A3.3.1.4 Mass Care Facilities

The American Red Cross, under existing agreements, will operate mass care facilities in host communities to provide temporary shelter, feeding, and clothing for evacuees.

A3.3.2 State-Operated Facilities

A3.3.2.1 State Emergency Operating Center

The State Emergency Operating Center, located at MCDA/OEP Headquarters at 400 Worcester Road in Framingham, serves as the command and control center for offsite emergency response.

The State EOC is capable of continuous (24-hour) operations for a protracted period. The center contains sufficient communications (radio, telephone, and teletype) equipment, maps, emergency plans, and status boards to provide the necessary interfacing with other State, local, Federal and utility emergency facilities (see Table A3-1). The Director of the MCDA/OEP is responsible for assuring continuity of necessary technical, administrative, and material resources. EOC RERP Procedures included in this plan provides instructions for EOC operations for MCDA.

The State EOC staff varies according to circumstances. Section A3.3.4 describes the staffing of emergency response facilities. State agencies having emergency functions will provide representatives to the State EOC upon its activation or at the request of the Director of the MCDA/OEP.

A3.3.2.2 MCDA/OEP Area Emergency Operating Centers

Each of the four MCDA/OEP Areas has its own headquarters. The Area EOC closest to the affected emergency planning zone will serve as local liaison with the State EOC and coordinate emergency operations among the local communities. Area EOCs are described more fully in the Area plans.

A3.3.2.3 State Police Troop Headquarters

The State Police Troops A (Framingham - Seabrook), B (Northampton - Rowe and Vernon), and D (Middleborough - Pilgrim) headquarters are the primary State warning points serving as the central communication and information point for initial notification of offsite authorities during an emergency. Communications are provided by dispatchers on a 24-hour basis. Communications links to utilities, MCDA/OEP, MCDA/OEP Areas, MDPH, local dispatch centers, local State Police barracks, the Governor, and State Police in other states are provided.

A3.3.2.4 Massachusetts Department of Public Health Facilities

These facilities include Massachusetts Department of Public Health offices in Boston, the MDPH Radiation Laboratory located in Jamaica Plain, mobile units, and other facilities specified in the Nuclear Incident Advisory Team (NIAT) Handbook. The MDPH facilities will be used to assess the radiation hazard and determine the appropriate protective actions.

A3.3.3 Utility-Operated Facilities

Site-specific utility-operated facilities are described in more detail in Exhibits A2 through A5.

A3.3.3.1 Nuclear Power Plant Control Room

The control room serves as a direct link to offsite officials at the initial phases of the incident before the emergency operations facility is activated. Initial incident classification and notification is transmitted to the State Police from the control room.

A3.3.3.2 Emergency Operations Facility

The emergency operations facility (EOF) is an emergency response facility located near the nuclear power station for the purpose of providing continuous coordination and evaluation of licensee, State, local, and Federal activities during an emergency having potential environmental consequences. The initial function of the EOF is to evaluate the magnitude and effects of actual or potential radioactive releases and to recommend appropriate offsite protective measures. The MCDA/OEP and the MDPH will dispatch representatives to the EOF upon its activation. Responsibilities of these representatives are detailed in Sections A7.1.2 and A7.1.3. The EOF also will accommodate representatives from the NRC and contiguous states' civil defense and public health organizations as appropriate.

A3.3.3.3 Media Center

Each nuclear power station will establish a media center. The media center will contain facilities for utility representatives to meet with State and Federal representatives for the purpose of coordinating the release of emergency announcements to the news media. The media center will be activated during an emergency having or potentially having environmental consequences. The State will dispatch public information representatives to the media center upon its activation. Emergency public information is discussed in Section A12. Media centers for each nuclear power station are discussed in more detail in Exhibits A2 through A5.

A3.3.4 Staffing of Emergency Response Facilities

Table A3-1 outlines activation and staffing of emergency response facilities at the four emergency classes. Several of the facilities are staffed on a 24-hour basis under normal circumstances. These include the State Police troop headquarters, plant control room, and the local dispatch centers. During an emergency situation, the control room staff is augmented by emergency personnel. At the State Police troop headquarters and local dispatch centers, emergency operations are the same as normal operations, with the regular staff responsible for all activities.

The State EOC in Framingham, the MCDA/OEP Area, and the MDPH headquarters are staffed during normal working hours. The State EOC is staffed on a 24 hour basis. During an emergency, these facilities are more fully activated, with emergency staff from support agencies augmenting the regular staff. These facilities will be activated upon notification of an Alert class or higher class accident.

Upon request of the Director, MCDA/OEP, representatives of Executive Order 144 agencies will report to the State Emergency Operating Center, Framingham. Representatives have been designated to provide 24-hour coverage as necessary. The Director, MCDA/OEP, may also request representation from other State agencies and private organizations commensurate with the emergency.

Provisions have been made to augment the staff of the MCDA/OEP Area EOC to provide for 24-hour per day operations. Upon request of the Area director to the Director, MCDA/OEP, local representatives of selected Executive Order 144 agencies will report to the Area EOC. These agencies include the Massachusetts State Police, Massachusetts Department of Public Works, and Massachusetts National Guard. Additionally, the Civil Air Patrol, American Red Cross, and other local agency representatives as are identifed in each Area Plan will provide representatives to the Area EOCs.

The Area director may also request operations support personnel through the Director, MCDA/OEP.

The utility's emergency operations facility will be activated at the Alert class and the media center will be activated at the Alert or Site Area Emergency classification. This is specified in the specific power plant annexes in this plan. These facilities are not operational except during emergencies. Local emergency operating centers are activated at the Site Area Emergency class. Local emergency operating centers may also be activated at the Alert class in accordance with local plans, or on order of the Director, MCDA/OEP. Reception centers will be activated on order of the Director, MCDA/OEP or MCDA/OEP Area director.

A3.3.5 Equipment and Supplies for Emergency Response Facilities

Each emergency response facility is equipped with materials necessary for effective operation. These include status boards and large maps of each emergency planning zone showing sectors, special facilities, and emergency response facilities. Each emergency response facility has the necessary exposure control equipment and communications equipment to support its operation.

Radiological monitoring and laboratory equipment available to support emergency response of the MDPH is described in the Nuclear Incident Advisory Team (NIAT) Handbook. In addition, each agency involved in the emergency response organization is required to maintain an inventory of equipment available to support its emergency response activities.

A3.4 COMMUNICATIONS

Reliable communication among principal organizations is necessary to coordinate emergency response operations.

A3.4.1 Communications Systems

A variety of communications equipment will be used by the State emergency response organization during an emergency. The different communications systems are listed below along with a brief description. Procedures for testing these systems are included in Exhibit A-5.

A3.4.1.1 Nuclear Alert System

A microwave telephone network for use during an emergency has been established at the Yankee (Rowe) and Vermont Yankee Nuclear Power Stations, and at Seabrook Station. This network links the State Police troop headquarters, State emergency operating centers, the power station's control room and emergency operations facility. The system is a self-powered, secure communications link using microwave channels and leased land-lines. The system is also available for interstate coordination and administrative exchange of information.

A3.4.1.2 National Warning System

The National Warning System is a dedicated nationwide early warning system. It is used to broadcast information to each of the 50 states, U.S. territories and possessions, and selected military bases. The National Warning System, which uses land lines as well as microwave channels, is network secure and has backup electrical power.

A3.4.1.3 State Police Radio Network

Massachusetts State Police provides statewide radio and teletype capabilities including station-to-station, station-to-car and car-to-car, and State Police-municipal police interface.

A3.4.1.4 Commercial Telephone

Standard commercial telephone equipment will be used for many of the communications requirements during an emergency. Often, the commercial telephone system is the primary communications link and the radio system serves as a backup.

A3.4.1.5 Radio Amateur Communications Emergency Services (RACES)

A network of volunteer radio operators using privately owned amateur radio equipment provides a statewide and nationwide backup communications network.

A3.4.1.6 Civil Defense National Radio System

A dedicated, nonsecure high-frequency radio network links regional offices of the Federal Emergency Management Agency and each of the states' Civil Defense agencies. The Civil Defense National Radio System provides radio teletype capability between these organizations.

A3.4.1.7 Civil Defense National Voice System

A nationwide, nonsecure telephone network interconnects the states located in Federal Emergency Management Agency Region 1. The Civil Defense National Voice System also provides access to the Federal Telephone System which is used by all federal nonmilitary agencies.

A3.4.1.8 Civil Defense National Teletype System

A secure, protected, dedicated teletype system is used to interconnect all state civil defense agencies and Federal Emergency Management Agency regions.

A3.4.1.9 Massachusetts National Guard Radio

Massachusetts National Guard has mobile capabilities and radio communications capabilities to all armories.

A3.4.1.10 Department of Public Works

The Department of Public Works provides statewide radio communications capability, including mobile.

A3.4.1.11 Division of Law Enforcement

This Division of Law Enforcement (Executive Office of Environmental Affairs) has forest fire and enforcement radio capability, including mobile.

A3.4.1.12 Metropolitan District Commission

The Metropolitan District Commission Police radio network covers 37 cities and towns within Boston's metropolitan district, and several areas outside the district, including the Quabbin Reservoir area.

A3.4.1.13 Massachusetts Aeronautical Commission

The Massachusetts Aeronautical Commission has air, airport, and ground mobile radio capabilities.

A3.4.1.14 Local Dispatch Radio Network

This is a network used by local police departments and local fire departments to communicate with the local dispatch center. This network uses one frequency for police communications and a separate frequency for fire communications.

A3.4.2 Communications Among Emergency Response Facilities

During an emergency, each of the emergency response facilities (State Emergency Operating Center, MCDA/OEP Area Emergency Operating Center, State Police troop headquarters, reception centers, Department of Public Health labs, emergency operations facility, media center, and local dispatch centers must be able to communicate with each other. The communications links among these facilities are shown in Table A3-2. Nuclear Incident Advisory Team (NIAT) Handbook, Appendix B, describes the communications links used by the NIAT teams.

A3.4.3 Communications with Field Personnel

The field units involved in an emergency response will communicate with representatives located in the State and MCDA/OEP Area EOCs and MDPH officials in Boston. Of special importance is communication with the MDPH field monitoring teams. Each of the field teams will be equipped with a mobile radio that will provide communications between the teams and the EOF.

A3.4.4 Communication with Other States

Emergencies occurring at Yankee (Rowe), Vermont Yankee, and Seabrook stations require substantial coordination of the emergency response organizations among New Hampshire, Vermont, and Massachusetts. Massachusetts must

also coordinate ingestion pathway emergency planning zone response functions at Pilgrim with Rhode Island and at Rowe with New York and New Hampshire. In addition, there are mutual aid provisions among all the New England states which require coordination and communication. The New England Interstate Radiation Assistance Plan, NIAT Handbook Appendix I, describes the channels of communication among the states.

The primary link to be used for communications among the civil defense agencies in Massachusetts, New Hampshire, and Vermont is the Nuclear Alert System. The system accommodates direct communication among the three State EOC and EOF locations. The MCDA/OEP also maintains low-band FM radio equipment on the New Hampshire and Vermont civil defense frequencies as a backup. These communication links are staffed by the communications officer in each state.

Rhode Island will be notified of emergency conditions at Pilgrim by MCDA/OEP using the National Warning System as the primary communications system. Support from Connecticut or Maine can also be requested using the National Warning System. Backup to the system is available via commercial telephone and State Police radio connections.

A3.4.5 Communications with Federal Government

The primary communications link with Federal agencies will be though FEMA. A communication link connects the state emergency operating center with the Federal Emergency Management Agency Emergency Information Coordinating Center (EICC) located in Washington, D.C., or the alternate National Headquarters in Olney, Maryland, on a 24-hour basis using the National Warning System with radio teletype and commercial phone lines as backup. This system also connects the State EOC to the Region I offices of the Federal Emergency Management Agency, located in Boston. During duty hours, FEMA Region I is notified directly via telephone or NAWAS. After duty hours, notification is automatically switched to the EICC.

Direct communications between the MDPH and Department of Energy or EPA will be from the State EOC using commercial telephone or the Federal Telephone System.

A3.4.6 Fixed and Mobile Medical Communications

A Statewide Emergency Medical Radio Frequency Plan for Massachusetts was adopted in 1976. In 1984, the plan was reissued as the Massachusetts Emergency Medical Systems Communication Plan. Its purpose is to:

> Furnish statewide radio communications coverage so that any ambulance or hospital can communicate directly with any other ambulance, dispatch point, or hospital in Massachusetts.
>
> Provide capability for statewide disaster response coordination and for the exchange of emergency medical service resource information.

The following Central Medical Emergency Direction (C-MED) Centers have been established, with two additional centers being planned:

Medical Emergency Network	Center Location
Central Massachusetts	Worcester
Boston	Boston
Greater Fall River/ New Bedford	Fall River
Greater Plymouth	Pembroke
Cape and Islands	Hyannis
North Shore	Lynn
Merrimack Valley	Lawrence
Greater Springfield	Springfield

A3.5 PUBLIC ALERTING SYSTEMS

The primary purpose of the public alerting system is to notify the public to tune their radios or televisions to local Emergency Broadcast System stations for further information and instructions. NUREG-0654/FEMA-REP-1 establishes the guidance criteria for promptly alerting the affected population within the plume exposure pathway emergency planning zone:

> Within the plume exposure emergency planning zone, the system shall provide an alerting signal and notification by commercial broadcast e.g., Emergency Broadcast System plus special systems such as National Oceanic and Atmospheric Administration radio. A system which expects the recipient to turn on a radio receiver without being alerted by an acoustic alerting signal or some other manner is not acceptable.
>
> The minimum acceptable design objectives for coverage by the system are:
>
> a. The system must be capable of providing both an alert signal and an informational or instructional message to the population on an area-wide basis throughout the 10-mile emergency planning zone within 15 minutes.
>
> b. The initial notification system will ensure direct coverage of essentially 100 percent of the population within 5 miles of the site.
>
> c. Special arrangements will be made to ensure 100 percent coverage within 45 minutes for the population who may not have received the initial notification within the entire plume exposure emergency planning zone.

The administrative responsibility for activating public alerting systems rests with State government. Local approval for actuating the system is not

required. A state of emergency need not be declared prior to activation of the public alerting system. It is the utility's responsibility to establish the physical means of notifying the public and to demonstrate that such a means is in place.

Public alerting systems consist of several diverse redundant subsystems which, when operated together, provide high reliability and effectiveness as well as benefit to local communities in nonradiological emergency conditions. The subsystems, fixed sirens, tone-activated radios and mobile sirens/public address systems are described below. Each utility has a mixture of some of these subsystems which are described for each nuclear power station's plume emergency planning zone in Exhibits A2 through A5.

A3.5.1 Fixed Sirens

Fixed sirens normally serve as the primary alerting mechanism. Siren systems are comprised of utility-installed sirens sited in conjunction with existing municipal fire and civil defense sirens. Some utility-installed sirens are capable of two or more warning signals plus voice. These are used to alert the public to other types of emergencies and provide specific instructions to the public in a specific area, such as beaches or parks.

A3.5.2 Tone-Activated Radios

Self-activating radios may be used as an additional alerting mechanism at selected institutions and facilities, such as schools and nursing homes. Receivers which are tuned to a National Oceanic and Atmospheric Administration frequency are most common. Tone-activated radios may also be tuned to local Emergency Broadcast System radio stations. In the event of an emergency, the activating signal would be transmitted, followed by an emergency message and instructions.

A3.5.3 Mobile Sirens/Public Address Systems

Mobile sirens and public address systems may also be used to notify the public. In areas served by fixed sirens, these mobile systems provide a redundant alerting mechanism to help assure complete notification. In areas not covered by a fixed siren, this system provides the primary notification method. This method may be used to notify camp grounds and parks, as well as beaches and boaters.

A3.6 DISASTER ASSISTANCE

In responding to a radiological emergency, local governments will mobilize and utilize all resources available to mitigate the emergency. However, it may become necessary to provide additional State, regional, or Federal assistance to supplement State and local operations. Figure A3-3 depicts the provision of resources in support of the local emergency response organization.

A3.6.1 State Assistance

Generally, when local resources are exhausted, inadequate, or unavailable through normal channels to mitigate an emergency, the local civil defense director will request State assistance through the MCDA/OEP Area office in accordance with existing emergency procedures. However, this plan anticipates deficiencies in some resources and arranges for them before an emergency occurs. State support (manpower and/or resources) needed for the implementation of local emergency operations is identified in the MCDA/OEP Area plans.

If additional state resources are required beyond those locally available, the Area director will forward the request to the State EOC. The MCDA/OEP will then work with the appropriate State agency representative at the EOC to obtain the requested resources. When State resources are provided, they will be in support of the requesting community unless dictated otherwise by State law.

If a resource is not available within the Commonwealth, or cannot be provided in a timely manner, the MCDA/OEP will seek assistance through its interstate agreements or through the Federal government. It is important that the MCDA/OEP be kept informed of the equipment requested and received at all levels to prevent duplication.

A3.6.2 Interstate Assistance

Interstate assistance is mandated through three regional compacts signed by the six New England states. The New England Radiological Health Compact, the Interstate Civil Defense Compact, and the New England State Police Assistance Compact provide for mutual assistance among the New England State public health agencies, State civil defense agencies, and State police agencies, respectively. These compacts are summarized in Exhibit A7.

A3.6.3 Federal Assistance

Federal nontechnical assistance to State and local governments will be available through the Federal Emergency Management Agency upon the request of the director of the MCDA/OEP. The Federal Radiological Emergency Response Plan for Peace-time Nuclear Accidents outlines the support available from the Federal government. Federal support needed could be either technical or non-technical. Technical support refers to all aspects of radiological monitoring, evaluation, assessment and reporting, the use of technology to control or predict radiological impacts, and instrumentation to develop recommendations on protective measures and decontamination of property. Non-technical support refers to logistical support. Technical support is under the direction of NRC. DOE is responsible for providing radiological monitoring support to the State and NRC and, along with utility, will provide technical advice. FEMA will coordinate non-technical support. Key Federal agencies which would respond to a radiological emergency include the NRC, the Federal Emergency Management Agency, the Department of Energy, the Department of Agriculture, the Department of Commerce, the Department of Health and Human Services, the Department of Defense, the Department of Transportation, and the Environmental Protection Agency.

A3.6.3.1 Coordination and Logistics

Upon activation of the Federal Plan, FEMA and DOE will dispatch personnel to appropriate emergency response facilities. The State EOC in Framingham is equipped to support FEMA representatives. The licensee EOF will support NRC and MDPH personnel. Coordination with available Federal personnel will be assured through liaison provided by the MDPH Radiation Control Program Director at the utility's EOF for technical assistance, and the Director of the MCDA/OEP at the State EOC in Framingham for nontechnical assistance. FEMA will also operate and staff a Federal Response Center near the EPZ to directly serve the federal response agencies communications and logistics needs in the field. FEMA liaisons at the State EOC will coordinate these activities with those of the State. Air travel and freight shipments will be expected at the major airports in the state.

Expected times of arrival will be dependent on several factors, including locations of Federal personnel and materials. It is generally anticipated that the time of these arrivals will range between 3 to 8 hours.

A3.6.4 Private Assistance

A3.6.4.1 American Red Cross

Using its own staff and established procedures, the American Red Cross will provide food and shelter in centers and facilities designated in advance by MCDA/OEP.

A3.7 EMERGENCY FUNDING

Responding to an emergency at a nuclear power plant requires funds, manpower, and resources by State and local governments and private organizations. The public may also incur expenses in the event that an evacuation is directed by the Governor.

The legal liability for damages resulting from an incident at any nuclear power plant is established at the time of issue of a license to operate. The NRC has the authority to require each licensee to have and maintain financial protection in the form of liability insurance. The amount of liability insurance required is the amount of liability insurance available from private carriers, unless the NRC establishes a lesser amount.

In the event that a nuclear incident should result in damages greater than the amount covered by their private insurance carrier, additional liability will be assumed by the U.S. government under the Price-Anderson Act, Public Law 85-256.

The Price-Anderson Act is an amendment to the Atomic Energy Act of 1954, and provides for indemnification up to 560 million dollars, including reasonable costs of the investigation and settlement of claims. The aggregate liability for a single nuclear incident does not exceed the $560 million together with the amount of financial protection required of the licensee.

Damage claims following a nuclear incident will be handled first by the insurance carrier, and if the damages exceed the amount of coverage, by the United States government up to the $560 million. If damages from a single nuclear incident appear to exceed the total of available resources for public liability, the licensee may apply to the appropriate district court of the United States for orders to enforce the provisions of the Price-Anderson Act. Such enforcement will include an order limiting the liability of the licensee and additional orders designed for equitable distribution of settlement funds as may be required.

A3.8 AGREEMENTS/MEMORANDA OF UNDERSTANDING

Where assistance is expected from organizations other than those which would normally respond to an emergency, agreements or memoranda of understanding have been executed between those organizations and State and local governments. Memoranda of understanding with the State are summarized in Exhibit A7.

TABLE A3-2

COMMUNICATIONS AMONG EMERGENCY

RESPONSE FACILITIES

	NUCLEAR ALERT SYSTEM	MCDA/OEP RADIO	COMMERCIAL TELEPHONE	STATE-TO-LOCAL RADIO	NAWAS	STATE POLICE RADIO LOW BAND	STATE POLICE RADIO PACER HIGH BAND	AMATEUR RADIO	CEMARS	CEMAVS	CEMATS	COMAND & CONTROL
NUCLEAR FACILITY'S CONTROL ROOM	●		●									●
STATE POLICE TROOP HEADQUARTERS	●		●		●[1]	●	●					●
LOCAL DISPATCH CENTERS			●					●				●
STATE EOC	●	●	●	●[2]	●	●		●	●	●	●	●
AREA EOCs	●[2]	●	●	●[2]	●	●	●[3]	●				●[4]
LOCAL EOCs			●	●[2]				●				●
EMERGENCY OPERATIONS FACILITY	●	●	●	●[2]								●
DEPT PUBLIC HEALTH HDQTS, BOS		●	●									
RECEPTION CENTERS			●					●				
NEWS MEDIA CENTERS			●									
NEW HAMPSHIRE STATE EOC	●	●	●		●			●	●	●	●	●
VERMONT STATE EOC	●		●		●			●	●	●	●	
RHODE ISLAND STATE EOC			●		●			●	●	●	●	
FEMA AREA 1 HDQTS, BOSTON			●		●							
FEMA COMMUNICATIONS HDQTS, [illegible]		●	●		●			●	●	●	●	

1 Massachusetts State Police Headquarters (Boston) and Troop B (Northampto

2 MCDA/OEP Areas I & IV (Seabrook, Yankee Rowe, and Vermont Yankee Station:

3 MCDA/OEP Area II (Pilgrim Station)

4. COMAND & CONTROL IS SPECIFIC TO SEABROOK

4/8

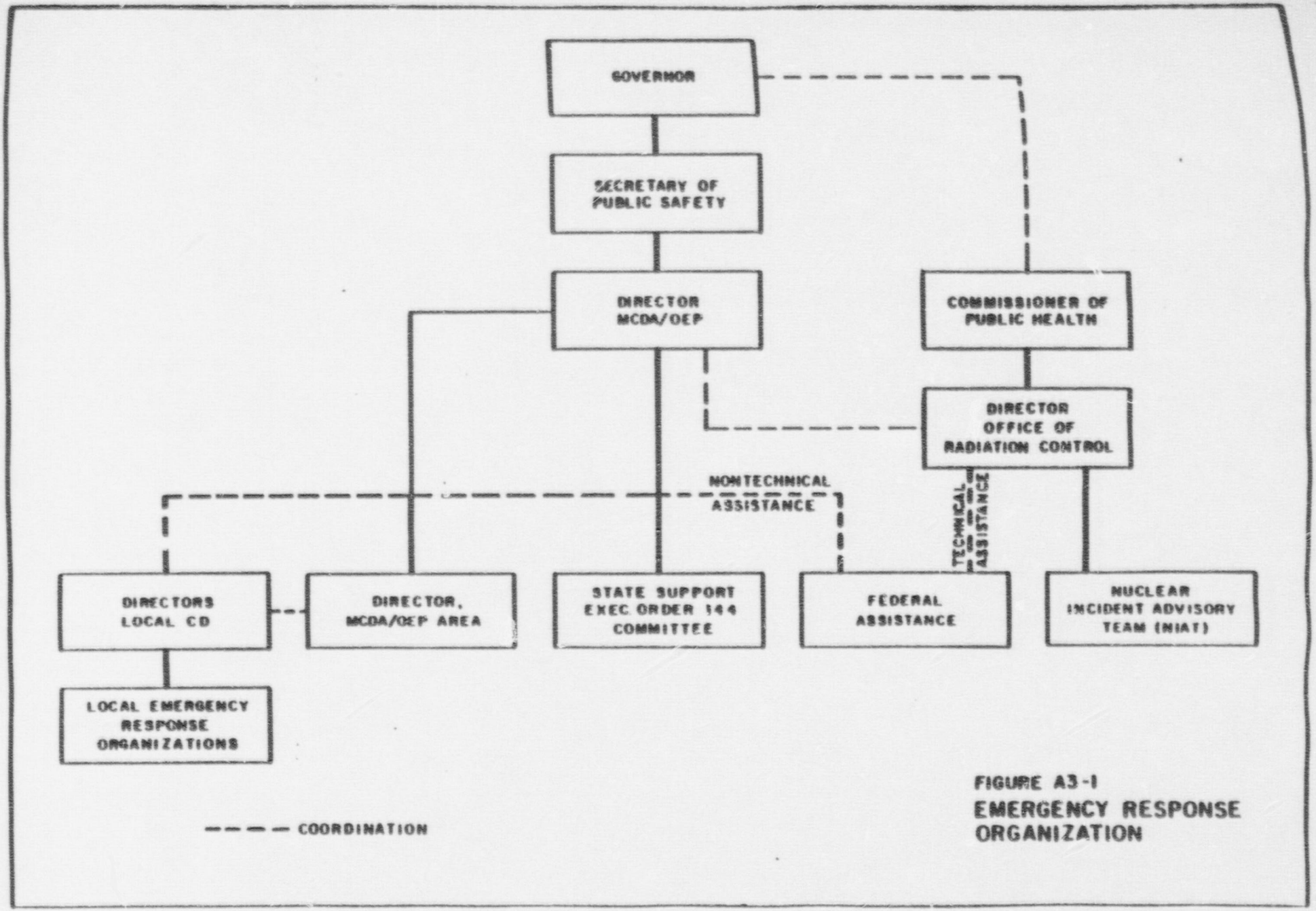


FIGURE A3-1
EMERGENCY RESPONSE ORGANIZATION

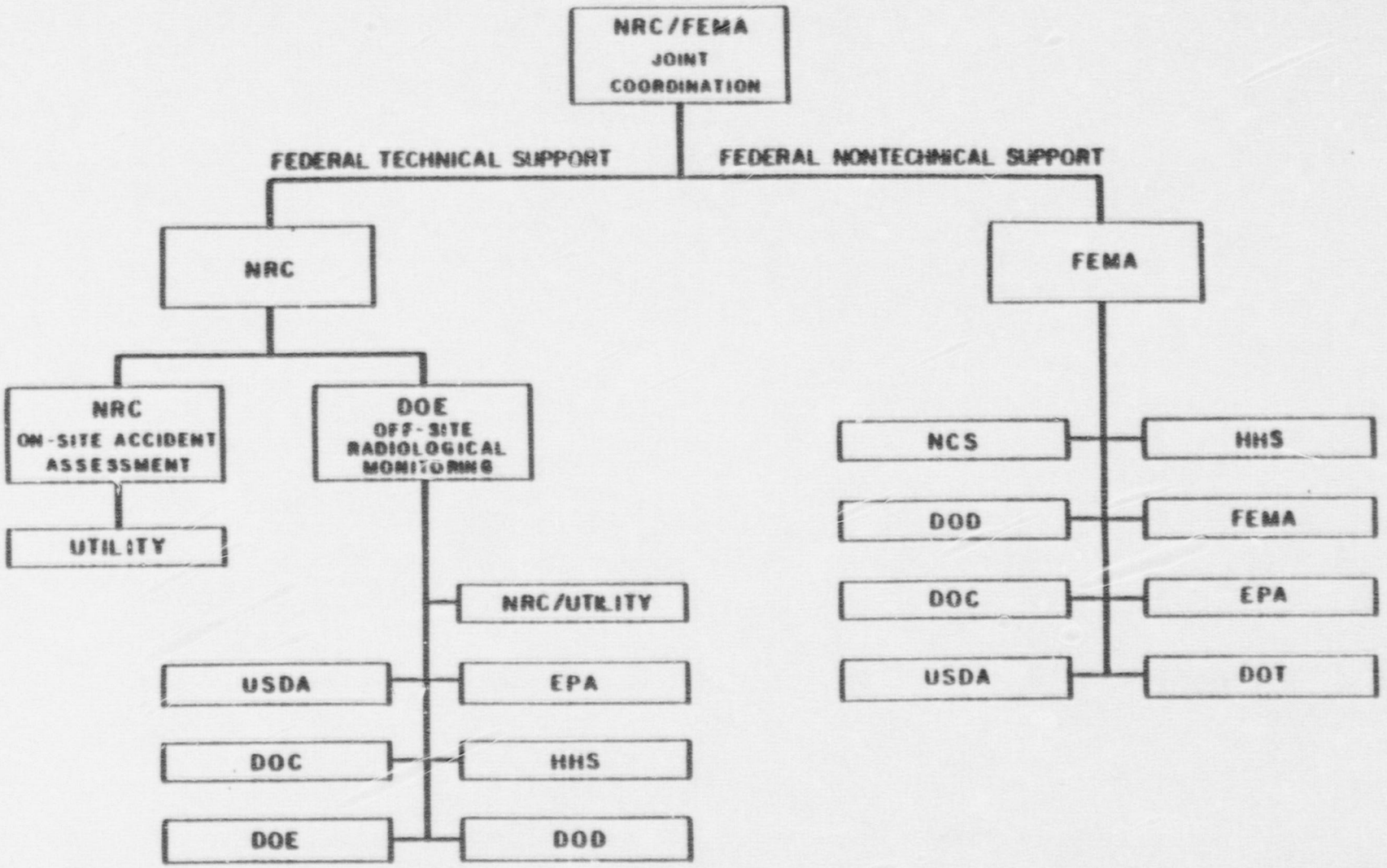


FIGURE A3-2
FEDERAL EMERGENCY
RESPONSE ORGANIZATION

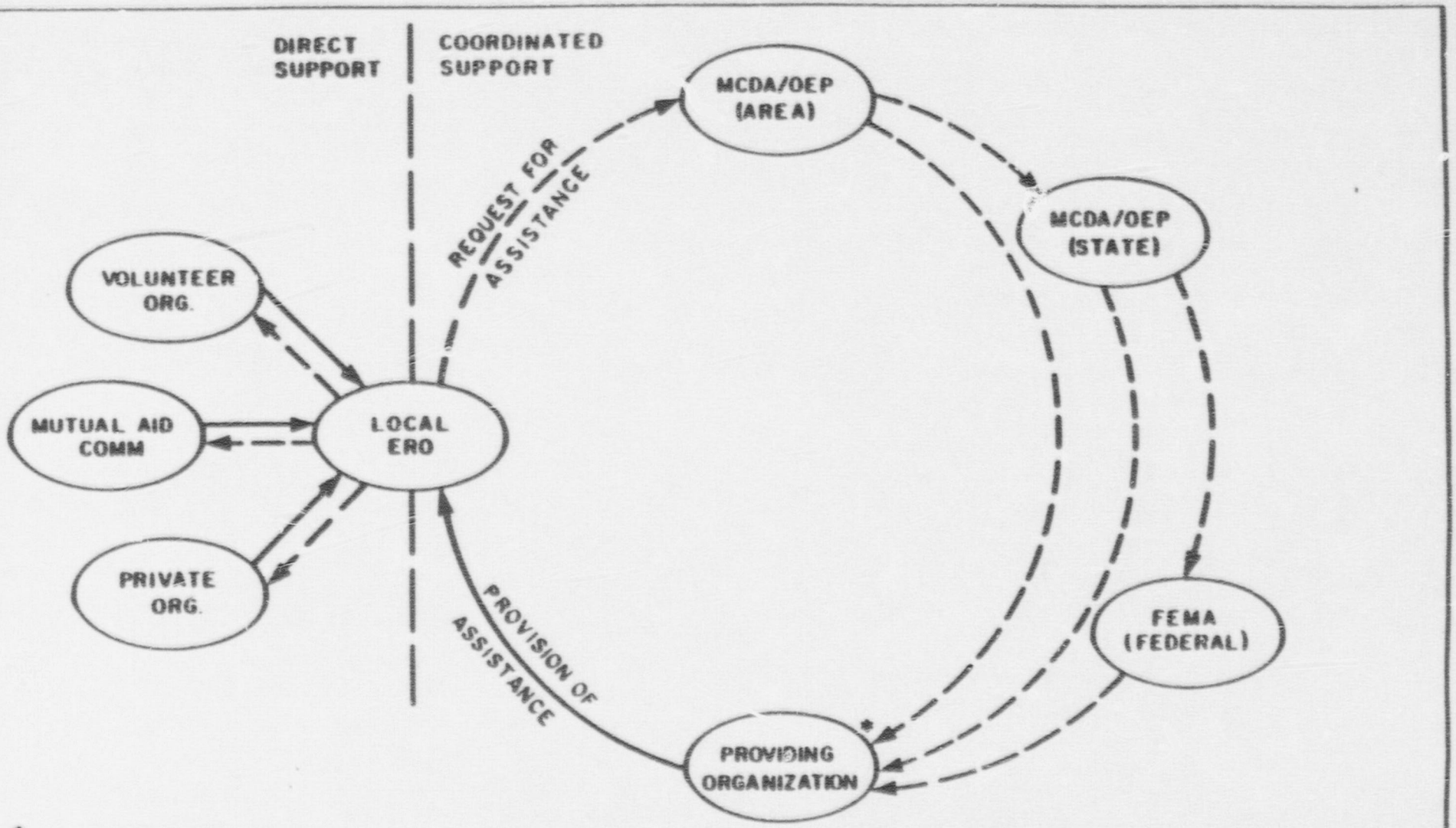


FIGURE A3-3
SUPPORT OF THE LOCAL EMERGENCY RESPONSE ORGANIZATION

SECTION A4
RESPONSIBILITIES

This section identifies the responsibilities of each agency in the emergency response organizations. Responsibilities are summarized in Table A4-1.

A4.1 GENERAL RESPONSIBILITIES

Each agency in the emergency response organization has the following responsibilities:

- Maintaining an adequate emergency response capability by assuring that the agency can be notified and mobilized on a 24-hour basis.
- Assuring that the agency can support the emergency response effort on a 24-hour basis (two 12-hour shifts) for the duration of a protracted emergency period.
- Staffing the State's emergency response facilities as described in Section A3.3 of this plan.
- Keeping the emergency contact telephone directory current by reporting changes in emergency response personnel to the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP).
- Assuring that each member of the agency assigned to participate in emergency response is familiar with agency and individual responsibilities and with agency implementation procedures. Each assigned individual should also be familiar with the Radiological Emergency Response Plan (RERP).
- Assuring that a copy of the current State RERP, including area and local government plans, is accessible to emergency response personnel.

- Participating in emergency response training, drills, and exercises.

- Designating an emergency planning coordinator to participate with MCDA/OEP planners in RERP and procedures development and revisions.

A4.2 LOCAL GOVERNMENT

Responsibilities for local government organizations are identified in the plant-specific local radiological emergency response plans.

A4.3 STATE GOVERNMENT

Three State agencies have primary roles in providing central direction of major emergency response functions: the Governor's office, the MCDA/OEP, and the Massachusetts Department of Public Health (MDPH). They also comprise the team that has the decision-making authority to implement protective actions.

Other State agencies, under the direction of the Governor through MCDA/OEP, provide the support required to respond to an incident at one of the four nuclear power plants potentially affecting Massachusetts.

During a radiological emergency, each agency is expected to function according to its assigned emergency response role. The descriptions that follow briefly present the duties of each agency and are intended to provide a framework for action.

A4.3.1 Governor's Office

The Governor, as chief executive officer, has ultimate command and control authority of all state resources. Following declaration of a state of emergency by the Governor, these authorities are exercised on the Governor's behalf by the Secretary of Public Safety. The Secretary of Public Safety

acts as the State coordinating officer for emergency and disaster assistance. During a radiological emergency, a large part of the command and control authority has been delegated to the Director of the MCDA/OEP. The Governor's office retains responsibility for emergency public information, coordination with other states, and authorization of protective actions.

The Governor's office is responsible for emergency public information and represents the State in briefings for the news media. The Governor's office will receive status reports on a regular basis from MCDA/OEP and will have a representative assigned to the media center.

Coordination among the states involved in a plume exposure pathway emergency response is the Governor's responsibility. Incidents at Vermont Yankee involve coordination among Massachusetts, New Hampshire, and Vermont. Incidents at Yankee (Rowe) involve coordination between Massachusetts and Vermont. An incident at Seabrook Station requires coordination between Massachusetts and New Hampshire. The Governor's office represents Massachusetts for coordinating policy level decisions, such as ordering an evacuation. Periodic contacts with other states will be maintained thoughout the emergency. The Governor also ensures that State actions are consistent with any multistate agreement concerning radiological emergency response or mutual aid. These agreements are listed in Exhibit A7.

The Governor makes the final decision regarding when and where to order any actions necessary for protecting public health from radiological releases. The protective action decision is based upon recommendations by the MDPH and the MCDA/OEP. This includes the decisions regarding re-entry and recovery in affected areas.

A4.3.2 Massachusetts Civil Defense Agency and Office of Emergency Preparedness

The MCDA/OEP is the lead agency responsible for coordinating and directing the emergency response activities outlined in this plan. Specific major responsibilities include:

- Activation of emergency response organization and facilities. The MCDA/OEP must activate the State EOC and ensure that local and area emergency operating centers are activated at the appropriate emergency class. The MCDA/OEP must notify and mobilize State support agencies needed for emergency response. The MCDA/OEP is also responsible for ensuring that a 24-hour per day emergency response capability exists at the State level.

- Coordination of local, State, and Federal response. The MCDA/OEP must coordinate response as the emergency develops, assuring that response personnel at each level know the emergency class and carry out required functions. Acting from the State EOC in Framingham, MCDA/OEP must provide support as requested from local and area emergency response organizations including logistic and manpower assistance. MCDA/OEP coordinates the status of resources available from support agencies. The MCDA/OEP will dispatch a senior representative to the utility's emergency operations facility.

- Recommendation of protective actions. The MCDA/OEP Director, in conjunction with the MDPH Commissioner, will determine protective actions to be recommended to the Governor's office.

- Coordination of public notification. The coordinated notification of the public via the Emergency Broadcast System, public alerting system, and aerial notification in state parks is the responsibility of MCDA/OEP. These actions must be coordinated with other states and with local emergency response organizations

responsible for local door-to-door and special facility notification.

- Coordination of interstate response. When incidents occur at a nuclear power station within 10 miles of the Massachusetts border, close coordination between states is required for plume exposure emergency response. Interstate coordination is also required within 50-mile ingestion exposure pathway emergency planning zones surrounding power stations. MCDA/OEP is responsible for maintaining contact with civil defense agencies in other affected states, and coordinating actions with them.

- Assistance with media support. The MCDA/OEP is responsible for providing the Governor's office and media center with accurate information regarding the status of State and local operations during an emergency.

- Management of recovery and reentry procedures. After the emergency has terminated, the MCDA/OEP will coordinate return to normal operations. If evacuation of an area within the emergency planning zone was ordered, the MCDA/OEP is responsible for managing the orderly reentry and recovery process once the MDPH has determined that the threat to public health is over.

- Emergency response readiness. MCDA/OEP is responsible for assuring that the Massachusetts Emergency Response Organization is prepared to take the actions necessary to protect the public in the event of an accident at a nuclear power station. Specific tasks include developing and maintaining the REPP, conducting annual drills and exercises, training emergency response personnel, and educating the public through public information brochures. The MCDA/OEP must also assure the readiness of all equipment and communications channels.

A4.3.3 Massachusetts Department of Public Health

The Massachusetts Commissioner of Public Health has primary technical responsibility for determining the nature and extent of an incident which may affect the public health. The Commissioner is responsible for determining what protective actions should be recommended to the Governor's office.

This responsibility is carried out with support from the Nuclear Incident Advisory Team and other State and Federal agencies. Specific tasks for which the MDPH is responsible are outlined below:

- Provide MCDA/OEP with continuous assessment of the accident. This task involves sending a MDPH representative to the utility's EOF to serve as the State representative. This representative will review accident information from the facility and make independent assessments based upon source term, meteorological data, and field monitoring data.

- Evaluate hazards and suggest protective actions. Based on accident assessment information, the MDPH must evaluate public health hazards in terms of previously established Environmental Protection Agency (EPA) protective action guides, and, together with the MCDA/OEP, recommend protective actions to the Governor's office.

- Mobilize and coordinate all State radiation monitoring, environmental sampling, and technical accident assessment activities. The MDPH will mobilize and coordinate the State's Nuclear Incident Advisory Team, an interagency team of State personnel and consultants. The MDPH, as part of this responsibility, will provide logistic support for accident monitoring teams.

- Provide for laboratory analysis of air, water, and other environmental samples for radionuclide content.

- Coordinate technical federal radiological emergency support. The MDPH is responsible for determining if and when technical Federal emergency response is required. If so, the MDPH will make appropriate request directly to the Department of Energy's (DOE) Brookhaven National Laboratory in New York. The MDPH will work with Federal representatives at the emergency operations facility and at the State Emergency Operating Center in Framingham.

- Determine criteria for exposure control for emergency workers. The MDPH is responsible for determining when exposure control measures (dosimetry and/or potassium iodide) should be implemented, and for authorizing emergency workers to exceed protective action guides. The MDPH will collect and maintain exposure records of personnel.

- Implement the Exclusion Area Entry Procedure to allow for reentry of designated personnel into evacuated areas.

- Provide monitoring and decontamination guidance for emergency workers.

- Maintain readiness of radiological emergency response team. The MDPH will be responsible for maintaining state agency plans and procedures relating to radiological assessment and protection functions. The MDPH will also maintain the New England Radiological Emergency Compact and Federal agency agreement. The MDPH will provide training to agency and Nuclear Incident Advisory Team personnel and develop the accident section of drill scenarios.

- Once the emergency is terminated, the MDPH is responsible for determining what areas are safe for reentry. Recovery and reentry actions will be based upon MDPH assessment of conditions in the emergency planning zone.

- The MDPH is responsible for establishing appropriate protective actions for the ingestion pathway emergency planning zone, including milk, water, and/or food control.

Nuclear Incident Advisory Team

The action arm of the MDPH for radiation protection is the Nuclear Incident Advisory Team. The purpose of the team is to provide the means of assessing the health effects of a nuclear incident and assisting in the selection of protective actions.

The Nuclear Incident Advisory Team was developed in the early 1960's by the MDPH in cooperation with the Massachusetts Commission on Atomic Energy, Department of Public Safety, Department of Labor and Industries, and the New England Chapter of the Health Physics Society. The team consists of MDPH employees and consulting experts in the various fields associated with radioactive materials. Team members are drawn from the private sector, State and Federal institutions, and industry.

The Nuclear Incident Advisory Team is comprised of 14 principal members and 32 advisors/consultants. The Director of NIAT is the Director of the MDPH Radiation Control Program. The principal members of NIAT are the fourteen staff members of the MDPH Radiation Control Program. The 32 NIAT consultants are non-MDPH staff who are designated to act with the authority of MDPH during an emergency. Agencies cooperating with NIAT are:

Massachusetts Civil Defense Agency and Office of Emergency Preparedness
Massachusetts Department of Environmental Quality Engineering
Massachusetts Department of Food and Agriculture
Massachusetts Department of Labor and Industries
Massachusetts Department of Public Safety
United States Army (Fort Devens)
United States Coast Guard
United States Department of Energy
United States Environmental Protection Agency
United States Food and Drug Administration
United States Nuclear Regulatory Commission*
New England Radiological Health Compact

*While the US NRC is a member organization of the Nuclear Incident Advisory Team, it will not be called upon to provide assistance in responding to an emergency at a nuclear power station.

The New England Radiological Health Compact ensures that there is a reciprocal, mutual radiation assistance program between the six New England states.

The Nuclear Incident Advisory Team Handbook and its appendices identify personnel (team members and cooperating agencies) and the location of field equipment. It gives instructions for accessing a statewide communications system, provides guidelines for responding to an incident, includes protective action guides for a general incident, and contains a separate appendix for each nuclear power station.

The Nuclear Incident Advisory Team Handbook describes how the MDPH and the team will respond to a nuclear power station accident. It describes in sequence, following the notificatinn of an accident, the steps taken to effectively respond to the situation.

A4.3.4 Massachusetts State Police

The Massachusetts State Police has the primary responsibility for providing the quick alerting link between the utility and State agencies and local emergency planning zone governments through the Nuclear Alert System and its communications systems. The State Police provides a 24-hour communications contact for the station operators. In addition, the State Police is the lead State agency for coordinating and providing traffic and access control throughout each emergency planning zone. Other responsibilities include providing mobile communications, helicopter support, and security for critical emergency operating facilities, as requested. Regional assistance can be provided through provisions of the New England State Police Compact. The Secretary of Public Safety has overall responsibility for the activities of the Massachusetts State Police.

In the event key State officials are unavailable for initial accident assessment and/or verification of recommended protective actions, the State Police are authorized and directed to make necessary notification to the EPZ communities for sheltering of the public and to coordinate the activation of

the EBS and the public notification systems. The Troop Commander of the State Police Troop assigned notification responsibilities for a particular power plant is responsible for directing State Police activation of the alert and notification systems.

A4.3.5 Massachusetts Department of Public Works

The Massachusetts Department of Public Works is responsible for providing assistance for traffic and access control. The Department of Public Works will provide road barriers, portable signs, warning lights and other items that may be required to regulate traffic. In addition, the Massachusetts Department of Public Works is responsible for assuring that roads are passable. Local departments of public works will be responsible for working with the Massachusetts Department of Public Works. The Commissioner of Public Works has overall responsibility for the Department's activities.

A4.3.6 Massachusetts National Guard

The Adjuntant General of the Massachusetts National Guard has overall responsibility for directing the Guard's emergency response activities. The Massachusetts National Guard has major support responsibilities in several areas. National Guard resources include, but are not limited to, equipment and personnel for emergency medical transport, evacuation, diesel fuel supply and transport, security and access control, emergency communications and transportation for emergency food and water supplies. These resources are available to the MCDA/OEP upon request.

A4.3.7 Massachusetts Department of Environmental Quality Engineering

The Director of the Water Supply Division of the Department of Environmental Quality Engineering is responsible for the safety of the State's water supply. The Department of Environmental Quality Engineering (DEQE) is responsible for collecting potable water samples within the ingestion exposure emergency planning zones upon the request of the MDPH. The DEQE is responsible for restricting the use of public drinking water supplies found to be contaminated.

A4.3.8 Massachusetts Department of Environmental Management

The Director, Forest and Parks Division of the Department of Environmental Management is responsible for backup search and rescue operations, emergency communications, and notification and evacuation of the public in State parks and other recreational facilities. These responsibilities will be carried out using Department of Environmental Management personnel, vehicles and public address systems at the request of the MCDA/OEP.

A4.3.9 Massachusetts Department of Food and Agriculture

The Commissioner of The Department of Food and Agriculture is responsible for maintaining records identifying the locations of agricultural facilities within 50 miles of a nuclear power station. Data, including the name, address, telephone number, and distance from the nuclear power station(s) have been compiled for all farms, dairy operations, and other agricultural facilities within the state. This data may be required by the MDPH in formulating protective action recommendations for the ingestion pathway emergency planning zones.

If the Governor determines that protective actions must be taken to protect the public from contaminated food, the Department of Food and Agriculture will provide personnel and assistance in implementation of such control. Sampling of raw milk and produce will be under the direction of MDPH.

A4.3.10 Massachusetts Department of Fisheries, Wildlife and Recreational Vehicles, Division of Marine Fisheries

The Director of the Massachusetts Department of Fisheries, Wildlife and Recreational Vehicles, Division of Marine Fisheries, is responsible, under the direction of the MDPH, for shellfish sample collection within the ingestion pathway and delivery of samples to MDPH or DEQE laboratories.

If the Governor determines that protective actions must be taken to protect the public from contaminated aquatic foods, the Department of Fisheries, Wildlife and Recreational Vehicles will provide personnel and assistance in implementation of such control.

A4.3.11 Massachusetts Bay Transportation Authority

The Director of the Massachusetts Bay Transportation Authority (MBTA) may be called upon to provide evacuation assistance for Pilgrim and Seabrook Stations.

A4.4 FEDERAL GOVERNMENT

Federal response to an accident at a commercial nuclear power station is outlined in the Federal Radiological Emergency Response Plan (FRERP), published September 12, 1984 (49FR35896). The FRERP provides for both technical and nontechnical support to be provided by Federal agencies at the request of the State. MCDA/OEP and MDPH are the State agencies providing Federal/State interface. Figure A3-1 shows this interaction.

Technical support includes all aspects of radiological monitoring, evaluation, assessment and reporting; the use of technology to control or predict radiological impacts; and instrumentation to develop recommendations on protective measures and decontamination of property. Federal technical support is under the direction of the Nuclear Regulatory Commission. Nontechnical support refers to logistical support. The Federal Emergency Management Agency will coordinate Federal nontechnical support. See Figure A3-2 for organization of Federal support.

A4.4.1 Federal Emergency Management Agency

The Federal Emergency Management Agency is responsible for activating the Federal Radiological Emergency Response Plan and coordinating Federal nontechnical assistance in support of State and local operations.

The agency will deploy a senior official to the State EOC to provide a single point of contact for assistance requests. The senior official will be informed as to the status of major Federal response efforts. The senior official will, in turn, keep the Federal Emergency Management Agency Region I office apprised of the status of State and local operations.

A4.4.2 United States Coast Guard

The United States Coast Guard will support sheltering and evacuation operations by notifying vessels in and around the affected waterways through a Notice to Mariners over Marine VHF. Coast Guard patrol boats in the area will be used to locate and notify vessels that are not radio-equipped.

The Coast Guard will support access control operations to prevent shipping and boaters from entering affected waters. The Coast Guard will define zones of passage and broadcast information on Marine VHF and notify vessels and local shipping concerns. Citizen's band radio may also be used to complement information broadcasts.

A4.4.3 Federal Radiological Monitoring and Assessment Plan

The Federal Radiological Monitoring and Assessment Plan (FRMAP), is a part of the Master Plan which is administered through the Department of Energy Brookhaven Area Operations, Brookhaven, New York. The Department of Energy responds to requests for radiological assistance from NRC licensees, as well as State agencies. This assistance includes accident assessment tasks, such as monitoring facility environs, providing field measurements of actual dose rates and airborne radioactivity. Upon request, FRMAP is also responsible for conducting air, water, and other monitoring; and for providing laboratory radiochemical analysis, radiation medicine, and decontamination advice. This assistance will be coordinated with the MDPH efforts.

A4.4.4 Federal Aviation Administration

When an accident occurs at a nuclear power station, the MCDA/OEP may request the Federal Aviation Administration (FAA) to impose temporary flight restrictions within the area of the power station and issue a Notice to Airmen.

The FAA will provide air traffic control for the temporarily restricted air space, including recognizing and accepting the priorities of the Commonwealth and providing separation among aircraft as prescribed by FAA regulations.

A4.5 PRIVATE SECTOR

A4.5.1 American Red Cross

The American Red Cross is responsible for providing food and shelter for persons evacuated from an emergency planning zone. The Red Cross will mobilize and coordinate its local volunteers to provide these services at the shelters. Evacuees requiring shelter will be registered at a reception center and assigned to a Red Cross shelter. All services provided by the Red Cross will be in accordance with the Statement of Understanding Between the State of Massachusetts and the American Red Cross. Services provided by the Red Cross will be under the control of the local civil defense director, or designated chief of operations at each shelter. All other private sector organizations will be coordinated by the Red Cross.

TABLE A4-1

RESPONSIBILITY MATRIX

Legend

P - Primary Responsibility

S - Support Responsibility

		COMMAND AND CONTROL	COMMUNICATIONS	NOTIFICATION	PUBLIC ALERTING	PUBLIC INFORMATION	ACCIDENT ASSESSMENT	SHELTER-IN-PLACE	EVACUATION	ACCESS AND TRAFFIC CONTROL	FOOD, WATER AND MILK CONTROL	RADIOLOGICAL EXPOSURE CONTROL	EMERGENCY MEDICAL SERVICES	MASS CARE	LAW ENFORCEMENT	FIRE AND RESCUE	PUBLIC HEALTH AND SANITATION	REENTRY AND RECOVERY
STATE	GOVERNOR	P				P		P	P									P
	CIVIL DEFENSE	S	P	S	P	S	S	S	S	S	S	S	S	S	S	S	S	S
	DEPARTMENT PUBLIC HEALTH			S		S	P	S	S		P	P	P				P	S
	STATE POLICE		S	P	S			S	S	P					P			S
	DEPARTMENT PUBLIC WORKS		S							S								
	MASS. NATIONAL GUARD		S						S	S		S			S			
	DEPT. ENV. QUALITY ENGINEERING						S				S							
	DEPT. ENV. MANAGEMENT				S			S	S									
	DEPT. FOOD AND AGRICULTURE						S				S							
	DEPT. FISH, WILDLIFE & RE. VEHICLES										S							
	NUCLEAR INCIDENT ADVISORY TEAM						S											
	MASS. BAY TRANSPORTATION AUTH.								S									
LOCAL	CHIEF EXECUTIVE	P			P	P		P	P									P
	CIVIL DEFENSE	S	S	S	S	S		S	S	S		P						S
	EMERGENCY RESPONSE ORG.		P	P	S			S	S	P	S	S	P		P	P	S	S
	RECEPTION COMMUNITIES													P			S	
PRIV	AMERICAN RED CROSS													P				
	OPERATING UTILITY		S	P	S	S	S							S				
FED	U.S. COAST GUARD				S					S	S	S	S	S	S	S	S	S

SECTION A5
PLAN IMPLEMENTATION

A preplanned response by State and local governments to each accident class is necessary to ensure the successful implementation of protective actions and supportive actions in a timely manner. The following sections summarize state response to Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency accident classes.

A5.1 NOTIFICATION OF UNUSUAL EVENT

See Section A2.10.1 for a description of the Notification of Unusual Event classification.

Upon declaration of an Unusual Event class accident, the utility will promptly notify state authorities. The following actions will be initiated at the State and/or local levels:

1. The Massachusetts State Police will notify the Massachusetts Department of Public Health (MDPH), the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP), and all plume emergency planning zone (EPZ) communities.

2. Local communities will provide fire, rescue, or security assistance to the power station as requested.

3. A MDPH representative will call the power station's control room and obtain detailed information of the incident.

4. An MCDA/OEP representative will call back to the Massachusetts State Police after 15 minutes to verify that the message was transmitted to each city or town in the EPZ, and to verify that communities have called back to acknowledge receipt of the message.

This emergency status will be maintained until closeout or escalation to a more severe class.

A5.2 ALERT

See Section A2.10.2 for a description of the Alert classification.

Upon declaration of an Alert class accident, the utility will promptly notify State authorities. The following actions will be initiated at the State and/or local levels:

1. The Massachusetts State Police will notify the MDPH, MCDA/OEP, and all plume EPZ communities.

2. A MDPH representative will call the power station's control room and obtain detailed information on the incident.

3. MCDA/OEP will initiate its notification fan-out.

4. An MCDA/OEP representative will call back to the Massachusetts State Police after 15 minutes to verify that the message was transmitted to each city or town in the EPZ, and to verify that communities have called back to acknowledge receipt of the message.

5. The MCDA/OEP Area Emergency Operating Center (EOC) will notify their supporting State agencies.

6. The MDPH will initiate its notification fan-out. Periodic updates will be provided, as appropraite, to each agency.

7. MDPH and MCDA/OEP representatives will be dispatched to the facility's EOF when it is operational.

8. State and Area EOCs will be partially activated.

9. Accident assessment will be initiated and State field monitoring teams may be dispatched to provide confirmatory radiation monitoring if actual releases substantially exceed technical specifications.

10. MCDA/OEP liaison personnel may be dispatched to the appropriate area office.

11. The MOPH may perform plume and ingestion pathway dose projections.

12. A MCDA/OEP representative will be dispatched to the utility's media center when it is operational.

13. The MOPH will continuously assess information from the utility.

14. The MCDA/OEP will keep key State agencies, the Federal Emergency Management Agency, affected states, and MCDA/OEP Area and local EOCs informed of the emergency and actions implemented, as appropriate.

This emergency status will be maintained until closeout, de-escalation of emergency class, or escalation to a more severe class.

A5.3 SITE AREA EMERGENCY

See Section A2.10.3 for a description of the Site Area Emergency classification.

Upon declaration of a Site Area Emergency, the power station will promptly notify state authorities. The following actions will be initiated at the State and/or local levels:

1. All actions required under an Alert classification will be initiated.

2. State, Area, and plume EPZ communities' EOCs will be fully activated.

3. The Alert and Notification System and the Emergency Broadcast System will be used to notify the public of emergency status and to provide periodic information updates.

4. Agencies will notify their State EOC representatives to immediately report to the State EOC.

5. MDPH and MCDA/OEP representatives will be dispatched to the utility's EOF.

6. Accident assessment will be initiated and State field monitoring teams will be dispatched to provide confirmatory radiation monitoring if actual releases substantially exceed technical specifications.

7. Reception community EOCs and reception centers will be partially activated.

8. The State public information program will be implemented. MCDA/OEP representatives will be dispatched to the utilities media center.

9. Protective actions for food, water, and milk may be implemented.

10. Additional protective actions and supported actions may be implemented pending assessment of information from the power station and State field monitoring teams.

11. The MDPH will continuously assess information from the utility and State field monitoring teams.

This emergency status will be maintained until closeout, de-escalation of emergency class, or escalation to General Emergency class.

A5.4 GENERAL EMERGENCY

See Section A2.10.4 for a description of the General Emergency classification.

Upon declaration of a General Emergency, the power station will promptly notify State authorities. The following actions will be initiated at the State and/or local levels:

1. Initiate all actions under Site Area Emergency if not previously performed.

2. Reception community EOCs and reception centers will be activated as required.

This emergency status will be maintained until closeout or de-escalation of emergency class.

SECTION A6
WARNING AND NOTIFICATION

This section describes responsibilities and procedures for rapidly and effectively notifying State and local authorities and the public within 10 miles of the facility of actual or potential emergency situations.

A6.1 BASIS FOR NOTIFICATION

NUREG-0654/FEMA-REP-1 establishes four classes of accidents (see Section A2.10). Upon discovery and declaration of one of the four emergency classes, the power station must notify offsite authorities within 15 minutes.

A6.2 INITIAL NOTIFICATION

Upon declaration of one of the four emergency classes, the utility will notify the designated Massachusetts State Police Troop Headquarters. Troop A Headquarters, located in Framingham, is the primary warning point for Seabrook Station. Troop B Headquarters, Northampton, is the primary warning point for both Vermont Yankee and Yankee (Rowe) Nuclear Power Stations. Troop D Headquarters, Middleborough, is the primary warning point for Pilgrim Nuclear Power Station. (See Exhibits A2 through A5 for site specific information.) State Police Troop Headquarters are staffed on a 24-hour per day basis. Figure A6-1 shows the initial notification sequence.

A6.2.1 Notification of Primary State Officals

The purpose of the initial alerting sequence is to place a knowledgeable Department of Public Health offical in communication with a knowledgeable station official, thereby avoiding misinformation and subsequent confusion.

The Massachusetts State Police Troop Headquarters will notify the Massachusetts Department of Public Health (MDPH) and the Massachusetts Civil Defense

Agency and Office of Emergency Preparedness (MCDA/OEP) for any of the four emergency classes via commercial telephone. Pager and CD radio provide backup notification.

The MDPH official responding to the State Police notification will call the unlisted telephone in the power station's control room to verify the notification and receive information regarding the plant status and meteorological information (Section A6.2.2). Alternate communications from the MDPH to the power station is via telephone or radio to the MCDA/OEP and then via the Nuclear Alert System to the station's control room. For Pilgrim Station, the MDPH can contact the control room directly using MCDA/OEP radio.

A6.2.2 Facility Status Information

During the verification call to the station's emergency director, the MDPH official will obtain the following information from the utility if known and appropriate:

1. Area of plant affected and name and telephone number (or communications channel identification) of caller

2. Date/time of incident

3. Type of release (airborne, waterborne, surface spill), and estimated duration/impact times

4. Estimated quantity of radioactive material released or being released and the height of release

5. Chemical and physical form of release material, including estimates of the relative quantities and concentration of noble gases, iodines, and particulates

6. Meteorological data (wind velocity, direction, temperature, atmospheric stability data, form of precipitation, if any)

7. Projected whole body and thyroid doses at site boundary, 2, 5, and 10 miles

8. Estimate of radioactive contamination if environmental surfaces are involved

9. Emergency response procedures in effect

10. Further emergency actions recommended, including protective measures

11. Injured personnel requiring offsite assistance

12. Verification that control room procedures are being used to mitigate the consequences

A6.2.3 Notification of Local Governments

Local governments will be notified by the State for any of the four emergency classifications.

The Massachusetts State Police will initially notify the local governments in plume EPZ communities. Once the State EOC is activated, notification of local governments becomes the responsibility of the MCDA/OEP.

A6.2.4 Change in Emergency Classification

Escalation, deescalation, or termination of the emergency classification will require prompt notification of all emergency response personnel. Upon reclassification of the emergency, utility emergency personnel will promptly notify the Massachusetts State officials at the EOF and the State EOC. The State EOC officials will notify the affected local communities. Termination of the emergency will follow the same notification procedures as used for changing emergency classification.

NOTE: If State officials are not at the EOF, the utility will notify the Massachusetts State Police.

Refer to Exhibits A2 through A5 for detailed site-specific information regarding notification methods.

A6.3 NOTIFICATION OF EMERGENCY RESPONSE ORGANIZATION

A6.3.1 State Notification

The State emergency response organization will be mobilized if the incident is classified as Alert, Site Area Emergency, or General Emergency. The MCDA/OEP and the MDPH will initiate the alerting support agencies by telephone or other means.

Procedures for MCDA notification and activation are included in Attachment 1 to Exhibit A5. These procedures include all lists for MCDA personnel and first responders from other agencies and support organizations. Procedures for MDPH notification and activation are in the NIAT Handbook. A call list for NIAT responders is included as Appendix A to the handbook.

1. MCDA/OEP will notify the following agencies:

   Secretary of Public Safety, and through the Secretary, the Governor

   MCDA/OEP Area Director

   Department of Public Works, Boston Operations Room

   State Police civil defense liaison

   Contiguous state civil defense liaison

   Department of Environmental Management

Massachusetts National Guard

Massachusetts [illegible]g, Civil Air Patrol

American Red Cross

Federal Emergency Management Agency

Other organizations as necessary

2. The Massachusetts Department of Public Health will notify the following of the situation by telephone, with periodic updates as appropriate to that agency:

Commissioner of Public Health, and through the Commissioner, the Secretary of Human Services and the Governor;

Nuclear Incident Advisory Team members

MCDA/OEP

- Public health departments of other states, as appropriate

3. The Massachusetts Department of Public Health may notify the following additional organizations: Note: Once the State EOC is activated, the MDPH liaison will coordinate these activities with MCDA.

Massachusetts Department of Environmental Quality Engineering

Massachusetts Department of Food and Agriculture

Massachusetts Department of Fisheries

U. S. Department of Energy (Brookhaven)

U. S. Environmental Protection Agency

U. S. Food and Drug Administration

4. The appropriate MCDA/OEP Area EOC will notify support organizations

A6.3.2 Local Notification

Each locality involved in emergency response has developed a plan and procedures to ensure that appropriate actions are taken during an emergency. Each plan outlines the means of notifying the local emergency response organization. Generally, the police or fire department dispatcher will receive the initial notification from the local State Police troop headquarters. The person receiving and confirming the notification must proceed to notify other officials of the local emergency response organization, usually through a beeper system and/or by telephone.

Community-specific notification procedures are described in detail in the local plans.

A6.4 NOTIFICATION OF THE PUBLIC

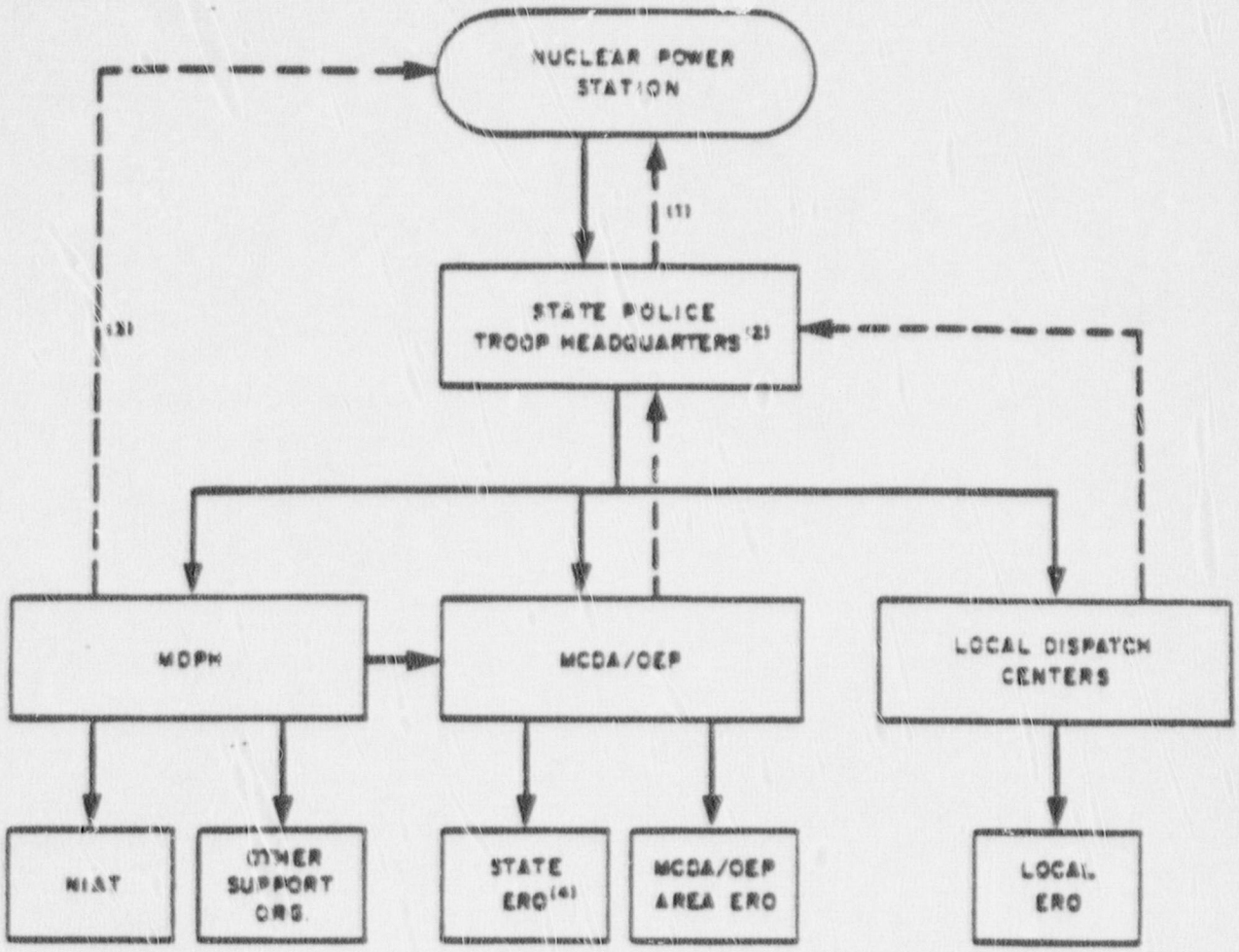
In the event of an emergency classified as Alert or higher, a decision will be made by MCDA/OEP and Department of Public Health to notify the public. Local officials will be notified through the State Police and local dispatch centers. Notification messages will include protective action recommendations and specified times when the State will activate the Emergency Broadcast System and the public alerting system (see Section A12.5). Each local emergency plan outlines the particular method of public notification within the community.

A6.5 DISSEMINATION OF PUBLIC INFORMATION AND INSTRUCTIONS

Emergency information for the public, once the initial alerting has been accomplished, will be conveyed over the Emergency Broadcast System serving

the affected area (see Section A12.5 and the Massachusetts Emergency Broadcast System Operational Plan). The Emergency Broadcast System network is composed of local radio stations serving each emergency planning zone. The Emergency Broadcast System will be activated by the MCDA/OEP or, if necessary, by the State Police. Each local plan carries a listing of the AM and FM radio stations that will provide information in an emergency.

The Emergency Broadcast System will carry protective action recommendations, such as those concerning sheltering-in-place, food control, or instructions for evacuation. Several utilities have installed public alerting systems having public address (voice) capability which may be used to give specific instructions to people located at beaches or parks.



NOTES.

1. VERIFICATION WILL BE MADE IF NOTIFICATION IS RECEIVED BY MEANS OTHER THAN THE NUCLEAR ALERT SYSTEM.
2. PILGRIM - TROOP D
   SEABROOK - TROOP A
   YANKEE ROWE - TROOP B
   VERMONT YANKEE - TROOP B
3. CALL BACK TO STATION FOR VERIFICATION AND REACTOR STATUS/INFORMATION.
4. EMERGENCY RESPONSE ORGANIZATION
5. ALL COMMUNICATIONS LINKS HAVE 24-HOUR PER DAY CAPABILITY

——— INITIAL NOTIFICATION

——— VERIFICATION

FIGURE A6-1
INITIAL NOTIFICATION SEQUENCE

SECTION A7
ACCIDENT ASSESSMENT

This section summarizes the response of the State organization in evaluating the actual or potential consequences of a radiological incident and in determining protective public health and safety actions.

A7.1 RESPONSIBILITIES

A7.1.1 Utility

The nuclear power station operator has responsibility for initial accident assessment. The plant operator is responsible for recognizing that abnormal events have occurred which require declaration of an emergency, classifying the accident in accordance with its emergency action levels, notifying appropriate offsite authorities, providing accident-related parameters, and recommending protective actions for affected offsite areas.

Throughout the emergency, the plant operator will provide accident-related parameters, meteorological parameters, field data, and other information, as necessary, to State assessment personnel on a timely basis so that the State may make an independent evaluation of the accident.

Protective action recommendations issued by the nuclear power station will be based upon comparison of projected doses with the appropriate protective action guides. The State must take into consideration other factors including the time of day, time to beginning of release, projected release duration, time required to evacuate the affected area, and weather conditions in evaluating the station's protective action recommendations.

The utility will provide a work area and communication services in its emergency operations facility (EOF) for State representatives (see Section A3.3.3).

A7.1.2 Massachusetts Department of Public Health

The Massachusetts Department of Public Health (MDPH) has the primary responsibility for assessing an accident from a public health perspective. The MDPH is responsible for determining if protective measures are necessary, either by confirming the dose projections of the utility or by performing an independent assessment based on source term, meteorological and demographic data, and field measurements.

The MDPH is responsible for providing radiological assessment personnel to the utility's EOF, representation at the State Emergency Operating Center (EOC), field monitoring and sampling teams, and laboratory analysis of field samples.

The MDPH will be supplemented by members of the State's Nuclear Incident Advisory Team (NIAT), which is comprised of MDPH personnel and radiological health consultants. The MDPH will coordinate State, Federal, utility, and private industry personnel and resources to maintain radiation monitoring, sampling, laboratory analyses, and accident evaluation capabilities for the duration of the emergency.

The MDPH is also responsible for adopting assessment procedures and protective actions for the State in accordance with guidance provided by State, Federal, and international organizations.

A7.1.3 Massachusetts Civil Defense Agency and Office of Emergency Preparedness

The Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) is responsible for supporting the MDPH assessment operations through provision of communications and logistic support.

The MCDA/OEP will assist the MDPH in determining appropriate protective actions by providing current information with respect to local constraints to implementing a selected protective action. Recommended protective

actions will be communicated to the Governor's Office by the MCDA/OEP and the MDPH liaison at the State EOC.

A7.1.4 Other State Support Organizations

The Massachusetts Department of Environmental Quality Engineering (DEQE) is responsible for collecting potable water samples within the ingestion exposure emergency planning zone as directed by the MDPH.

The Massachusetts Department of Food and Agriculture (MDFA) is responsible for maintaining records identifying Massachusetts agricultural facilities located within 50 miles of a nuclear power station. The MDFA is also responsible for obtaining raw milk and produce samples as directed by the MDPH.

The Massachusetts Department of Fisheries, Wildlife and Recreational Vehicles, Division of Marine Fisheries is responsible for obtaining shellfish, fin fish, and seafood samples, as directed by the MDPH.

A7.1.5 Federal Support

Federal technical assistance in accident assessment will be provided upon request of the MDPH through the Federal Radiological Monitoring and Assessment Plan (FRMAP). The Nuclear Regulatory Commission will assist in determining protective action recommendations at the Utility; the Department of Energy will assist in off-site accident assessment including aerial monitoring; the U.S. Environmental Protection Agency will assist in environmental sampling and analysis; the Food and Drug Administration will assist in food and shellfish sampling and analysis.

A7.1.6 Private Support

The MDPH maintains a list of consultants, nuclear facilities, laboratories, and other organizations and their capabilities that may be called upon to assist in accident assessment operations. These are found in the NIAT Handbook.

A7.2 EMERGENCY FACILITIES

In response to an accident at a nuclear power station, emergency facilities/centers are activated commensurate with the emergency class.

A7.2.1 Department of Public Health Office, Boston

A control post will be established at 150 Tremont Street, Boston. MDPH personnel at this location are responsible for activating the Nuclear Incident Advisory Team and New England Radiological Health Compact personnel and for providing MDPH backup and relief personnel to the State EOC and the utility's EOF. MDPH response will be coordinated with the MCDA/OEP and the utility from this location.

A7.2.2 Emergency Operations Facility

Upon activation by the utility, representatives from the MDPH and MCDA/OEP will be dispatched to the EOF. Their purpose is to determine protective action recommendations based upon information provided by the utility and State field monitoring teams. The protective action recommendation will be communicated to the State EOC.

State field monitoring teams and sampling teams will be coordinated by a MDPH representative at the EOF. The results of laboratory analysis on samples will be communicated to the EOF.

State operations, field and laboratory data, and protective action recommendations will be provided to and coordinated with contiguous states' public health and civil defense personnel at the EOF for those power stations located along the Massachusetts border.

A7.2.3 State Emergency Operating Center

Protective action recommendations received from the State's emergency operation facility representatives will be evaluated by the Commissioner of

Public Health and the Director of the MCDA/OEP or their designees at the State EOC. Upon their agreement, the recommendation will be forwarded to the Secretary of Public Safety and the Governor's office.

The Commissioner of Public Health or designee will also be responsible for coordinating State and Federal agency resources to supplement MDPH accident assessment operations.

A7.2.4 Field Teams

Field teams made up of MDPH staff, Nuclear Incident Advisory Team members, and other support personnel will be dispatched to the nuclear power station area where they will be coordinated by a MDPH representative at the emergency operations facility. Field monitoring teams will take direct radiation measurements to confirm the presence or absence of a radioactive plume. Sample collection teams will determine the areas of possible contamination through collection of environmental samples, such as air, water, milk, produce, seafood, cattle feed, etc.

A7.2.5 Laboratories

Laboratories of the MDPH will be used to analyze environmental samples for radioactivity. The primary laboratory to be utilized is the MDPH Jamaica Plain Lab. Primary backup laboratories include the University of Lowell Radiation Lab and the Yankee labs in Framingham. Additional information on these and additional laboratories which can be called upon for support, and their capabilities is included in the NIAT Handbook.

A7.3 ACTIVATION

Upon notification of an emergency at a nuclear power station which may affect the State, a MDPH official will contact the station's emergency director and obtain detailed information on the status of the emergency.

If conditions warrant, a MDPH representative will be dispatched to the Emergency Operations Facility station at the Alert classification. At the direction of the Radiation Control Program Director, field teams may be dispatched to provide confirmatory radiation monitoring.

Upon notification of a Site Area Emergency or a General Emergency class accident, a MDPH representative automatically will be dispatched to the emergency operations facility and accident assessment will be implemented.

A7.4 PLANT PARAMETERS AND STATUS

The MDPH will establish communications with the station as soon as possible after notification of an emergency to obtain plant parameters and status update. Upon activation of the emergency operations facility this information will be available to the MDPH representative. The following information will be provided to the department by the station operator on a timely basis to the extent known:

Location of incident, and name and telephone number (or communications channel identification) of caller.

Date/time of incident.

Class of emergency.

Type of actual or projected release (airborne, waterborne, surface spill) and estimated duration/impact times.

Estimate of quantity of radioactive material released or being released and the points and height of releases.

Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines, and particulates.

Meteorological conditions at appropriate levels (wind speed, direction, indicator of stability, precipitation, if any).

Actual or projected dose rates at site boundary and projected integrated dose at site boundary.

Projected dose rates and integrated dose at the projected peak and at 2, 5, and 10 miles including sector(s) affected.

Estimate of any surface radioactive contamination in-plant, onsite, or offsite.

Licensee emergency response actions underway.

Recommended emergency actions, including protective measures.

Request for any needed onsite support by offsite organizations.

Prognosis for worsening or termination of event based on plant information.

A7.5 FIELD RADIATION MONITORING

At the direction of the MDPH, field monitoring teams will be dispatched to confirm the presence or to locate a radioactive plume. Details of their operations are provided in the Nuclear Incident Advisory Team (NIAT) Handbook.

A7.5.1 Ground Level Radiation Monitoring

At least two, two-person MDPH and Nuclear Incident Advisory Team field teams will be dispatched to the power station by a MDPH official from the department's headquarters. Once in the area, the teams will obtain emergency monitoring kits from the utility EOF. Contents of the monitoring kits are included in the NIAT Handbook. Teams will depart and establish radio communications with the MDPH field team coordinator located at the EOF.

The field teams will be directed to monitoring locations by the MDPH field team coordinator. For Seabrook Station, grid maps will be utilized by the MDPH Coordinator and the utility to direct teams to appropriate sampling locations based on conditions at the time of the incident. Field teams will be directed to sampling locations using the coordinates from the grid maps. Section/distance overlays for the grid maps will be available for ease of relating dose projections to field measurements.

For plants other than Seabrook Station, field teams will be directed to preselected monitoring points. These preselected monitoring points are the same as those utilized by the Station's field monitoring teams. Maps and location designations are maintained at the EOF.

Teams will utilize the Eberline RO2-A survey meter to measure radiation levels en-route to detect plume edges and centerline. Upon arrival at designated sampling locations, monitoring teams will measure whole body exposure rates within the RO2-A. A DC portable air sampler which can be connected to the car battery will be utilized to take air samples using silver zeolite cartridges and particulate filters. Following sample collection, the HP-210L probe and E-140 Count Rate Meter allow the determination of airborne radioiodine concentrations to less than 10^{-7} uCi/cc.

Field radiation measurements will be transmitted back to the emergency operation facility where they will be shared with utility and contiguous State and Federal dose assessment personnel as appropriate.

A7.5.2 Airborne Radiation Monitoring

The State has the capability to locate and track an airborne radioactive plume. The radiation monitoring equipment used in plume tracking is maintained by the MCDA/OEP at Fort Devens. Aircraft will be provided by the Massachusetts Civil Air Patrol.

If airborne plume tracking is determined to be necessary by the senior MDPH official at the EOF, the MCDA/OEP will be requested to prepare the necessary equipment and arrange its transport to an airport where it will be installed on an aircraft. The Civil Air Patrol will arrange for an aircraft to rendezvous at the selected airport. Arrangements will be made for a Nuclear Incident Advisory Team member to operate the radiation detection equipment. MDPH may also call upon DOE to provide assistance in aerial plume tracking.

Air-to-ground communication is possible only via radio between the aircraft and an airport. A communications link (telephone or radio) will be established between the airport and the emergency operations facility to provide for transmission of the data.

A7.5.3 Overwater Radiation Monitoring

For nuclear power stations located along the coast, it may be necessary to locate or track a plume that is traveling out to sea. This may be accomplished by airborne monitoring, as described above. Additionally, arrangements may be made for water transport of Nuclear Incident Advisory Team field teams on an ad hoc basis. In either situation the radiation data will be transmitted to the emergency operations facility.

A7.6 SAMPLE COLLECTION AND ANALYSIS

In order to determine areas of possible contamination and to estimate more accurately the dose from uncontrolled ingestion of contaminated food, it is necessary to collect and analyze environmental samples.

Field sampling teams will be notified to report to the MDPH headquarters in Boston, where they will be briefed on the situation. Personnel from attending departments will identify specific farms, dairies, water resources, processing centers, and other food sources that are located in the area of concern. The Department of Food and Agriculture maintains lists of dairies, crop farms, and their central collection and distribution centers. The Department of Environmental Quality Engineering (DEQE) maintains lists of water resources within the Commonwealth, and the Division

of Marine Fisheries maintains lists of shellfish and seafood collection and distribution centers. These lists will be kept current by the responsible organization.

Specific assignments for the collection of environmental samples will be made by the senior assessment member of the Nuclear Incident Advisory Team. Specific procedures used in the collection of samples will be provided by the MDPH as outlined in the NIAT Handbook. Water and air samples will be collected by DEQE personnel, seafood samples will be collected by Division of Marine Fisheries personnel, cattle feed, dairy, and crop samples will be collected by Department of Food and Agriculture personnel, and sampling of packaged and/or prepared foods at wholesale and retail markets will be provided by Division of Food and Drugs personnel.

The MDPH will identify laboratories for each environmental sample type. The field teams will be responsible for the transport of samples to the designated laboratory. Additional support for the transport of samples to the laboratories will be made available through the Nuclear Incident Advisory Team. Laboratory analysis will be performed in accordance with procedures and methods provided by or approved by the MDPH. The results of the laboratory analysis will be communicated back to the emergency operations facility where the impact on public health will be evaluated.

A7.7 DOSE PROJECTIONS

The senior MDPH representative at the emergency operations facility is responsible for assessment of the accident, determination of projected doses to offsite areas, and subsequent evaluation of the effects on public health. The MDPH representative may monitor and concur with the dose projections performed by the utility or may perform an independent evaluation.

Necessary information, including source term, release point parameters, meteorology, process system data, and expected release duration will be made available to MDPH. The MDPH is prepared to calculate projected doses using the METPAC computer based dose projection model. METPAC is a series of

computer codes designed to calculate dose rates and graphically display the location and dimensions of the resulting plume. METPAC handles releases from combinations of any of the following three pathways: the primary vent stack, the containment leakage and the steam line valve. The program calculates off-site whole body, infant thyroid and adult thyroid dose rates and can display whole body and thyroid plume locations. Protective action recommendations are also determined.

The hearts of the METPAC program are the dispersion and dose models. The dispersion model is a Gaussian, variable trajectory, plume segment atmospheric transport and diffusion code designed to handle the site-specific atmospheric dispersion characteristics associated with the Seabrook Nuclear Power Station site. Plume trajectories are calculated using data from the Seabrook plant's on-site meteorological tower. The model can track plume location and magnitude as a function of time, given time-varying meteorological data. It can also project plume location, magnitude and travel time as a function of distance from the plant assuming steady-state meteorological conditions. Plume centerline diffusion factors (depleted and finite-cloud gamma) and deposition factors are provided for both continuous and intermittent releases from various release pathways.

The dose model calculates a source term for stack, containment and steamline pathways based on a radiological measurement, a flow rate and a function which correlates the radiological measurement with the concentration in the release pathway for an assumed mixture of radionuclides that form the source term. This source term is applied to an estimate of the dispersion of the radioactive release to determine off-site dose rates. Where measurements of specific radionuclides have been made, these measurements can be used to replace the assumed mixture mentioned above. A detailed description of the METPAC model and its use can be found in the METPAC users manual, a copy of which is maintained at the utlitity EOF and at MDPH in Boston..

Calculated results from the dose projection model will be compared with field team results to ensure consistency. These results will be provided to the utility. Any changes to source terms or other parameters as a result of field team comparisons will be made by the utility. Other states will be

conducting field monitoring and dose projections for their portions of the EPZ. The MDPH may periodically exchange information and review results with accident assessment members of the other states. In addition, data resulting from any DOE monitoring activities including any aerial monitoring (both DOE and MDPH) will be compiled to supplement field monitoring data.

A7.8 PROTECTIVE ACTION RECOMMENDATIONS

Protective action recommendations will be made by the utility and the MDPH.

A7.8.1 Utility Recommendations

The station operator is required to provide protective action recommendations to the State in initial and followup notifications. The utility's recommendations will be based upon comparison of projected doses with the Environmental Protection Agency's protective action guides (see Section A2.5). The State must evaluate the recommended action, comparing the dose savings with the risks of implementing the action. Constraints which may affect the successful implementation of the protective action must also be considered.

A7.8.2 State Recommendations

State protective action recommendations will also be based upon comparison of MDPH projected doses with the Environmental Protection Agency protective action guides. The MDPH representative at the emergency operations facility will discuss the MDPH and utility dose/protective action guide comparisons with the MCDA/OEP EOF representative. Together they will evaluate the protective action recommendation and the time available to implement the action against factors which directly affect the successful implementation of the action. These include release duration, time of day, current and anticipated changes in weather conditions, impediments or constraints to implementing the action (e.g., traffic tie-ups, accidents, poor roadway conditions caused by snow or ice, etc) and evacuation clear-time estimates.

The specific areas for which the protective actions are to be implemented will also be determined at the emergency operations facility. Impact area determination must consider anticipated changes in wind direction.

The protective action recommendations and the areas for their implementation will be communicated to the State EOC. They will be reviewed by the Director of MCDA/OEP and the Commissioner of Public Health. The recommendations will be forwarded to the Secretary of Public Safety and Governor's office.

For power stations located along the state border, protective action recommendations will be coordinated with contiguous states' public health and civil defense officials at the emergency operations facility and the State emergency operating center.

Protective action recommendations will be continually evaluated as new dose projections are made and as updated information concerning the status of the accident is obtained.

A7.9 TERMINATION OF PROTECTIVE ACTIONS

Protective actions may be terminated when the release has ended and dose projections based upon field measurements and laboratory analysis of environmental samples indicate that termination of the actions will not result in any adverse public health risk. At that time, the Commissioner of Public Health will approve initiation of reentry and recovery (see Section A11).

SECTION A8
PROTECTIVE ACTIONS

This section summarizes the State's responsibility to take protective actions in support of local emergency response organizations. For a description of protective actions, see Sections A2.6 and A2.7.

Massachusetts will rely on two protective actions for limiting the direct exposure of the public within the plume exposure emergency planning zone. These are sheltering and evacuation. Either of these protective actions will be coupled with access and traffic control to prevent unauthorized entry into the area and to ensure an orderly flow of traffic out of the area.

Deposition of particulates on the ground, on paved surfaces, and on other surfaces may increase background levels and contaminate soil. The long-term effects of this increase in background levels will be monitored by the Massachusetts Department of Public Health (MDPH) and appropriate actions taken. Recovery actions designed to address these longer-term problems are discussed in Section A11.

A8.1 PROTECTIVE ACTION RECOMMENDATION

The MDPH representative at the emergency operations facility will determine projected doses based upon information provided by the utility, State field monitoring teams, and information from MDPH offices and laboratories. Protective actions will be determined by comparison of the projected doses with the Environmental Protection Agency protective action guides. (See Section 2.8). Protective actions will also take into consideration the

potential for release and other parameters such as drywell radiation level and pressure. The MDPH representative will consult with the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) representative on other factors such as existing constraints, weather conditions, and estimates of evacuation time. Together they will determine recommended protective actions and areas for each action to be implemented.

The protective action recommendations will be communicated to the State Emergency Operating Center (EOC) where they will be reviewed by the Director of the MCDA/OEP and the Commissioner of Public Health. If the Director and Commissioner of Public Health are in agreement, the recommendation will be forwarded to the Secretary of Public Safety and the Governor's Office. If the Director and Public Health Commissioner disagree with the recommendations, they will confer with the emergency operations facility (EOF) representatives to reach agreement.

For power stations located along the State border, protective action recommendations will be coordinated with contiguous states' public health and civil defense officials at the EOF and the State EOCs.

A8.2 SHELTERING

Once the Governor decides to order sheltering, MCDA/OEP will provide instructions to the public via the Emergency Broadcast System, repeated approximately every 15 minutes.

Massachusetts employs a "shelter-in-place" concept. This provides for sheltering where the sheltering instruction is received. Those at home are to shelter at home; those at work or school are to be sheltered in the workplace or school building. Transients without access to suitable shelters will be instructed either to evacuate as quickly as possible in their vehicles (with closed windows and ventilation systems off) or, if possible, to seek shelter in a nearby public building, as directed by local emergency workers.

Individuals at beaches, state parks, and outdoor recreation areas will be asked to get out of open areas and leave the plume emergency planning zone. Protective action recommendations may be made to these populations before a release of radioactive materials occurs, if appropriate.

A8.2.1 State Responsibilities

Massachusetts Civil Defense Agency and Office of Emergency Preparedness

Coordinate notification of the public via public alerting systems.

Coordinate sheltering messages to the public via the Emergency Broadcast System.

Coordinate with contiguous states on above actions as applicable.

Massachusetts State Police

Provide initial and follow-up notification to State Emergency Response Organization until State EOC is activated.

Provide personnel and vehicles for public alerting and access control and provide support for local traffic control and law enforcement.

Activate public alert and notification system in a fast breaking event when appropriate State officials cannot be contacted, authorize the activation of the system.

Massachusetts Department of Public Works

Provide road barriers, portable signs, warning lights, and other items that may be required to assist in traffic control.

Massachusetts Department of Environmental Management

Assist in notification of the public in state parks and other recreational facilities.

Massachusetts National Guard

Provide personnel and equipment to assist in traffic control.

A8.3 EVACUATION

Evacuation, like sheltering, will be implemented on a community-by-community basis. The primary means of transportation for evacuation will be privately owned vehicles of the evacuees. Residents of most dwellings within the plume exposure emergency planning zones have access to private vehicles and there is little dependence on public transportation in any of the four plume exposure emergency planning zones, so the use of private vehicles is a reasonable assumption.

Local emergency response organizations have the capability to provide supplementary transportation resources. Each community has plans for evacuating residents, including the handicapped and those who have special transportation needs. The communities are also prepared to respond to a limited number of ad hoc requests for transportation at the time of the evacuation. Where a need for additional transportation resources has been identified, the State has developed plans which provide for supplemental transportation.

The State has designated evacuation routes to be used in each of the plume exposure emergency planning zones. The evacuation routes for each power station's emergency planning zone are shown in Exhibits A2 through A5.

If an evacuation is initiated during school hours, children who are not released to a parent or guardian will be bused directly to the reception center. The provision of additional buses will be coordinated by the

State. Children will remain under the supervision of either school department personnel or the reception center organization until they are released to a parent or guardian.

A8.3.1 State Responsibilities

Massachusetts Civil Defense Agency and Office of Emergency Preparedness

Coordinate notification of the public via public alerting systems. Coordinate evacuation messages to the public via the Emergency Broadcast System.

Coordinate aerial notification of State parks, if weather permits.

Coordinate with contiguous states on the above actions as applicable.

Massachusetts State Police

Provide initial and follow-up notifications to State response organizations until State EOC is activated.

Provide personnel and vehicles for public alerting and access control and provide support for local traffic control.

Activate public alert and notification system. In a fast breaking situation where State officials cannot be contacted, authorize activation of the system.

Massachusetts Department of Public Works

Provide road barriers, portable signs, warning lights, and other items that may be required to assist in traffic and access control.

Massachusetts National Guard

Provide personnel and equipment including, but not limited to, medical transport, wreckers, tankers for fuel transport, and Military Police personnel.

Massachusetts Department of Environmental Management

Assist in notification of the public in State parks and other recreational facilities.

Massachusetts Bay Transportation Authority

Upon declaration of a State of Emergency by the Governor, the Governor has the authority to order the MBTA to provide buses for transportation of evacuees if needed. The MBTA would be relied upon as a back-up source of vehicles, only after all local and area resources were depleted.

A8.4 ACCESS CONTROL

Access control restricts entry into the plume exposure emergency planning zone by unauthorized individuals. It is a necessary adjunct to either sheltering or evacuation. Access control prevents unknowing persons from entering an area where they may be exposed to radiation. It also helps clear traffic from the roads within the emergency planning zone so they may be better used for evacuation and/or emergency vehicles. Access control also provides security for areas that have been evacuated.

Each area plan contains details of the access control plans, including lists of all key control points, for each nuclear power station in its area.

The implementation of access control creates an area in which access by both transients and residents are restricted. Once an area has been evacuated, all individuals with the exception of emergency workers and designated

individuals will be restricted from reentry. The public will be prohibited from entry into an exclusion area until radiation levels drop below established guidelines (see Section A11.1.1).

Reentry may be allowed for farm owners and/or employees with livestock and associated farm care responsibilities and others approved by the Commissioner of Public Health or designee on a "need versus risk" basis.

All persons permitted entry will be issued an "exclusion area pass" which will be valid for a specific period of time, and only for the specific location where business will be conducted.

A8.3.1 State Responsibilities

Massachusetts Civil Defense Agency and Office of Emergency Preparedness

Coordinate the implementation of access control with State agencies and local governments.

Coordinate areas to be controlled with contiguous states, as necessary.

Coordinate messages to the public with respect to entry into controlled areas.

Massachusetts State Police

Provide personnel and vehicles for access control.

Massachusetts Department of Public Works

Provide road barriers, portable signs, warning lights and other items that may be required to assist in access control.

Massachusetts National Guard

Provide personnel and equipment to assist the Massachusetts State Police in access control and law enforcement.

SECTION A9
RADIOLOGICAL EXPOSURE CONTROL

This section establishes responsibilities and describes the procedures for minimizing the effects from radiological exposure.

A9.1 RESPONSIBILITIES

A9.1.1 Massachusetts Department of Public Health

The Massachusetts Department of Public Health is responsible for the following:

Establishing guidelines and procedures for limiting the exposure of emergency workers and the general public to radiation

Establishing guidelines and procedures for the decontamination of personnel and equipment

Disposing of contaminated waste produced through decontamination operations

During a radiological emergency, the Department of Public Health is responsible for all decisions relating to radiological exposure of emergency personnel. The Commissioner of Public Health is responsible for authorizing the use of potassium iodide by emergency workers. The Commissioner is responsible for authorizing any exposures in excess of the U.S. Environmental Protection Agency's protective action guides established for emergency workers.

A9.1.2 Massachusetts Civil Defense Agency and Office of Emergency Preparedness

The Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) is responsible for providing pre-emergency guidance and training

in radiation exposure control procedures, radiation exposure record maintenance, and radiological decontamination procedures to cities and towns having these responsibilities in local radiological emergency response plans.

The MCDA/OEP is also responsible for the distribution and maintenance of radiation monitoring equipment to State and local organizations. During an emergency, the MCDA/OEP is responsible for coordinating the provision of additional monitoring equipment and dosimetry to meet State and local needs.

A9.1.3 Local Communities

Local communities are responsible for the pre-emergency development and implementation of local plans for controlling radiation exposure, for ensuring an adequate staff of trained radiological officers and monitors, and for maintaining the monitoring equipment placed in their care.

Local communities are responsible for the distribution of dosimetry to local emergency workers and the operation of decontamination facilities in accordance with procedures and policies established by the Department of Public Health.

The specific role of local communities in radiological exposure control is further described in local radiological emergency response plans.

A9.2 PERSONNEL EXPOSURE CONTROL

A9.2.1 Dosimetry

A9.2.1.1 Dosimeters

Self-reading and permanent record dosimeters will be used to measure the whole body gamma exposure of emergency workers.

Self-reading, pocket-type dosimeters provide the wearer with a visual indication of the cumulative dose received for the mission. Civil defense equipment will be used by most emergency workers. The CD V-138 measures exposure from 0 to 200 milliroentgens (mR), the CD V-730 measures from 0 to 20 roentgens (R), and the CD V-742 measures from 0 to 200 R.

Film badges or thermoluminescent dosimeters measure the total exposure that emergency workers receive for the duration of the emergency. These provide a permanent record of the exposure received by an emergency worker.

Emergency workers will be required to wear dosimetry at all times. Dosimetry will be issued in sets of three, a low-range dosimeter (CD V-138), a mid-range dosimeter (CD V-730) and a permanent record dosimeter (thermoluminescent dosimeter or film badge).

A9.2.1.2 Dosimetry Distribution

Department of Public Health emergency workers and Nuclear Incident Advisory Team (NIAT) members have been issued the necessary dosimetry. State emergency workers who support the Department of Public Health's accident assistance operations will be issued dosimetry by the department.

Self-reading dosimeters (CD V-138s and CD V-730s) have been distributed to key Massachusetts State Police barracks and State Department of Public Works district offices. Massachusetts State Police and Department of Public Works emergency workers will be issued dosimeters from these locations. Distribution of thermoluminescent dosimeters is described in the NIAT Handbook for MDPH personnel, and in the Area Plans for other State agencies.

Adequate supplies of self-reading dosimeters have also been distributed to all Massachusetts communities within 10 miles of a nuclear power station. Each community has established a location for issuance of dosimetry for local and support state emergency workers. These locations are identified in the site-specific exhibits and in the local community plans.

A9.2.1.3 Record Keeping

Organizations responsible for issuing dosimetry will keep a log of equipment issued. Upon return from a mission, the dose received will be entered into the log. After termination of the emergency, a copy of the log sheets will be forwarded to the Department of Public Health.

Individual radiation exposure records will be issued to emergency workers. The exposure received from each mission will be entered and the cumulative exposure maintained. This booklet will be kept with the emergency worker for the duration of the emergency.

A9.2.2 Emergency Worker Procedures

Before leaving on a mission, the emergency worker will be briefed on expected exposure levels and recommended exposure times in the area. After receiving the dosimetry, the emergency worker should note the initial readings of the dosimeters. Thereafter, the dosimeters should be checked approximately every 30 minutes.

If a release of radiation has occurred, the emergency worker will be instructed to read the dosimeter approximately every 15 minutes. Upon reaching predetermined exposure levels, the emergency worker will leave the area and contact the local EOC or dosimetry distribution center for further assignment.

A9.3 EXPOSURE LIMITS FOR EMERGENCY WORKERS

Exposure limits for emergency workers have been promulgated by the Environmental Protection Agency and adopted by the Department of Public Health. These protective action guides for emergency workers are discussed in Section A2.5.1 and presented in Table A2-1. Exposure of emergency workers above the lower protective action guide limits established for the general population (1 rem whole body exposure and 5 rem thyroid exposure) must be approved by the Department of Public Health. At a predetermined dose action

level, the emergency worker must leave the area and the Department of Public Health must approve authorization of exposure to the next dose level. When necessary, exposure to the next level can be authorized by MDPH, Radiation Control Branch. In no case will emergency workers be allowed to exceed the protective action guide limits for emergency workers.

A9.3.1 Whole Body Exposure Limits

The following action levels have been established for whole body exposure to noble gases.

The first action level occurs at 1 rem whole body exposure (lower general population limit). At this exposure level, nonessential emergency workers reaching the level will be ordered out of the affected area.

The next action level occurs at the upper general population limit, or 5 rem whole body exposure. At this exposure level all local emergency workers who have reached the limit will be ordered out of the area. Only State emergency workers specifically authorized by the Department of Public Health will be allowed to exceed 5 rem whole body exposure.

Action levels exist at 10, 15, and 20 rem. Emergency workers must receive approval at each level before proceeding to the next level. Authorization to exceed these exposure limits will be given only to those emergency workers performing functions essential to the protection of public health and safety.

At 20 rem whole body exposure, all emergency workers will be ordered to leave the area. This assures that no emergency workers will exceed the Environmental Protection Agency emergency worker protective action guide of 25 rem for whole body exposure. Assignments will be made so that only State emergency workers who have not exceeded the 20 rem limit will be allowed into radiation areas. Decisions to allow emergency workers to incur exposures up to 25 rem whole body will be made by the Department of Public Health in a need-versus-risk basis and will be authorized for only the most

compelling reasons. Authorization to exceed 25 rem whole body, up to a limit of 75 rem, will be considered only for lifesaving missions conducted by volunteers.

A9.3.2 Thyroid Exposure Limits

If the radiological release includes radioiodine, exposure of the thyroid may be the limiting factor for emergency workers.

If the thyroid dose to emergency workers is projected to exceed 25 rem (the upper level thyroid protective action guide for the general public), potassium iodide will be administered to emergency workers who remain in the area (see Section A9.4). This decision will be made early to allow sufficient time for the distribution of potassium iodide and to maximize its effectiveness.

In addition to the use of potassium iodide, respirators and self-contained breathing apparatuses may be used to protect the thyroid from uptake of radioiodine. However, it may not be possible to protect the thyroid before exposure. The Environmental Protective Agency has established an exposure limit of 125 rem for the thyroid except for lifesaving missions. No specific limit is given for the thyroid for lifesaving missions, since the risk of complete thyroid loss may be acceptable if a life is saved.

A9.4 RESPIRATORY PROTECTION

Radiation exposure from inhalation of gaseous or particulate radionuclides may be reduced by the use of respirators and self-contained breathing apparatus. These devices protect the wearer by removing radioiodines (the primary gaseous nuclide of concern) on activiated charcoal and by removing particulate material by filtration. Several types of respirators are commercially available for use by adult male workers in contaminated atmospheres. Because of respirator design, logistical problems, and the cost of providing respirators for the entire population at risk, the use of respirators is not a viable protective action for the general population. It

should be noted that respirators do not protect against direct radiation, only against inhalation of iodines or particulate material. Respirators may be most effective for emergency workers or other persons required to remain in evacuated areas.

This plan accordingly limits consideration of respiratory protection as a protective action to emergency service workers already equipped and trained to use these devices.

A9.5 THYROID PROTECTION

The uptake of inhaled or ingested radioiodine by the thyroid gland can be reduced by the ingestion of stable iodine. The oral administration of potassium iodide will result in accumulation of stable iodine in the thyroid to prevent significant uptake of radioiodine. Potassium iodide as a prophylaxis is only effective if the exposure of concern is from radioiodine and only if the stable iodine is administered before or shortly after the start of intake of radioiodines.

The use of stable iodine as a protective action for emergency workers has been recommended by the EPA, but only in accordance with Massachusetts health laws and under the direction of State or local medical officials. The decision to administer potassium iodide to emergency workers will be made by the State Commissioner of Public Health.

The administration of potassium iodide to the general public will not be considered as an alternate protective action. If the projected thyroid dose warrants, sheltering and evacuation will be the recommended or directed protective actions for the general public. The Department of Public Health has determined that potassium iodide will not be stockpiled by the Commonwealth. If potassium iodide is to be issued to emergency workers, supplies of it will be obtained from the utilities. In case of Seabrook, 500 units of KI are available from NHY to predistribute to Massachusetts

emergency planning zone towns, Massachusetts State Police, Area Headquarters and host communities for placement in town emergency kits. Provisions have been made by each locality, in its local radiological emergency response plan, for authorizing distribution of potassium iodide.

A9.6 EXPOSURE RECORDS

After the emergency has ended, copies of completed dose records will be forwarded to the Department of Public Health. Exposures incurred by emergency workers will be evaluated with respect to the Environmental Protection Agency emergency worker protective action guides.

A9.7 RADIOLOGICAL MONITORING

Emergency workers, equipment used in the emergency response, evacuees and their possessions, and vehicles may become contaminated if there has been a release of radioactive particulates. Radiation monitoring will confirm the presence of contamination.

A9.7.1 Instrumentation

The Department of Public Health maintains monitoring instrumentation for its own use and use by nuclear incident advisory teams and support agency personnel. The MCDA/OEP has distributed monitoring instruments to the Massachusetts State Police barracks and Department of Public Works district offices. Monitoring instrumentation has also been distributed to local emergency planning zone communities and reception/host communities.

The MCDA/OEP issued instrumentation consists of the CD V-700, CD V-715, or CD V-717 survey meters. The CD V-700 survey meter is a Geiger-Mueller type meter which detects gamma radiation with the probe shield closed and both gamma and beta radiation with the shield open. The instrument has a range of 0 to 50 milliroentgens per hour. The CD V-715 survey meter is similar to the CD V-700, but has a range of 100 milliroentgens to 500 roentgens per

hour. The CD V-717 survey meter is a modification of the CD V-715, having a removable ion chamber on a 25 foot cord for remote monitoring.

A9.7.2 Monitoring Locations

A9.7.2.1 Emergency Workers

Locations for the monitoring of local emergency workers are identified in local radiological emergency response plans. Generally, local emergency workers will be monitored at the local EOC or at a decontamination center for emergency workers (see Section A9.8.2).

The Massachusetts State Police and State Department of Public Works have the capability to monitor their own personnel for contamination. However, State emergency workers can be monitored at the same locations as local emergency workers.

A9.7.2.2 General Public

Monitoring of the general public will take place at the decontamination centers established in the reception/host communities. Monitoring will be conducted by members of the host community's emergency organization with guidance from Nuclear Incident Advisory Team members.

A9.7.3 Monitoring Procedures

Procedures for monitoring people for radiological contamination and thyroid uptake and for monitoring equipment for contamination have been developed by the Department of Public Health and are located in the local plans.

A9.8 RADIOLOGICAL DECONTAMINATION

If radiological monitoring confirms the presence of contamination, procedures can be taken to remove it.

A9.8.1 Contamination Levels

Guidelines have been adopted by the Department of Public Health which are used to determine whether or not an individual or equipment must undergo decontamination. Contamination limits for skin and clothing are presented in Table A9-1. Contamination limits for equipment and other materials are presented in Table A9-2. If levels are determined to be above the applicable guideline, the personnel or equipment must be decontaminated before being released. Guidelines for reentry of the general public into contaminated areas will be discussed in Section A11.1.

A9.8.2 Decontamination Facility Locations

Local decontamination facilities for emergency workers and equipment will be established in each emergency planning zone community. Decontamination facilities for emergency workers and the general public will also be established in the reception/host communities. Refer to the local plans for specific locations.

A9.8.3 Decontamination Procedures

Specific procedures for decontamination of personnel, equipment, and materials have been developed by the Department of Public Health and are located in the local plans. These procedures will be used by local emergency workers under the guidance of Nuclear Incident Advisory Team members.

A9.8.4 Waste Disposal

Guidance for the collection and handling of radioactive waste from decontamination will be provided by the Nuclear Incident Advisory Team. Members of this Team will collect solid contaminated material, e.g., clothing, and bring it to the utility for disposal at the end of the emergency.

A9.8.5 Records

Records will be kept of personnel and equipment monitored.

Records of personnel and equipment which cannot be decontaminated below the allowable limits will be forwarded to the Department of Public Health. Contaminated equipment will then be disposed of in accordance with prescribed department procedures. Whole body counting and/or bioassays may be prescribed for those individuals who cannot be decontaminated within prescribed limits.

TABLE A9-1

ALLOWABLE PERSONNEL CONTAMINATION LEVELS

Area	Alpha dpm/ 100 cm^2	Gross Beta-Gamma	Fixed Beta-Gamma(1)
Any part of skin or whole body		0.4 m rad/hr at 1 cm or Average of 0.2 m rad/hr at 1 cm with a maximum of 1.0 m rad/hr at 1 cm	0.3 m rad/hr at 1 cm(2)

NOTES

(1) After decontamination

(2) After at least two skin washings, release conditionally and recheck next day.

SOURCE

Massachusetts State Department of Public Health

TABLE A9-2

ALLOWABLE SURFACE CONTAMINATION LEVELS

Nuclides	Average b,c/ 100 cm^2	Maximum b,d/ 100 cm^2	Removable B,e/ 100 cm^2
U-nat, U-235, U-238 and associated decay products	5,000 dpm alpha	15,000 dpm alpha	1,000 dpm alpha
Transuranics, R-226, Ra-228, Th-228, Th-230, Pa-231, Ac-227, I-125, I-129	100 dpm	300 dpm	20 dpm
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm	3,000 dpm	200 dpm
Bega-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and other noted above	5,000 dpm beta-gamma	15, 000 dpm beta-gamma	1,000 dpm beta-gamma

NOTES

a. Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

b. As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive materials as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

c. Measurements of average contaminant should not be averaged over more than 1 square meter.

d. The maximum contamination level applies to an area of not more than 100 cm^2.

e. The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper applying moderate pressure, and assessing the amount of radioactive material on the paper with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

SOURCE

Termination of Operating Licenses for Nuclear Reactors, Regulatory Guide 1.86, June 1974, U.S. Nuclear Regulatory Commission.

SECTION A10
SUPPORTIVE ACTIONS

This section summarizes the State's responsibilities to support protective actions. This assistance will be in support of local emergency operations.

A10.1 EMERGENCY MEDICAL SERVICES

The objective is to provide adequate emergency medical services to individuals during an emergency. These services include emergency medical transportation and hospital treatment for radiologically contaminated individuals. Each nuclear power station operator has separate agreements with local ambulance services and hospitals for the transport and treatment of utility personnel who have been involved in radiation accidents.

A10.1.1 Ambulance Services

Each ambulance operator and attendant in Massachusetts is required to complete an approved emergency medical course and pass a National Registry examination. Material on the care and handling of radiation accident patients is included as part of the required classroom instruction.

Emergency medical transportation is provided in Massachusetts by local public and/or private ambulance services. Provision for emergency medical transport has been made in each local radiological emergency response plan.

An inventory of ambulance services statewide is on file with Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP). Lists of ambulance services in the vicinity of nuclear power stations are maintained in the MCDA/OEP Area RERPs.

National Guard and military resources can be accessed to supplement these capabilities through provisions of the Massachusetts comprehensive emergency response plan.

A10.1.2 Hospital Treatment Facilities for Radiological Exposure

Individuals exposed to radiation may require medical treatment. The Joint Commission on Accreditation of Hospitals (JCAH) requires that emergency patient care be guided by written policies and procedures. Among the required written procedures is one concerning the emergency management of individuals who have confirmed or suspected exposure to radiation. Care of these individuals may involve radiological monitoring or measurement; special preparation of space for patient evaluation including discontinuation of the normal air circulation system to prevent the spread of contamination; decontamination of the patient through appropriate cleansing; and containment, labeling, and disposal of contaminated material. The hospital official responsible for radiation safety will be notified in advance so preparations can be made.

A list of all licensed hospitals in Massachusetts is on file with MCDA/OEP. Lists of hospitals in the vicinity of nuclear power stations are maintained in the MCDA/OEP Area RERPs. Medical facilities capable of treating radiologically contaminated patients are identified for each nuclear power station in Exhibits A2 through A5.

A10.2 MASS CARE

10.2.1 Reception Centers

In the event of a directed evacuation, primary reception centers will be established beyond the plume emergency planning zone. The reception centers will be activated and run by civil defense personnel from the local community with assistance from MCDA/OEP. The primary reception centers will serve three key purposes:

- Rendezvous for families and individuals separated at the time of evacuation.
- Monitoring for radiological contamination of persons and vehicles.
- Registration for assignment to mass care facilities.

The location and operation of reception centers are described in the Area plans for each nuclear power station. Refer to reception community plans for further information.

10.2.2 Mass Care Facilities

If a portion of the plume EPZ is to remain evacuated for a period of time, shelters will be established for the temporary housing of the evacuees. The operation of shelters is primarily the responsibility of the American Red Cross with support from community civic organizations. Additional State capabilities for providing mass care are described in the Massachusetts CERP, Annex G, Emergency Welfare Services, Annex H, Private Relief Organizations, and Annex I, Temporary Housing.

A10.3 LAW ENFORCEMENT

Law enforcement is expected to be within the capability of local police forces, supported by mutual aid agreements and cooperative arrangements between local and State Police organizations.

Additional requirements generated by access and traffic control or evacuation, or other situations which exceed the capability of local resources will be met by the Massachusetts State Police or the Massachusetts National Guard.

A10.4 FIRE AND RESCUE OPERATIONS

Fire and rescue operations are expected to be within the capability of local fire services, supported by mutual aid agreements and cooperative arrangements between local and State organizations.

Additional requirements or situations which exceed the capability of local resources will be met by the Massachusetts National Guard.

A10.5 PUBLIC HEALTH AND SANITATION

In the event of an emergency, it is necessary to ensure that public health and sanitation standards are maintained for the affected areas as well as at reception centers.

The Massachusetts Department of Public Health has the responsibility for monitoring and controlling disease vectors, communicable diseases, and epidemics. An emergency declaration relative to the above problems will be declared if a signifcant health problem arises. Assistance on the Federal level is available from the Center for Disease Control and the Public Health Service.

Nonradiological monitoring and testing of water supplies, sewage, and waste disposal is the responsibility of local governments. The Massachusetts Department of Environmental Quality Engineering can provide technical and laboratory assistance whenever necessary. Situations involving water supplies, sewage, and waste disposal which may develop into environmental health problems are the responsibility of the Department of Environmental Quality Engineering. Federal assistance from the Environmental Protection Agency is also available.

SECTION A11
REENTRY AND RECOVERY

This section summarizes the various criteria which must be considered before and during reentry to evacuated areas and the state program for recovery of the affected area.

The Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) will keep the public informed of recovery and reentry operations through press releases and briefings with the news media. The MCDA/OEP will also brief state and local emergency organization on reentry and recovery operations before initiation and provide periodic updates.

A11.1 REENTRY

If no release of radiation has taken place, the public will be allowed to reenter evacuated areas upon the approval of the Commissioner of Public Health. Massachusetts Department of Public Health (MDPH) field teams will monitor the affected area to confirm the absence of contamination.

A11.1.1 Dose Limits for Reentry

The MDPH has established dose limits for reentry into potentially contaminated areas (Table A11-1). Based upon field and laboratory data, the MDPH will make dose projections for the affected area. Comparison of the projected doses with these dose limits will determine those areas where reentry may be permitted.

A11.1.2 Reentry Considerations

It may be necessary for certain essential personnel, such as fire, police, etc, to return before radiation levels have decreased to permissible dose limits. In addition, reentry may be allowed earlier for less radiosensitive persons, such as adult males, who may need to return to their homes, farms, or jobs.

Criteria for reentry to contaminated areas will require consideration of remaining radiation risk versus the cost of disrupted services, lost income, etc, resulting from the evacuation. The MDPH and MCDA/OEP will determine those areas where reentry may be permitted and make recommendations to the Governor.

The MDPH will periodically estimate the total population exposure for those groups that have been allowed to reenter contaminated areas. MDPH field monitoring results, in conjunction with results from dispersion calculations, will form the basis for estimating total population exposure. By keeping track of total number of persons allowed to enter each area and the stay times in these areas, total man-rem values can be easily determined. In the event of exposure to a plume prior to evacuation, population data for each community presented in Exhibits 3 through 5 will be utilized in conjunction with field monitoring and dispersion results and times of exposure in order to obtain estimates of total mem-rem. Total population exposure estimates will be compiled at least daily during a GENERAL EMERGENCY and more frequently if exposures approach PAG levels.

A11.1.3 Decontamination

The MDPH recommends appropriate procedures to be used for decontamination, which are found in local and host plans.

A11.2 RECOVERY

If evacuation of an area is continued for an extended period, a program for the social and economic recovery of the area must be implemented. Part Two of the Massachusetts CERP, Recovery Programs, identifies responsibilities and procedures for State and local government in implementing such a program.

Part Two of the CERP identifies the concept of operation and organization and responsibilities for State and local governments in the recovery program. The program provides for the coordinated utilization of available local, State, Federal government and private sector resources.

The MCDA/OEP is responsible for the implementation of the recovery program and will ensure that the public is kept aware of recovery through periodic news releases.

TABLE A11-1

RADIATION PROTECTION GUIDES (RPG) FOR RECOVERY
ABSORBED DOSES TO INDIVIDUALS NOT OCCUPATIONALLY
INVOLVED WITH IONIZING RADIATION

Aspect of the General Environment In and/or From Which An Individual Might be Exposed to Ionizing Radiation	Indicated Portions of the Body of a "Standard Man"			
	External Exposure	Total Dose Resulting From Both External and Internal Exposures		
	Dose Bone Only	Whole Body	Skin of Wh. Body	Hands and
Other		Gonads	Thyroid	Forearms
Organs	To Whole Body	Act. Bi Form Organs Head and Trunk Lens of Eye		Feet and Ankles
Ambient Air Space (external exposure)	0.5 rem/yr.			
Air Breathed and Water Not More and Foodstuffs than Consumed 0.375 rem (internal exposure in 13 wks.	Not More than 0.7 rem in 13 wks.	Not More than 0.125 rem in 13 consec. wks.	Not More than 0.75 rem in 13 consec. wks.	Not More than 1.875 rem in 13 wks.

*Not more than 0.5 rem/yr of the indicated total yearly doses shall result from external exposure.

SOURCE:

Commonwealth of Massachusetts, Section 5B, Chapter 111, General Laws, Rules and Regulations to Control the Radiation Hazards of Radioactive Materials and of Machines which Emit Ionizing Radiation, Department of Public Health

EXHIBIT A12-6

EMERGENCY BROADCAST SYSTEM MESSAGE FOR NUCLEAR POWER STATION INCIDENT EVACUATION

This is (name, title) of the Massachusetts Civil Defense Agency. There has been an accident at the (facility name) located in (town, state). The event has been classified as an (class name).

Personnel from the Massachusetts Department of Public Health are at the plant site to provide continuing investigations of the severity of the accident. Their investigations include assessment of the status of plant safety systems, review of the consequences of existing and potential releases of radioactive material from the plan, review of local weather conditions, and field monitoring of the levels of radiation in nearby towns.

The Department of Public Health staff has briefed the Governor on the status of the plant. Based on this briefing, Governor (name) has ordered that protective actions be implemented for the towns of (town names).

Persons currently in (town names) are advised to EVACUATE.

The Department of Public Health has determined that there is sufficient time to implement an orderly evacuation well in advance of the arrival of any significant levels of radiation. Please make the following preparations before you evacuate:

1. Pack only essential items. Be sure, however, to bring enough seasonal clothing for up to 3 days, any prescription medicines and prescriptions you need, personal items, and infant supplies.

2. Turn off lights and appliances, and secure your home or office as if you were going on vacation.

3. If you have livestock, leave them in best available shelters. Provide feed and water for 3 days.

4. Do not get on the road with a car in poor running condition or too little gas. Instead, try to carpool with a neighbor. If you need help, call your local civil defense office for assistance.

5. DO NOT RUSH. Proceed in a calm, orderly fashion along designated evacuation routes to the reception centers for your area.

The location of reception centers and major evacuation routes are as follows:

(provide town-specific directions to reception centers)

We repeat: A (emergency class) has been declared at the (facility name) located in (town, state). Governor (name) has ordered the implementation of protective actions. Persons in (town name) are to evacuate. Information and further instructions will be updated and provided over this and other Emergency Broadcast System stations regularly.

EXHIBIT A12-7

PUBLIC RELEASE MESSAGE FOR
SEABROOK BEACH AREA POPULATION

ALERT CLASSIFICATION LEVEL

"THERE IS CURRENTLY AN ALERT IN PROGRESS AT THE SEABROOK STATION. THE PURPOSE OF DECLARING AN ALERT IS TO ASSURE THAT EMERGENCY WORKERS ARE AVAILABLE TO RESPOND IF THE SITUATION BECOMES MORE SERIOUS. THERE IS NO PRESENT DANGER TO PUBLIC HEALTH AND SAFETY. THE COMMONWEALTH OF MASSACHUSETTS AFTER CONSULTATION WITH UTILITY PERSONNEL, HAS TAKEN THE FOLLOWING PRECAUTIONARY MEASURE TO PROTECT PUBLIC HEALTH AND SAFETY IN THE EVENT THAT PROTECTIVE ACTIONS FOR THE PUBLIC MAY BECOME NECESSARY. THIS PRECAUTIONARY MEASURE INCLUDES THE CLOSING AND RESTRICTING OF ACCESS TO ALL BEACH AREAS EXTENDING FROM SALISBURY TO PLUM ISLAND. THIS INCLUDES STATE BEACHES AND THE PARKER RIVER WILDLIFE REFUGE. NON-RESIDENTS ARE ADVISED TO REFRAIN FROM TRAVEL TO SALISBURY, NEWBURYPORT, AND BEACH AREAS OF NEWBURY. THERE IS NO DANGER FROM RADIATION, AND THERE IS NO REASON FOR THE PUBLIC TO TAKE ANY ADDITIONAL ACTIONS AT THIS TIME."

NOTE: REPEAT THIS MESSAGE IMMEDIATELY AFTER INITIAL BROADCAST, THEN CONTINUE TO REPEAT EVERY 15 MINUTES UNTIL INSTRUCTED TO STOP.

EXHIBIT A12-7 (Cont'd)

PUBLIC RELEASE MESSAGE FOR
SEABROOK BEACH AREA POPULATION

SITE AREA EMERGENCY - STABLE PLANT CONDITIONS

THIS IS AN IMPORTANT EMERGENCY BULLETIN FOR PERSONS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION. A SITE AREA EMERGENCY HAS BEEN DECLARED AT THE SEABROOK STATION. MASSACHUSETTS CIVIL DEFENSE AND PUBLIC HEALTH PERSONNEL ARE ASSESSING THE SITUATION.

AS A PRECAUTION, THE COMMONWEALTH OF MASSACHUSETTS HAS CLOSED ALL BEACH AREAS EXTENDING FROM SALISBURY TO PLUM ISLAND. THIS INCLUDES STATE BEACHES AND THE PARKER RIVER WILDLIFE REFUGE.

NON-RESIDENTS OF SALISBURY, NEWBURYPORT, AND NEWBURY ARE ADVISED TO REFRAIN FROM TRAVEL TO THESE AREAS. ONLY FULL-TIME RESIDENTS AND THOSE PROVIDING TRANSPORTATION FOR BEACH AREA VISITORS WILL BE ALLOWED ACCESS TO THE BEACHES.

THERE IS NO DANGER AT THIS TIME FROM RADIATION AND THERE IS NO REASON FOR THE RESIDENT POPULATION OF THESE AREAS TO TAKE ANY FURTHER ACTIONS AT THIS TIME.

PLEASE STAY TUNED TO THIS STATION FOR FURTHER INFORMATION AND INSTRUCTIONS.

NOTE: REPEAT THIS MESSAGE IMMEDIATELY AFTER INITIAL BROADCAST, THEN CONTINUE TO REPEAT EVERY 15 MINUTES UNTIL INSTRUCTED TO STOP.

EXHIBIT A12-7 (Cont'd)

PUBLIC RELEASE MESSAGE FOR
SEABROOK BEACH AREA POPULATION

SITE AREA EMERGENCY - DEGRADING PLANT CONDITIONS

THIS IS AN IMPORTANT EMERGENCY BULLETIN FOR PERSONS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION. A SITE AREA EMERGENCY HAS BEEN DECLARED AT THE SEABROOK STATION. THIS INDICATES AN ACTUAL OR POTENTIAL FAILURE OF SOME PLANT SAFETY SYSTEMS.

MASSACHUSETTS CIVIL DEFENSE AND PUBLIC HEALTH PERSONNEL ARE ASSESSING THE SITUATION. THE GOVERNOR OF MASSACHUSETTS HAS DECLARED A STATE OF EMERGENCY AND ALL BEACHES AND PARKS EXTENDING ALONG THE COAST FROM SALISBURY TO PLUM ISLAND HAVE BEEN CLOSED.

ALL NON-RESIDENTS OF SALISBURY, NEWBURYPORT, AND NEWBURY, INCLUDING THOSE WITH HOTEL ACCOMMODATIONS, ARE ADVISED TO LEAVE THE AREA, OR REFRAIN FROM TRAVELING TO THESE AREAS. ACCESS TO SALISBURY, NEWBURYPORT, AND NEWBURY WILL BE RESTRICTED TO FULL TIME RESIDENTS.

AT THIS TIME, THERE IS NO DANGER TO THE PUBLIC FROM RADIATION. PLEASE STAY TUNED TO THIS STATION FOR FURTHER INFORMATION AND INSTRUCTIONS.

NOTE: REPEAT THIS MESSAGE IMMEDIATELY AFTER INITIAL BROADCAST, THEN CONTINUE TO REPEAT EVERY 15 MINUTES UNTIL INSTRUCTED TO STOP.

EXHIBIT A12-7 (Cont'd)

PUBLIC RELEASE MESSAGE FOR
SEABROOK BEACH AREA POPULATION

GENERAL EMERGENCY

THIS IS AN IMPORTANT EMERGENCY BULLETIN FOR PERSONS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION.

A GENERAL EMERGENCY IS IN EFFECT AT THE SEABROOK STATION. THIS MEANS THAT PLANT CONDITIONS ARE AFFECTING THE LEVEL OF SAFETY OF THE PLANT AND COULD AFFECT THE LEVEL OF SAFETY OUTSIDE OF THE PLANT.

STATE OF MASSACHUSETTS CIVIL DEFENSE AND PUBLIC HEALTH PERSONNEL ARE ASSESSING THE SITUATION.

THE GOVERNOR OF MASSACHUSETTS HAS DECLARED A STATE OF EMERGENCY, AND RECOMMENDS THE FOLLOWING PROTECTIVE ACTIONS TO THE PUBLIC:

(1) ALL PERSONS WORKING AND VISITING ALONG BEACHES AREAS IN THE TOWNS OF SALISBURY, NEWBURYPORT, AND NEWBURY ARE ADVISED TO LEAVE THE AREA. BEACHES IN THESE AREAS HAVE BEEN CLOSED AS A PRECAUTION, AND ALL NON-RESIDENTS ARE BEING DENIED ACCESS TO THESE AREAS.

FOR ALL PERSONS FROM SALISBURY, OR OTHER AFFECTED BEACH AREAS IN MASSACHUSETTS, WHO REQUIRE ASSISTANCE OR TEMPORARY SHELTER, A RECEPTION CENTER HAS BEEN OPENED AT THE FOLLOWING LOCATION:

_____

_____

_____

PLEASE STAY TUNED TO THIS STATION FOR FURTHER INFORMATION AND INSTRUCTIONS.

NOTE: REPEAT THIS MESSAGE IMMEDIATELY AFTER INITIAL BROADCAST, THEN CONTINUE TO REPEAT EVERY 15 MINUTES UNTIL INSTRUCTED TO STOP.

EXHIBIT A12-8

STATE POLICE TROOP A FAST-BREAKING PUBLIC ALERT
AND NOTIFICATION SYSTEM ACTIVATION MESSAGE

SHELTERING

THIS IS AN EMERGENCY BULLETIN FOR MASSACHUSETTS RESIDENTS AND VISITORS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION. A (SITE AREA EMERGENCY OR GENERAL EMERGENCY) (AS DIRECTED BY SEABROOK) HAS BEEN DECLARED AT THE SEABROOK STATION. THIS MESSAGE AFFECTS RESIDENTS AND VISITORS IN THE COMMUNITIES OF SALISBURY, AMESBURY, MERRIMAC, NEWBURY, WEST NEWBURY, AND NEWBURYPORT. (REPEAT THIS SENTENCE).

AS A PRECAUTION, THE MASSACHUSETTS CIVIL DEFENSE AGENCY ADVISES ALL RESIDENTS AND VISITORS TO REMAIN INDOORS IN SHELTER, CLOSING ALL WINDOWS AND SHUTTING DOWN ANY HEATING OR AIR CONDITIONING SYSTEM. VISITORS USING AREAS NOT PROVIDING MUCH SHELTERING CAPABILITY, SUCH AS BEACHES AND PARKS, ARE URGED TO LEAVE THE AREA IN THEIR AUTOMOBILES, OR SEEK SHELTER.

STAY TUNED TO THIS STATION FOR FURTHER INFORMATION AND INSTRUCTIONS.

EXHIBIT A12-8 (Cont'd)

STATE POLICE TROOP A FAST-BREAKING PUBLIC ALERT
AND NOTIFICATION SYSTEM ACTIVATION MESSAGE

EVACUATION

THIS IS AN EMERGENCY BULLETIN FOR MASSACHUSETTS RESIDENTS AND VISITORS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION. A GENERAL EMERGENCY HAS BEEN DECLARED AT THE SEABROOK STATION. PLANT SAFETY SYSTEMS ARE DEGRADING TO THE POINT THAT THEIR FAILURE COULD PRESENT A DANGER TO THE HEALTH AND SAFETY OF MASSACHUSETTS RESIDENTS AND VISITORS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION.

THIS MESSAGE AFFECTS RESIDENTS AND VISITORS IN THE COMMUNITIES OF (SALISBURY, AMESBURY, MERRIMAC, NEWBURY, WEST NEWBURY, NEWBURYPORT) (AS DIRECTED BY SEABROOK). (REPEAT THIS LAST SENTENCE).

RESIDENTS AND VISITORS OF (AS DIRECTED BY SEABROOK) _____ ARE URGED TO LEAVE THE AREA. FOR ALL PERSONS REQUIRING ASSISTANCE OR TEMPORARY SHELTER AFTER LEAVING THE AREA, A RECEPTION CENTER(S) HAS BEEN OPENED AT THE FOLLOWING LOCATION(S) _____. PLEASE REFER TO YOUR PUBLIC INFORMATION BROCHURE FOR EVACUATION ROUTES AND DIRECTIONS TO RECEPTION CENTERS.

RESIDENTS AND VISITORS IN THE COMMUNITIES OF (AS DIRECTED BY SEABROOK) _____ ARE URGED TO REMAIN INDOORS IN SHELTER, CLOSING ALL WINDOWS AND SHUTTING OFF ANY HEATING AND AIR CONDITIONING SYSTEMS.

STAY TUNED TO THIS STATION FOR FURTHER INFORMATION AND INSTRUCTIONS.

SECTION A12

EMERGENCY PUBLIC INFORMATION

During a nuclear power station accident which constitutes a public health hazard or has the potential for creating a public health hazard, it is imperative that the public be kept informed of the situation. Consistent, controlled public announcements are essential for public confidence.

The following section summarizes State, local, and utility public information responsibilities in the event of radiological emergency.

A12.1 MEDIA CENTER

Each utility has established a media center. The media center, upon its activation, will contain facilities for utility representatives to meet with State and Federal representatives for the purpose of coordinating emergency announcements to the news media. Telecommunication equipment for use by the news media will also be provided. Media centers for each power plant are discussed in more detail in Exhibits A2 through A5.

A12.2 PUBLIC INFORMATION RESPONSIBILITIES

Each level of government (Federal and State), as well as the utility, is responsible for the collection, analysis, and dissemination of information with respect to emergency operations within its sphere of responsibility.

A12.2.1 Utility Responsibilities

In addition to the establishment of a media center, the utility is responsible for providing information pertaining to onsite matters. The utility will provide briefings for State public information representatives. Utility updates will be provided whenever there is a change in the situation which either requires further response or cancels the alert. If there is no change, updates will be provided at appropriate intervals.

A12.2.2 Local Government Responsibilities

Local government responsibilities for public information are described in local radiological emergency response plans. Generally, if the local government does not have a designated public information officer, all emergency public information will be released through the head of the local government.

A12.2.3 State Responsibilities

The Governor's Press Secretary is responsible for the release of information on behalf of the Commonwealth. Following activation of the State emergency operating center, the Governor's office may authorize the release of emergency information by the Secretary of Public Safety, the Director of the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP), or their designees.

Upon notification of a Site Area Emergency or General Emergency, the MCDA/OEP will dispatch representatives to the utility's news media center. If the utility activates its media center at the Alert classification level, then a MCDA/OEP representative will be dispatched. The MCDA/OEP representatives will work with the utility's spokesperson in the development and release of announcements to the news media. Such announcements will be approved by the Secretary of Public Safety and the Director of the MCDA/OEP at the State EOC or their designees prior to release. In situations involving two or more states, the MCDA/OEP representative will coordinate with the other state(s)' representatives in the development and release of news announcements.

A12.2.4 Federal Responsibilities

Federal agencies will release public information through their own spokespersons at the utility's media center in coordination with State and utility representatives.

A12.3 NEWS MEDIA BRIEFINGS

Briefings of the news media will be jointly conducted by utility, State and Federal representatives at the utility's media center. Briefings will be conducted on a scheduled basis, or as pertinent information becomes available. News releases proposed by the designated spokespersons for each entity will be reviewed with all other public information representatives at the media center before it is issued. This will provide for issuing joint statements in most instances. Where there are differences in positions screening of briefings before release will provide for clarifications or counterpoints by non-concurring media representatives.

A12.4 RUMOR CONTROL

The State's rumor control program will be coordinated with the program to be established by the utility at its media center. Rumor control will also be coordinated with neighboring state civil defense organizations through the utility rumor control telephone number.

The MCDA/OEP has established a statewide toll-free telephone number which is referenced in the emergency public information materials. Each utility also has its own rumor control number. These numbers will also be publicized in all public notifications. The rumor control systems will be activated during an emergency at the Site Area classification.

A12.5 EMERGENCY BROADCAST SYSTEM

Widespread and rapid dissemination of initial warnings and instructions for taking protective actions requires activation of the Emergency Broadcast System (EBS). The MCDA/OEP will utilize EBS to alert and to advise the public of protective actions recommended by MDPH. In the event that key state officials are unavailable in a severe, fast-moving situation, the State Police are authorized and directed to coordinate the activation of the EBS. Area and local plans carry a listing of AM and FM radio stations for

this information. Sample messages appear as Exhibits A12-1 through A12-8 in this Section. A description of methods and procedures used by the broadcast industry, the state and local governments for issuing emergency information over EBS is presented in the Massachusetts Emergency Broadcast System Operational Plan. This plan is referenced in Exhibit A-6.

EXHIBIT A12-1

EMERGENCY BROADCAST SYSTEM MESSAGE FOR A NUCLEAR POWER STATION INCIDENT

UNUSUAL EVENT

This is (name, title) of the Massachusetts Civil Defense Agency. There has been an incident at the (facility name) located in (town, state) at (time). This incident has been classified as an UNUSUAL EVENT. An UNUSUAL EVENT presents no threat to public health or safety. Massachusetts officials are in constant contact with the power plant. Stay tuned to this radio station for further information.

I repeat: an UNUSUAL EVENT has been declared at the (facility name). There is no threat to public health or safety at this time. Massachusetts officials are monitoring the situation. Details will be provided in the next regularly scheduled news broadcast.

EXHIBIT A12-2

EMERGENCY BROADCAST SYSTEM MESSAGE FOR A NUCLEAR POWER STATION INCIDENT

ALERT

This is (name, title) of the Massachusetts Civil Defense Agency. There has been an incident at the (facility name) located in (town, state) at (time). This incident has been classified as an ALERT. An ALERT presents no threat to public health or safety. Any release of radioactive material will be well below State and Federal guidelines. No action is required by the general public at this time.

The purpose of declaring an ALERT is to assure that emergency workers are available to respond if the situation becomes more serious. Massachusetts public health officials are in contact with utility officials at this time. The State emergency operating center in Framingham is manned and local officials have been placed on standby.

The public alerting system for the (facility name) which includes sirens, tone alert radios and emergency broadcast station announcements will be activated if there is any deterioration of plant safety.

I repeat: an ALERT has been declared at (facility name). The events in progress present no threat to public health or safety. You do not need to take any protective or precautionary measures. A full report on the incident will be provided in regularly scheduled news broadcasts shortly.

EXHIBIT A12-3

EMERGENCY BROADCAST SYSTEM MESSAGE FOR A NUCLEAR POWER STATION INCIDENT

SITE AREA EMERGENCY

This is (name, title) of the Massachusetts Civil Defense Agency. There has been an incident at the (facility name) located in (town, state). This incident has been classified as a SITE AREA EMERGENCY. A SITE AREA EMERGENCY is declared to indicate actual or potential failure of some plant safety systems. Any radioactive releases from the plant, however, are not expected to present a health or safety hazard beyond the plant site boundary.

Massachusetts public health officials are now at the plant to assess the severity of the accident. Their investigations will include field monitoring of levels of radioactivity in nearby towns. State and local emergency workers are also being assembled to implement any necessary emergency response activities. Residents of: (Massachusetts emergency planning zone towns) are advised to stay tuned to the Emergency Broadcast System broadcasts for instructions.

While there appears to be no current health hazard associated with this SITE AREA EMERGENCY, staying indoors is a precautionary measure that will shelter you from any short-term radioactive releases.

Public officials have instructions for protecting the children or other persons in their care. Please refrain from all unnecessary use of communications systems. Unnecessary communications will impede emergency workers from undertaking their assignments. Unnecessary telephone calls may tie up circuits needed by others for emergencies.

We repeat: A SITE AREA EMERGENCY has been declared at the (facility name). Residents of (Massachusetts emergency planning zone towns) are advised to stay tuned to their Emergency Broadcast System station for instructions. This advisory will be repeated frequently until more details on the incident are available. Further instructions will be provided over this station shortly.

EXHIBIT A12-4

EMERGENCY BROADCAST SYSTEM MESSAGE FOR A NUCLEAR POWER STATION INCIDENT

GENERAL EMERGENCY

This is Governor (name). There has been an accident at the (facility name) in (town, state). The accident has been classified as a GENERAL EMERGENCY. Events are in progress which involve actual or probable releases of radioactive materials from the plant. Massachusetts officials are in constant communication with the staff of the power plant. The severity of the accident is being continuously investigated by Federal, State, and utility personnel. The ongoing investigations include assessment of the status of plant safety systems and field monitoring of levels of radioactivity in nearby towns. State and local emergency workers are ready to implement any necessary emergency response activities. Massachusetts public health officials are currently reviewing the consequences of any potential release of radioactive materials, local weather conditions and other factors. With this information, they will prepare appropriate instructions for your protection. These instructions will be provided shortly on this and other Emergency Broadcast System stations.

This is (name, title) of the Massachusetts Civil Defense Agency. Residents of (Massachusetts emergency planning zone towns) are advised to stay indoors and stay tuned to this radio station until specific town-by-town instructions are provided. Staying indoors is a precautionary measure that will shelter you from short-term radioactive releases.

Please refrain from all unnecessary use of communications systems. Public officials have instructions for protecting the children or other persons in their care. Unnecessary communications will impede emergency workers from undertaking their assignments. Unnecessary telephone calls may tie up circuits needed by others for emergencies.

We repeat: A GENERAL EMERGENCY has been declared at the (facility name). Residents of (Massachusetts emergency planning zone towns) are advised to stay tuned to the Emergency Broadcast System for instructions. This advisory will be repeated frequently until more details on the event are available. Further instructions will be provided over this station shortly.

EXHIBIT A12-5

EMERGENCY BROADCAST SYSTEM MESSAGE FOR A NUCLEAR POWER STATION INCIDENT

SHELTER IN PLACE

This is (name, title) of the Massachusetts Civil Defense Agency. There has been an accident at the (facility name) located in (town, state). The event has been classified as an (class name).

Personnel from the Massachusetts Department of Public Health are at the plant site to provide continuing investigations of the severity of the accident. Their investigations include assessment of the status of plant safety systems, review of the consequences of existing and potential releases of radioactive material from the plant, review of local weather conditions, and field monitoring of the levels of radiation in nearby towns.

The Department of Public Health staff has briefed the Governor on the status of the plant. Based on this briefing, Governor (name) has ordered that protective actions be implemented for the towns of (town names).

Persons currently in (town names) are advised to SHELTER IN PLACE. Remain indoors at your current location. Remaining indoors will provide you with adequate protection from any radiation being released from the plant. To increase your protection from potential exposure to radiation, you should take the following protective actions:

1. Take shelter indoors. Shelter in your home, at your work place or at any location where you may stay for several hours.

2. Make sure all doors and windows are tightly closed.

3. If in your car, close all windows and vents as you proceed to your destination.

4. Turn off all fans, heating or air conditioning systems if they bring in outside air.

5. Take a radio with you and move to the basement if you have one, or move to the room with fewest windows and doors.

6. Keep all members of your household indoors. Stay calm and tune to your local Emergency Broadcast System radio station.

7. Do not call local officials, Police, or Fire unless absolutely necessary.

8. If you must go outdoors, place a handkerchief or towel (folded several times) or a protective mask over your nose and mouth to filter the air you breathe. Limit the time you are outside.

9. The food and milk supplies in your home are safe for consumption. You will be advised on the safety of water supplied by public officials over the Emergency Broadcast System. Outside vegetable gardens may not be safe in the event of a chemical or radioactive accident. Do not eat from outside gardens until advised they are safe.

10. Remain indoors until advised by local and State officials that it is safe to go outside, or until further protective actions are recommended.

Transients and non-residents of the Towns of (town names) that are in these towns on non-essential business may either shelter in place, or leave the area taking routes to the (north, east, south or west). Persons currently in vehicles in transit in these towns are advised to proceed promptly to their destinations and take shelter, or leave the area. Persons in automobiles should close all windows and vents while in transit.

Schools, hospitals, or other institutions currently in operation are taking similar sheltering actions. Public officials have instructions for protecting children or other persons in their care until sheltering is no longer necessary.

Please refrain from all unnecessary use of communications systems. Call public officials, relatives, neighbors or friends only as absolutely necessary for emergency purposes.

Responding to unnecessary communications will keep emergency workers from undertaking higher priority emergency assignments. Your use of telephones for unnecessary calls may tie up circuits needed by others for emergency calls.

Further information and instructions will be provided to you over this and other Emergency Broadcast System stations as plant status changes. Please stay tuned.

We repeat: A (class name) has been declared at the (facility name) located in (town, state). The Governor has ordered the implementation of protective actions. Persons in (town names) are to SHELTER IN PLACE. Information and instructions will be updated or repeated over this and other Emergency Broadcast System stations regularly.

(To be read for state border power plants--"This information is for Massachusetts residents only. Residents of [New Hampshire or Vermont] should tune to a local in-state radio station for emergency information.")

EXHIBIT A-1

GLOSSARY

As used in this plan, the terms listed below have the meanings given in the definitions. Underlined words cited in the definitions are cross-indexed.

Access Control

The establishment of roadblocks, road barriers, or other means to control unauthorized public entry into designated areas.

Accident

An unforeseen and unintentional event which may result in an emergency.

Accident Assessment

The evaluation of the actual and potential consequences of a radiological incident.

Background Radiation

The radiation in man's natural environment, including cosmic rays and radiation from naturally occurring radioactive elements, both outside and inside the bodies of humans and animals. It is also called natural radiation. The usually quoted average individual exposure from background radiation is 125 millirem per year.

Contamination, Radioactive

Deposition of radioactive material in places where it is undesired, particularly where its presence may be harmful to people.

Critical Organ

The body organ receiving a radiation dose that results in the greatest overall damage to the body.

Critical Pathway

The route or pathway that is given primary consideration as being the mechanism of principal radiation exposure to the public under given conditions.

Curie

The basic unit used to describe the intensity of radioactivity in a sample of material. The curie is equal to 37 billion nuclear transformations per second. Several fractions of a curie are in common usage:

Microcurie: One-millionth of a curie, abbreviated uCi
Millicurie: One-thousandth of a curie, abbreviated mCi
Picocurie: One-millionth of a microcurie, abbreviated pCi.

Decontamination

The reduction or removal of contaminating radioactive material from a structure, area, object, or person. Decontamination may be accomplished by (1) treating the surface to remove or decrease the contamination; (2) letting the material stand so that the radioactivity is decreased as a result of natural decay, and (3) covering the contamination to shield the radiation emitted.

Design Basis Accident

The postulated accident that a nuclear power plant is designed to withstand or mitigate so as to meet U.S. Nuclear Regulatory Commission regulatory requirements.

Dose

A quantity of radiation received. The term "dose" is often used in the sense of the exposure dose, expressed in roentgens, which is a measure of the total amount of ionization that the quantity of radiation could produce in air. This should be distinguished from the absorbed dose, given in rads, that represents the energy absorbed from the radiation in a gram of any material. Furthermore, the biological dose, given in rem, is a measure of the biological damage to living tissue from the radiation exposure.

Dose Commitment

The total radiation dose equivalent received by an exposed individual or to the critical (target) organ over the lifetime from a single event.

Dose Rate

The radiation dose delivered per unit of time, for example, rem per hour.

Dosimeter

A portable instrument for measuring and registering the total accumulated exposure to radiation. (See dosimetry.)

Dosimetry

The theory and application of the principles and techniques involved in the measurement and recording of radiation doses. Its practical aspect is concerned with the use of various types of radiation instruments with which measurements are made.

Drill

The supervised instruction period aimed at developing, maintaining, and testing skills in a particular operation of emergency preparedness. A drill is often a component of an exercise.

Emergency

That situation or condition which may lead to undue risk to the health and safety of the public or to site personnel.

Emergency Action Levels

Specific instrument readings, system or event observations and/or radiological levels which initiate event classifications/notification procedures, protective actions, and/or the mobilization of an emergency response organization. These are specific threshold readings or observations indicating system failures or abnormalities.

Emergency Broadcast System (EBS)

A network of radio stations which provide a communications link between responsible officials and the general public. EBS stations provide instructions to be followed by the public and keep them informed during an emergency.

Emergency Classification

The scheme used to indicate the severity of an emergency. The four classes, in order of increasing severity, are Notification of an Unusual Event, Alert, Site Area Emergency, and General Emergency.

Emergency Medical Services

The supportive action that entails the provision of medical treatment and ambulance services to the critically ill and injured.

Emergency Operating Center (EOC)

The command and communication center which will be activated to coordinate the protective actions and supportive actions that may need to be implemented.

Emergency Operations Facility (EOF)

A facility operated by the licensee for the coordinated deployment of emergency personnel, evaluation of offsite effects of the accident, coordination of decisions affecting accident mitigation and public safety, and maintenance of communications with offsite authorities.

Emergency Planning Zone (EPZ)

The generic area about a nuclear power station for which planning is recommended to ensure that prompt and effective actions can be taken to protect the public in the event of a radiological incident. It is defined for the plume exposure pathway and ingestion exposure pathway.

Emergency Worker

A member of an emergency response organization.

Evacuation

The protective action that entails the implementation of actions and procedures for the actual movement of the public out of the affected area.

Exercise

An event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations.

Exposure

The absorption of radiation or ingestion of a radionuclide. Acute exposure is generally accepted to be a large exposure received over a short period of time. Chronic exposure is exposure received during a lifetime.

Food, Water, and Milk Control

The protective action that entails controlling food, water, milk, and livestock feed supplies which may have become contaminated.

Gonad

Sex organ in which reproductive cells develop. The ovaries are the female gonads and the testes are the male gonads.

Ingestion Exposure Pathway

The pathway by which the exposure could be from ingestion of contaminated water or foods, such as milk, meat, or fresh vegetables.

Ingestion Zone

The emergency planning zone corresponding to the ingestion exposure pathway, having a radius of about 50 miles for commercial nuclear facilities.

Law Enforcement

The supportive action that entails the use of law enforcement personnel to maintain civil order.

Mass Care

The supportive action that entails the provision of food, shelter, routine medical services, registration, and other essential provisions or services for evacuees.

Media Center

A facility operated by the licensee for the coordinated release of information to the news media by utility, government and NRC spokespersons.

Monitoring

Periodic or continuous determination of the amount of radiation or radioactive contamination present in an occupied region as a safety measure for purposes of health protection.

Nuclear Alert System (NAS)

A communications network which links the State police communications centers, the civil defense agencies, the near-site facilities, the power station's control room and the emergency operations facility in the affected power station.

Nuclear Power Station

A site where nuclear materials are employed in commercial power-generating operations.

Plume Exposure Pathway

The pathway from which the principal exposure sources are (a) whole body external exposure to gamma radiation from the plume and from deposited material, and (b) inhalation exposure from the passing radioactive plume. Potential exposure could range from hours to days and is affected by weather conditions.

Plume Zone

The emergency planning zone corresponding to the plume exposure pathway having a radius of about 10 miles for commercial nuclear facilities.

Primary Agency

The governmental department or subdivision that is assigned fundamental and lead responsibility to ensure the fulfillment of a designated function.

Projected Dose

The estimate of the radiation dose that potentially affected population groups could receive if protective actions are not taken.

Protective Actions

Those measures taken in anticipation of or after an uncontrolled release of radioactive material has occurred to prevent or miti-

gate radiological exposures to persons that would be likely to occur if the actions were not taken. Protective actions include evacuation, sheltering, access control, and food, water, and milk control.

Protective Action Guides (PAGs)

Recommended radiological dose guidelines that would determine the type of protective actions to be taken following a release of radioactive material. These protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety. The PAG does not include the dose that has occurred prior to the assessment.

Public

The general population with the exception of site personnel.

Public Health and Sanitation

The supportive action that entails the provision of adequate health services and the maintenance of sanitation facilities and procedures.

Rad

Acronym for radiation absorbed dose. The basic unit of absorbed dose of radiation. A dose of one rad means the absorption of 100 ergs per gram of absorbing material.

Radiation

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 Response Plan

A detailed plan which coordinates and describes the emergency response organizations, responsibilities, and capabilities of local or State governments and private organizations to ensure public health and safety arising from an emergency in which there is a potential for radiological release.

Radiological Exposure Control

The monitoring and controlling of public and emergency worker exposure, maintaining records of this exposure, and the actions and procedures necessary for the decontamination of evacuees, emergency workers, and equipment and materials.

Radiological Incident

Any event involving actual or potential radiation exposure or radioactive contamination to the public resulting from the release of radioactive materials from a nuclear power station.

Recovery

The actions taken to restore the affected area as nearly as possible to its preemergency condition.

Reentry

The provisions for the return of the public after evacuation, when the radiation risk has been averted or reduced.

Release of Radioactive Material

a. Controlled Release - Any release of radioactive material from a nuclear power station which was planned and is being controlled by station personnel.

b. Unplanned Release - Any release of radioactive material which is not a controlled release as defined above.

Rem

Acronym for Roentgen Equivalent Man, a unit of dose equivalent; the unit of dose of any ionizing radiation that produces the same biological effect as one Roentgen of X-ray or gamma-ray dosage.

Roentgen

A unit of exposure to radiation. The amount of X-radiation or gamma radiation that will provide one electrostatic unit of charge (positive or negative) in one cubic centimeter of dry air at standard pressure and temperature conditions.

Sheltering

The protective action that entails the notification of the public to seek protection by going indoors, closing doors and windows, and turning off ventilation systems.

Source Term

The radioisotope inventory of the reactor core, or radioisotope release to the environment, often expressed as a function of time.

Standard Operating Procedures

A detailed preestablished set of operational instructions which direct an agency's action in response to an emergency situation. These procedures will be used by an agency in carrying out its assigned responsibilities.

Support Agency

The governmental department or subdivision that is assigned to assist in the fulfillment of a designated function.

Supportive Actions

Those actions which are planned or are taken during or after protective actions to ensure public health and welfare.

Thyroid Blocking

The use of potassium iodide or other suitable drug for the purpose of saturating the thyroid gland with stable iodine and thereby preventing thyroid uptake of radioiodine.

EXHIBIT A-2

PILGRIM NUCLEAR POWER STATION (PLYMOUTH)

(Available for inspection at MCDA)

EXHIBIT A-3

YANKEE NUCLEAR POWER STATION (ROWE)

(Available for inspection at MCDA)

EXHIBIT A-4

VERMONT YANKEE NUCLEAR POWER STATION

(Available for inspection at MCDA)

EXHIBIT A-5
SEABROOK STATION

1.0 PURPOSE

This exhibit provides site-specific information regarding State and local response to a radiological emergency at Seabrook Station. For further information concerning planning concepts common to all nuclear power stations affecting Massachusetts, refer to Section A of the State Radiological Emergency Response Plan (RERP). The MCDD/OEP Area I Plan, the 6 EPZ Community Plans, and 2 Host Community Plans contain further details.

2.0 SITE AND AREA DESCRIPTION

2.1 SITE DESCRIPTION

Seabrook Station is an 1150 megawatt-electric pressurized water reactor (PWR) and is situated on a 900-acre tract of land on the western shore of Hampton Harbor in Seabrook, New Hampshire. This site is located approximately 5 miles northeast of Amesbury, Massachusetts. It is bordered on the east by an extensive saltwater marsh and is located between two small tidal estuaries: the Brown's River and the Hunt's Island Creek.

The City of Portsmouth, New Hampshire, is located approximately 11 miles north of the site while the Boston metropolitan area is located approximately 40 miles south-southwest of the site.

2.2 AREA CHARACTERISTICS

The area within 10 miles of the site includes portions of the States of New Hampshire and Massachusetts. Table 1 lists municipalities in each State which are located wholly or partially within 10 miles of the site. The 50-mile radius around the site includes portions of the States of New Hampshire, Massachusetts, and Maine.

A seasonal, overnight, and daily transient population during the summer period is associated with the beaches and other recreational facilities in the vicinity of the Seabrook Station. A total of 17 public and private campgrounds with an estimated peak capacity of 7,400 were identified within this area. The coastal beaches within 10 miles of Seabrook Station extend from Plum Island Beach in Newbury, Massachusetts, to Wallis Sands Beach in Rye, New Hampshire.

Information on the location of major medical-related facilities, including hospitals and nursing homes, has been compiled for the area within 10 miles of Seabrook Station. Table 2 summarizes the major medical-related facilities located in Massachusetts within 10 miles of the station.

The Parker River National Wildlife Refuge is located in the town of Newbury, Massachusetts, approximately 9 miles south of the site, and has a total area of 6,403 acres.

2.3 UTILITY EMERGENCY FACILITIES

2.3.1 On-site Facilities

Following the declaration of an emergency, the activation of the emergency organization will be coordinated within three onsite emergency facilities. Figure 1 indicates the relative locations of Seabrook's onsite emergency facilities. These are; the Technical Support Center, the Operational Support Center, and the Control Room.

2.3.2 Off-site Facilities

2.3.2.1 Emergency Operations Facility

The Seabrook Station Emergency Operations Facility (EOF) is located at the entrance to the Public Service Company of New Hampshire (PSNH) generating station known as Newington Station on Gosling Road in Newington, New Hampshire. The EOF serves as a base of operations for radiological as-

sessment as well as overall emergency response organization management and recovery activities. The EOF also serves as a centralized meeting location for representatives from offsite authorities and station management as well as provides information needed by Federal, State, and local authorities for implementation of offsite emergency plans. A portion of the EOF has been assigned to Commonwealth of Massachusetts Civil Defense and Public Health emergency response personnel. Radiological assessment, monitoring and evaluation, and protective action recommendation formulation will be directed from the EOF. In addition, the EOF serves as the base of operations for station control, coordinatation of industry support, and establishment of a long-term organization to recover from the accident conditions and results.

2.3.2.2 Media Center

The joint media center for Seabrook Station is located in the Town Hall of Newington, N.H. The media center will serve as the control point for public information releases for the Utility, Massachusetts, and New Hampshire. Representatives from the Governor's Office and MCDA/OEP will coordinate news releases with the utility and the State of New Hampshire from the Media Center.

2.4 EMERGENCY PLANNING ZONES

The concept of emergency planning zones (EPZs) is discussed in Section A2.2.

The 10-mile radius plume exposure pathway EPZ for Seabrook Station is shown in Figure 2. The plume zone includes six Massachusetts communities and 17 New Hampshire communities as listed in Table 1.

The 50-mile radius ingestion exposure pathway EPZ is shown in Figure 3. The ingestion zone includes portions of the States of New Hampshire, Massachusetts, and Maine.

2.5 POPULATION DATA

Population data for the Massachusetts communities within the plume zone for Seabrook Station are summarized in Table 3. Information is provided for permanent residents, tourists, and people employed who live outside the EPZ. The information is presented for each community.

2.6 EVACUATION TIME ESTIMATES

Evacuation clear time estimates for the Massachusetts communities within the 10-mile plume zone for Seabrook Station are provided in Table 4. Time estimates are provided for 5- and 10-mile evacuation scenarios for winter day and summer weekend populations. Adverse weather estimates are also provided for winter day and summer weekend 10-mile evacuation scenarios.

3.0 CONCEPT OF OPERATIONS

For a general discussion, refer to the State RERP, Section 3, Concept of Operations.

3.1 EMERGENCY RESPONSE ORGANIZATION

Six Massachusetts communities (see Table 1) are within the plume exposure pathway emergency planning zone of Seabrook Station. Each community has appointed a director of Civil Defense who will coordinate the local emergency response under direction of the local chief executive. Each community has an emergency operating center (EOC) to serve as the command and control headquarters for local operations. Refer to the Area I and local Plans for further information on local operations.

Coordination among local communities and coordination between local operations and State operations will be through the director, MCDA/OEP Area I at the Area I EOC in Tewksbury. The Area I emergency response organization is discussed in the Area I RERP, Section 2.3.3.

The Director, MCDA/OEP, is responsible for coordinating the State emergency response on behalf of the Governor and the Secretary of Public Safety from the State EOC in Framingham. The Massachusetts Department of Public Health (MDPH) has primary responsibility for assessing the health implications of the accident and determining protective actions to be taken by the public.

In the event that key State officials are unavailable in a severe, fast-moving situation for initial accident assessment and/or verification of recommended protective actions, the Massachusetts State Police, Troop A Commander, is authorized and directed to make necessary notification to Massachusetts EPZ communities for sheltering or evacuation of the public and to coordinate the activation of the EBS and the public notification systems.

The Seabrook Station unit shift supervisor has the responsibility for recognizing potential emergency conditions and notifying the shift superintendent. The shift superintendent has the authority and responsibility to classify the observed conditions in accordance with the emergency classification system. The classification of an emergency activates the station's emergency response organization. The shift superintendent then assumes command of the short-term emergency response organization under the title of Short Term Emergency Director. Among the responsibilities of the Short Term Emergency Director are the decision to classify and declare an emergency and the decision to notify and recommend protective actions to offsite authorities. Station emergency facilities (see Section 2.3 of this Exhibit) will be activated in accordance with the emergency classification.

3.2 EMERGENCY COMMUNICATIONS

For a discussion of communications among principal organizations, see the State RERP, Section A3.4. Communications are also discussed in the Area I Plan and each local Plan.

The nuclear alert system (NAS) is the primary notification and communication link among the emergency facilities. NAS equipment is installed in the control room, the State Police Troop "A" Headquarters in Framingham, State police headquarters in New Hampshire, the Massachusetts State EOC in Framingham, MCDA/OEP Area I EOC in Tewksbury, the New Hampshire State EOC in Concord, and the New Hampshire Forward EOC in Brentwood, NH. NAS equipment is also installed in the utility.

A command and control radio provides an additional communications link among the Massachusetts offsite emergency facilities, including State Police Troop "A" Headquarters, the Massachusetts State EOC, MCDA/OEP Area I EOC, and the six Massachusetts EPZ communities. See the Area I Plan for a detailed description of the Command and Control Radio System (Section 6). This radio system will serve as the primary notification link to the six EPZ communities.

3.3 PUBLIC ALERTING SYSTEM

3.3.1 System Description

The Pulbic Alerting System is comprised of 149 electronic sirens, all but 7 of which have public address as well as tone capability. The sirens are situated to ensure adequate coverage of the plume exposure EPZ. A complete description of the siren system is found in the Final Design Report, Seabrook Station Public Alert and Notification System, dated May 1986. Sirens are distributed within the Massachusetts portion of the plume exposure EPZ as follows: Amesbury - 11, Newbury - 7, Newburyport - 8, Merrimac - 3, Salisbury - 8, and West Newbury - 5. Appendix 5 of the Area I Plan and the six local plans list the specific locations of these sirens.

The siren system is supplemented by placing tone activated alert radios in industries, schools, hospitals, and other larger institutions in the EPZ.

Each local plan contains route alerting maps and procedures for route alerting teams to provide public notification should part of the siren system malfunction.

3.3.2 System Activation

The public alerting system is capable of being activated from a central location, or by any of the six local EPZ communities. Normally, the Commander of State Police Troop A, Framingham, directs the activation of the system by Troop A, Framingham Communications staff upon instruction to do so from MCDA/OEP Framingham. The State Police have the capability of activating any, or all, sirens in the entire EPZ.

Local EPZ communities, through their local dispatch points, have the capability of activating any or all of the sirens located within their community. For an accident at Seabrook, local communities would activate their own sirens only if the State Police were unable to activate the sirens from Framingham. The State Police, Framingham, are also responsible for coordinating with the Master EBS Station (WCGY, 93.7 FM), upon instruction from MCDA/OEP Framingham, the activation of tone alert radios in the EPZ.

Provisions have also been made for the State Police to authorize the activation of the public alerting system and EBS system directly in a fast breaking accident where MCDA/OEP cannot be notified in time. See Appendix 1 of the Area I Plan.

4.0 RESPONSIBILITIES

Responsibilities of local organizations are discussed in local RERPs. General responsibilities of state agencies are identified in the State RERP, Section A4. Additionally, the Massachusetts State Police, the Massachusetts Department of Public Works, and the National Guard have specific preplanned responsibilities in support of local operations in the event that protective action is required for the Massachusetts EPZ communities. These preplanned responsibilities are detailed in the MCDA/OEP Area I Plan for Seabrook Station.

The Massachusetts State Police provides the primary notification contact point for Massaschusetts. Troop A Headquarters in Framingham is responsible for notifying State and local authorities of an emergency at Seabrook Station. Notification, communications, and emergency procedures have been developed by the State Police Troop A for this responsibility. Section 6 of this exhibit describes the notification sequence.

The Massachusetts State Police and Department of Public Works are responsible for the control of traffic on State highways during an evacuation and for the implementation of access control. Specific responsibilities and procedures are contained in the Area I Plan.

The Massachusetts National Guard (MNG) will provide fuel for buses and will augment local emergency medical services by providing medical transport vehicles. The Massachusetts National Guard will augment the Massachusetts - State Police in access and traffic control and law enforcement by providing military policemen and officers and wreckers.

5.0 PLAN IMPLEMENTATION

State and local Plans and emergency response are implemented in accordance with the emergency class declared by Seabrook Station. A description of each emergency class is provided in the State Plan, Section A2.10. Preplanned State response to each emergency class is provided in the State Plan, Section A5. The following summarizes State and local response for each emergency class. Refer to local plans for town-specific response, and the Area I Plan for MCDA/OEP Area I response.

5.1 UNUSUAL EVENT

Key State and local authorities will be notified of the situation and remain on standby until closeout or escalation to a more severe emergency class. No further action is required.

5.2 ALERT

State and local authorities will be notified of the situation. Key officials will be notified, placed on standby, and kept informed on the situation. The State and Area I EOCs will be activated. Seabrook's technical support center and emergency operations facility (EOF) will be activated. MCDA/OEP and MDPH representatives will be dispatched to the EOF. Local EOCs will be activated at the request of MCDA/OEP or local officials.

If actual releases substantially exceed technical specifications, MDPH may initiate accident assessment and dispatch field teams. Plume and ingestion exposure pathway dose projections and evaluations may be made. MDPH and MCDA/OEP will determine if protective actions are warranted.

MCDA/OEP will keep all emergency organizations informed of the situation and actions implemented.

MCDA/OEP will consider the early closing of Massachusetts EPZ beach areas, should summer crowd conditions exist.

MCDA/OEP will request that the Governor's Office authorize the National Guard to begin alerting their personnel. This would occur at the Alert classification only if MCDA felt compensatory measures would be needed. The Governor would have to declare a State of Emergency to activate the National Guard.

This emergency status will be maintained until closeout, deescalation, or escalation to a more severe class.

5.3 SITE AREA EMERGENCY

All actions described under Section 5.2 will be initiated if not previously performed.

All emergency facilities will be activated and liaison personnel dispatched.

All EOC liaison and support staff from other State Agencies will be activated and report to the State EOC and other assigned field locations.

The State's public information program will be implemented. The Emergency Broadcast System and public alerting systems will be activated.

Reception communities will be alerted, and their EOCs activated.

MDPH and MCDA/OEP will recommend protective actions to the Governor if warranted.

If it is determined that there is a possibility that the protective action of sheltering may be recommended, Salisbury Beach and Plum Island will be closed to the public. The public will be notified of this action through public address system at the beach and advised to return to their homes.

This emergency status will be maintained until closeout, deescalation, or escalation to General Emergency class.

5.4 GENERAL EMERGENCY

All actions under Site Area Emergency will be initiated if not previously performed.

Reception community EOCs and reception centers will be fully activated. Protective actions as determined by the MDPH and MCDA/OEP and ordered by the Governor will be implemented.

This emergency status will be maintained until closeout or reduction in emergency class is necessary.

6.0 WARNING AND NOTIFICATION

6.1 INITIAL NOTIFICATION

Upon declaration of one of the four emergency classes, the Seabrook Station Emergency Director will notify Massachusetts State Police Troop A Headquarters, Framingham, by the Nuclear Alert System (NAS). Commercial telephone will be used as backup. If notification is received by the NAS, no verfication is necessary. If notification is received by commercial telephone, the State Police duty officer will verify the message by calling a dedicated telephone number in the control room.

After verification, the dispatcher will contact the duty officers at MDPH and MCDA/OEP. The implementing procedure for notification of the Massachusetts Emergency Response Organization is provided in Attachment 1 to this Exhibit and Appendix 1 of the Area I Plan. The six plume zone communities will then be notified for all emergency classes.

The MDPH official will call Seabrook Station and obtain detailed information with respect to the emergency. MDPH will keep the MCDA/OEP and other officials informed as appropriate.

6.2 CHANGE IN EMERGENCY CLASSIFICATION

6.2.1 State Emergency Operating Center Not Activated

Upon reclassification of the emergency, Seabrook Station will promptly notify the Massachusetts State Police Troop A Headquarters. The change in classification will then be disseminated in accordance with Section 6.1. This procedure will also be followed for termination of the emergency.

6.2.2 State Emergency Operating Center Activated

Once Seabrook Station is notified that the State EOC has been activated, all subsequent notifications with respect to changes in the emergency classification will be made to the State EOC. The MCDA/OEP will then notify the appropriate emergency organizations. This procedure will be followed until the emergency has terminated.

7.0 ACCIDENT ASSESSMENT

State responsibilities for accident assessment are outlined in Section A7 of the State RERP.

MDPH will conduct its assessment in accordance with Section A7. Thermoluminescent radiation detectors (TLDs) are installed in Massachusetts EPZ locations. These will be monitored by MDPH personnel as described in the Nuclear Incident Advisory Team Handbook.

8.0 PROTECTIVE ACTIONS

State responsibilities for the implementation of protective actions are described in the State RERP, Section A8.

The Massachusetts State Police, Troop A Headquarters, are responsible for activating the public alert and notification system.

Reception communities and reception centers for the Massachusetts EPZ communities are shown in Table 5. Shelters located within the reception communities are listed in Table 6. Primary evacuation routes to the reception centers are shown in Figure 4. Directions for each community to the reception centers are contained in the Massachusetts Access and Traffic Control Plan for Seabrook Nuclear Power Station. (Appendix 2 of the Area I Plan).

The Massachusetts State Police, Department of Public Works, and, if necessary, National Guard will provide traffic and access control on State highways. Support will also be provided to local police departments if requested. Traffic and access control points are identified in Appendix 2 of the Area I Plan for the primary and alternate evacuation routes.

The primary means of transportation for evacuees is the private automobile. Transportation resources to supplement the automobile will be provided by local and regional transportation companies. This is described in the Area I Plan. The National Guard will provide emergency fuel for buses, as is described in Appendix 4 of the Area I Plan.

9.0 RADIOLOGICAL EXPOSURE CONTROL

Radiological exposure control is described in Section A9 of the Massachusetts RERP, and in the Area I and local plans.

Radiological exposure control is the responsibility of local EPZ communities and host communities. Technical guidance, procedures and advisory personnel will be provided by the MDPH and its NIAT members. Dosimetry has been provided to the six Massachusetts EPZ towns, the State Police, the Department of Public Works, and in Area I Headquarters and host communities.

10. SUPPORTIVE ACTIONS

State responsibilities for the implementation of supportive actions are described in the State RERP, Section A10.

10.1 EMERGENCY MEDICAL SERVICES

Primary reliance will be on the local and regional EMS systems. If necessary, the Massachusetts National Guard can provide medical transport vehicles in support of local emergency response operations.

Massachusetts hospitals in the Seabrook area which are capable of receiving and treating radiologically contaiminated and/or exposed patients are listed in Table 7 of this exhibit.

10.2 MASS CARE

If evacuation of the area is required for an extended period, shelters will be opened to house and feed evacuees. These facilities are listed in Table 6 and the Host Community Plans. The sheltering and feeding of evacuees at these facilities is the responsibility of the American National Red Cross, and will be carried out using established standard Red Cross procedures.

11.0 REENTRY AND RECOVERY

State responsibilities for reentry and recovery are as described in the State RERP, Section A11.

12.0 EMERGENCY PUBLIC INFORMATION

State responsibilites for public information are described in the State RERP, Section A12.

12.1 MEDIA CENTER

The Seabrook Station Media Center is a facility established at the Newington, NH Town Hall for the coordination of official information to be released to the news media by New Hampshire Yankee, Massachusetts and New Hampshire Civil Defense Agencies, the Nuclear Regulatory Commission and the Federal Emergency Management Agency. The facility contains working space for utility, State, and Federal public information personnel. A media briefing room and work space has been provided that will accommodate approximately 200 people. News media personnel are invited to the center and receive updated information on the status of the emergency. Through

this center, New Hampshire Yankee also coordinates the release of information to industry, government organizations, New Hampshire Yankee employees, and joint owners public information representatives. The facility is activated whenever there is extraordinary news interest or at the alert or greater level.

12.2 NEWS MEDIA BRIEFINGS

Briefings of the news media will be jointly conducted by Seabrook Station, Massachusetts, New Hampshire, and NRC representatives. The MCDA/DEP and MDPH representatives will coordinate the development and release of news announcements with their New Hampshire counterparts to ensure that the information released is consistent between the two states.

12.3 RADIO STATIONS

Radio stations in the Seabrook area which will broadcast emergency public information for Massachusetts EPZ residents are listed below:

WCEA	1450 AM	Newburyport
WCGY*	93.7 FM	Lawrence
WHAV	1490 AM	Haverhill
WLYT	92.5 FM	Haverhill

*24-hour operation

WCGY is the primary radio station for the Massachusetts communities located in the Seabrook area.

The MCDA's Massachusetts Emergency Broadcast System Operational Plan details information on these and other radio stations.

12.4 PUBLIC INFORMATION BROCHURES

A copy of the public information brochure for Massachusetts Seabrook area residents is kept on file at MCDA Headquarters.

SEABROOK STATION

TABLE 1

COMMUNITIES WITHIN THE SEABROOK STATION
PLUME EXPOSURE PATHWAY EMERGENCY PLANNING ZONE

Amesbury
Merrimac
Newbury
Newburyport
Salisbury
West Newbury

Brentwood
East Kingston
Exeter
Greenland
Hampton
Hampton Falls
Kensington
Kingston
Newfields
New Castle
Newton
North Hampton
Portsmouth
Rye
Seabrook
South Hampton
Stratham

SEABROOK STATION

TABLE 2

MASSACHUSETTS MEDICAL RELATED FACILITIES WITHIN 10 MILES OF THE SEABROOK STATIC

Name and Type	Location (Sector)
Amesbury	
Amesbury Hospital	Highland Ave. (SW 5-6)
Amesbury Nursing and Retirement Home	22 Maple St. (WSW 5-6)
Hillside Nursing Home	29 Hillside (SW 5-6)
Maplewood Manor Nursing Home	Morrill Pl. (SW 5-6)
Eastwood Rest Home	39 High St. (SW 5-6)
North Eastwood Rest Home	276 Main St. (SW 5-6)
Parkside Rest Home	56 Sparkhawk St. (SW 5-6)
Newburyport	
Anna Jacques Hospital	Highland Ave. (SSW 6-7)
Brigham Manor Nursing Home	77 High St. (S 6-7)
Country Manor Convalescent Home, Inc.	Low St. (SSW 6-7)
Port Rehabilitation and Skilled Nursing Home	Low & Hale St. (SSW 5-6)
Home for Aged Men (Newburyport Society)	361 High St. (SSW 5-6)
Home for Aged Women (Newburyport Society)	75 High St. (S 6-7)
Salisbury	
Greenleaf House Nursing Home	335 Elm St. (SSW 4-5)
Merrimac	
Merrimac Kidney Dialysis Center	21 Union St. Axt.

TABLE 3

POPULATIONS OF MASSACHUSETTS MUNICIPALITIES WHOLLY OR PARTIALLY WITHIN THE 10 MILE EPZ OF THE SITE

PROJECTED 1986 POPULATION

Town	Permanent[1] Residents	Tourists[2]	Employees[2] Who Live Outide EPZ
Amesbury	14,258	1,926	1,545
Merrimac	4,420	263	596
Newbury	5,479	4,382	972
Newburyport	16,414	4,522	1,681
Salisbury	6,726	21,943	1,167
West Newbury	3,296	504	404

(1) KLD Progress Report No. 1 Page 19

(2) Numbers provided by KLD Associates

TABLE 4

MASSACHUSETTS 10-MILE PLUME EPZ
EVACUATION CLEAR TIME ESTIMATES

Scenario	ERPA	Clear Time (hr:min)
5-Mile Evacuation		
Summer Weekend-good conditions	B Amesbury & Salisbury	6:10
Summer Weekend-adverse conditions		7:50
Summer Midweek-good conditions		5:55
Summer Midweek-adverse conditions		7:40
Off-season-good conditions		4:40
Off-season-adverse conditions		4:35
10-Mile Evacuation		
Summer Weekend-good conditions	B Amesbury & Salisbury	5:15
Summer Weekend-adverse conditions	&	6:40
Summer Midweek-good conditions	E Merrimac	6:10
Summer Midweek-adverse conditions	Newbury	7:45
Off-season-good conditions	Newburyport	5:30
Off-season-adverse conditions	West Newbury	7:00

SOURCE: Evacuation Plan Update for Seabrook Station, Progress Report No. 5, dated March 10, 1986. Prepared by KLD Associates.

TABLE 5

RECEPTION COMMUNITIES AND
RECEPTION CENTERS

Plume Zone Community	Reception Community
Amesbury	Andover
Merrimac	Andover
Newbury	Peabody
Newburyport	Peabody
Salisbury	Peabody
West Newbury	Andover

The following is a listing of Reception Communities and Reception Centers:

Reception Community	Reception Center
Andover	Merrimack College
Peabody	North Shore Shopping Center

TABLE 6

MASS CARE CENTERS BY RECEPTION COMMUNITY

Andover

Andover High School
Swasheen Road

W. Jr. High School
Swasheen Road

W. Elementary School
Beacon Street

Greater Lawrence Vocational
Technical High School
River Road

Bancroft Elementary School (Back-up)
Bancroft Road

Doherty Elementary & Jr. High School
Bartlett Street

S. Elementary School
Woburn Street

Peabody

William Welch School
Swampscott Avenue

South Memorial School (Back-up)
Maple Street

Center School
Irving Street

J. Burke School
Birch Street

McCarthy School (Back-up)
Lake Street

Kiley School
Johnson Street

J. Higgins Jr. High
P. Vocational School
Allen's Lane

Veteran's Memorial High School
Lowell Street

West Memorial School
Bow Street

TABLE 7

LIST OF OFF-SITE HOSPITALS CAPABLE OF TREATING CONTAMINATED, INJURED INDIVIDUALS

1. Brigham and Women's Hospital
   75 Francis Street
   Boston, MA 02115

2. Massachusetts General Hospital
   32 Fruit Street
   Boston, MA 02114

3. University of Massachusetts
   Medical Center
   55 Lake Avenue North
   Worcester, MA 01605

4. Amesbury Hospital
   Morrill Place
   Amesbury, MA 01913

5. Hunt Memorial Hospital
   90 Lindall Street
   Danvers, MA 01923

6. Hale Hospital
   40 Buttonwoods Avenue
   Haverhill, MA 01830

7. Lawrence General Hospital
   1 General Avenue
   Lawrence, MA 01841

8. St. Joseph's Hospital
   220 Pawtucket Street
   Lowell, MA 01852

9. Anna Jacques Hospital
   Highland Avenue
   Newburyport, MA 01950

10. J.B. Thomas Hospital
    15 King Street
    Peabody, MA 01960

11. Salem Hospital
    81 Highland Avenue
    Salem, MA 01970

12. Lowell General Hospital
    295 Varnum Avenue
    Lowell, MA 01852

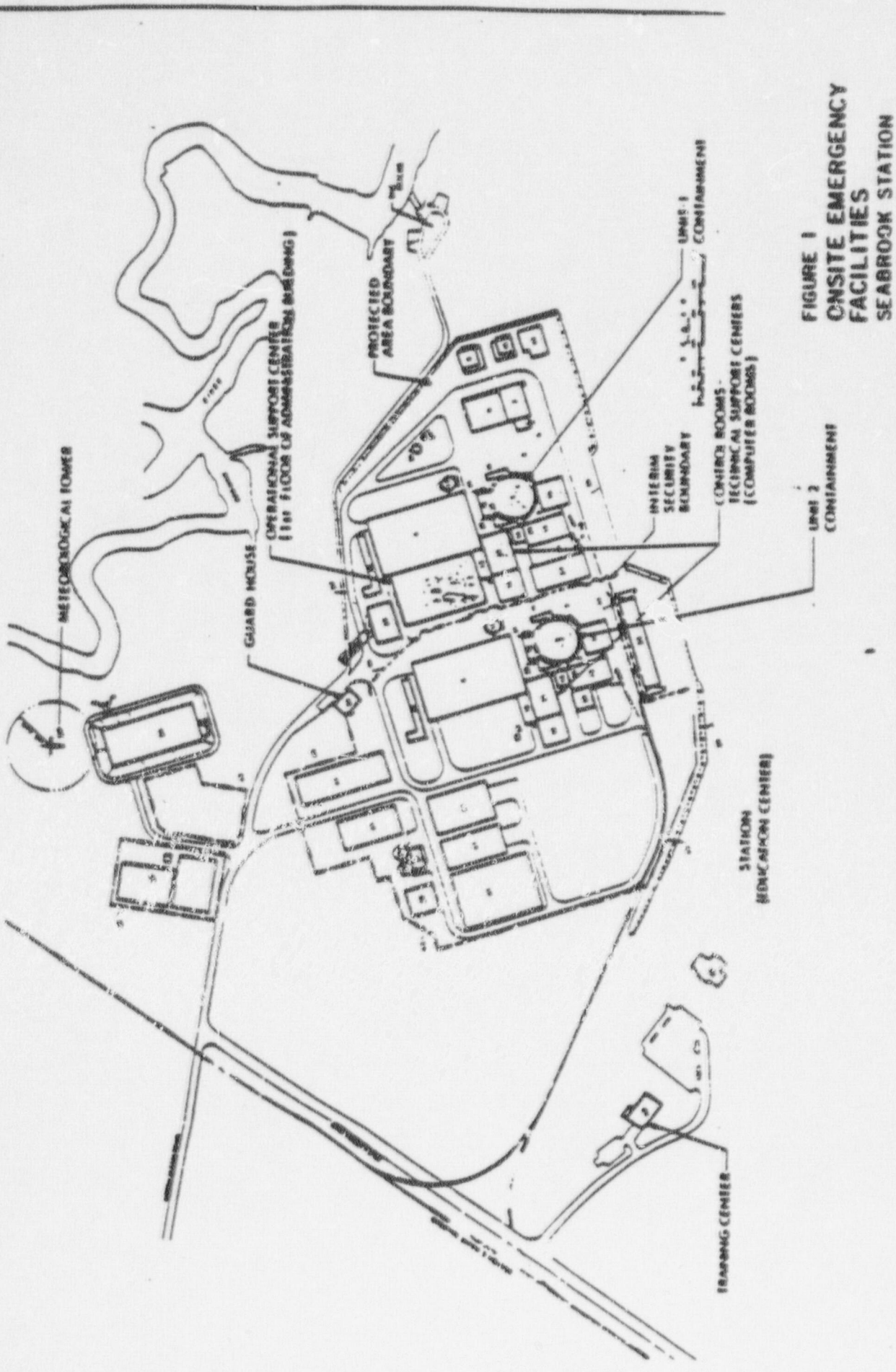


FIGURE 1
ONSITE EMERGENCY FACILITIES
SEABROOK STATION

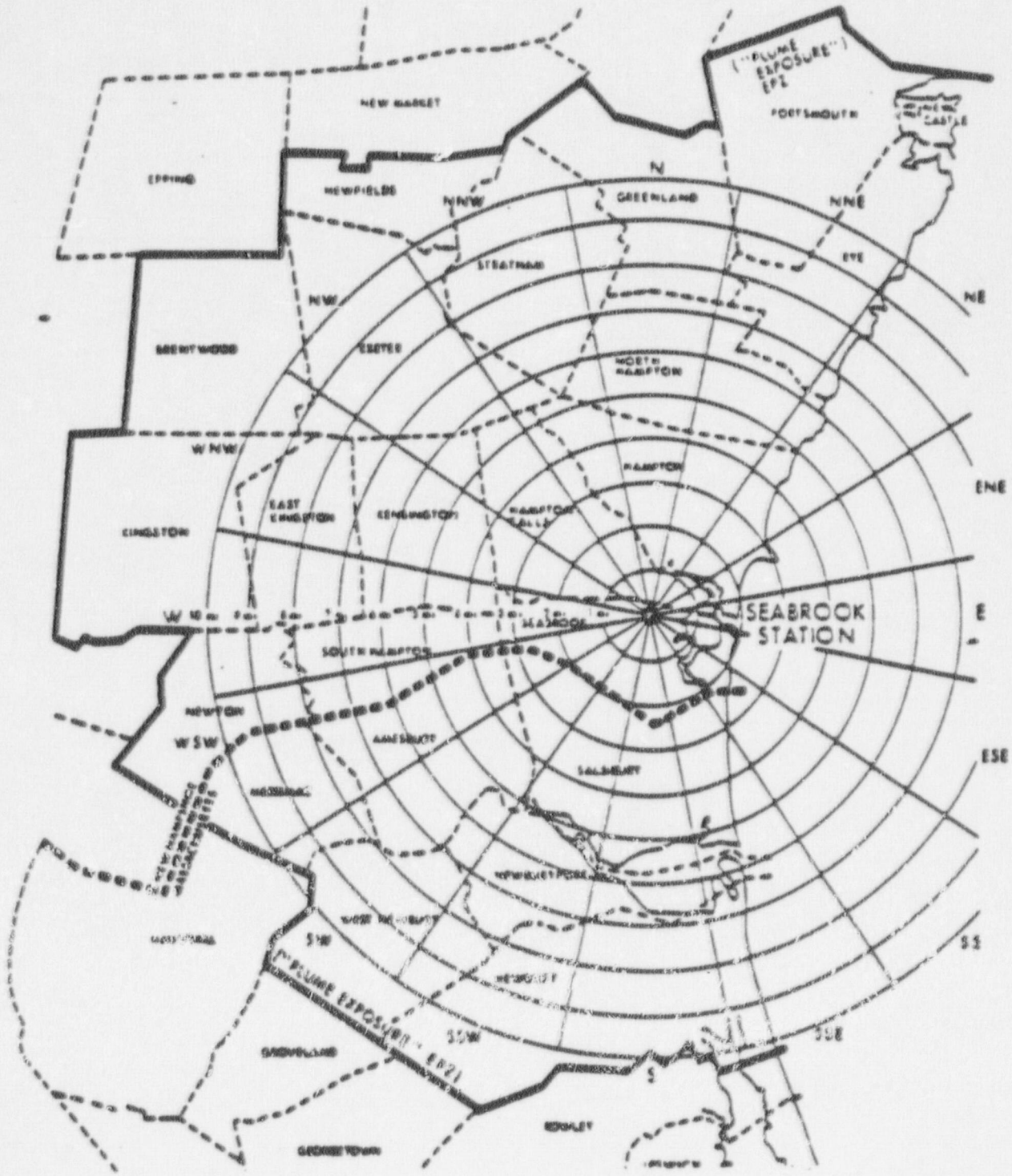


FIGURE 2
PLUME EXPOSURE PATHWAY
EMERGENCY PLANNING ZONE
SEABROOK STATION

FIGURE 3
INGESTION EXPOSURE PATHWAY
EMERGENCY PLANNING ZONE
SEABROOK STATION

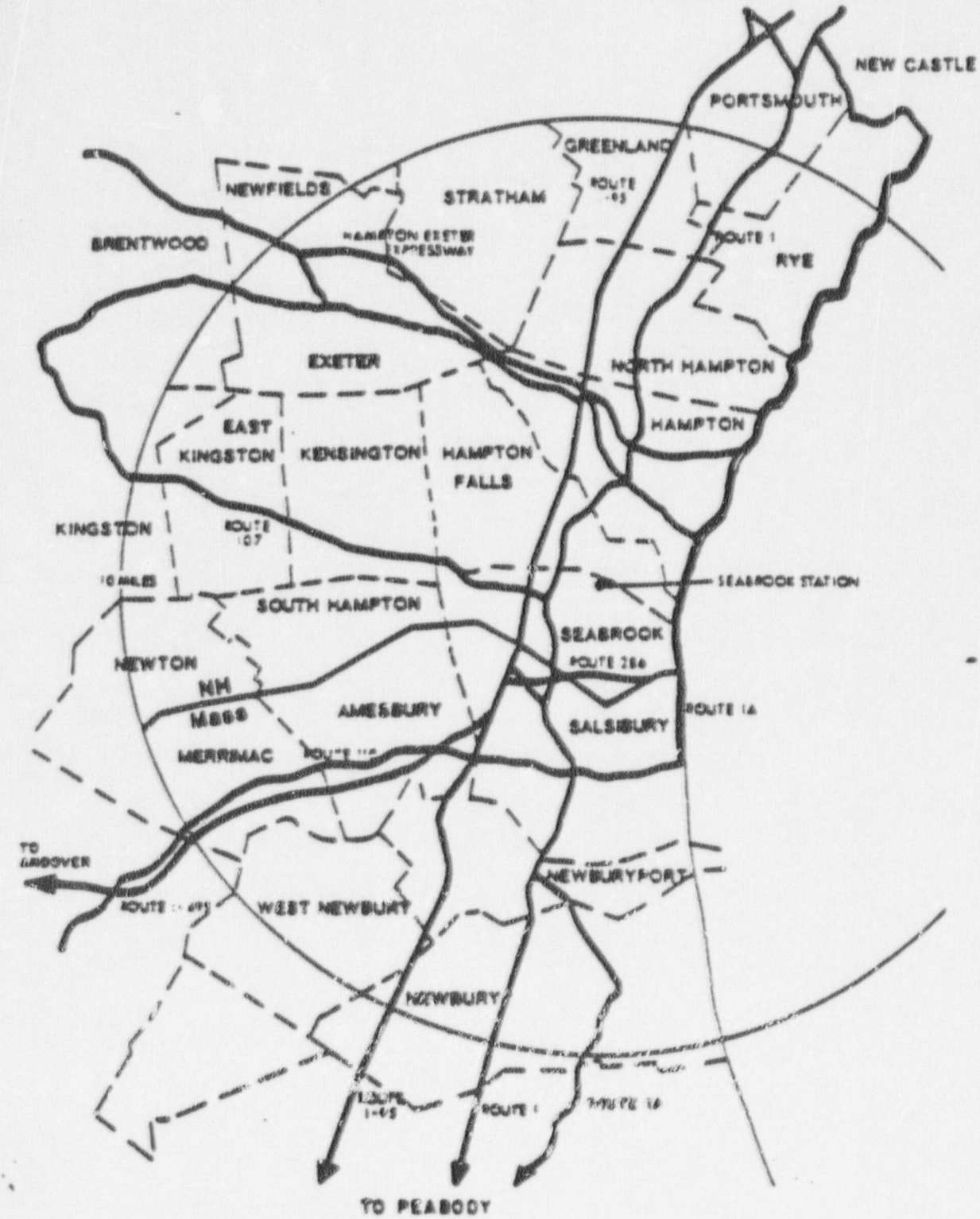


FIGURE 4
EMERGENCY PLANNING ZONE
PRIMARY EVACUATION ROUTES
SEABROOK STATION

EXHIBIT A-5

SEABROOK STATION

MASSACHUSETTS EMERGENCY PLAN IMPLEMENTING PROCEDURES

ATTACHMENT 1 EOC PROCEDURES FOR SEABROOK

ATTACHMENT 2 WARNING AND PROTECTIVE ACTIONS FOR SUMMER BEACH POPULATIONS

EXHIBIT A-5, ATTACHMENT 1

MASSACHUSETTS CIVIL DEFENSE AGENCY

OFFICE OF EMERGENCY PREPAREDNESS

EMERGENCY OPERATIONS CENTER PROCEDURES

FOR AN INCIDENT AT THE

SEABROOK NUCLEAR POWER STATION

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   F. Mobilization Designees
   G. Executive Order 144 Agency Representatives
   H. Public Information Officer
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1. General Description

The Massachusetts Civil Defense Agency/Office of Emergency Preparedness and the State Emergency Operations Center (EOC) are located in an underground shelter at 400 Worcester Road (Route 9) in Framingham adjacent to the State Police Training Academy.

2. Purpose

The purpose of this plan is to establish procedures for the management of emergency response activities utilizing personnel and facilities available at the EOC during an incident at the Seabrook Nuclear Power Station.

3. Objectives

a. To insure that the EOC is maintained in operational readiness

b. To identify all EOC personnel and describe their areas of responsibility.

c. To insure that all key EOC personnel can be expeditiously alerted in response to an emergency.

4. Assumptions

a. That MCDA/OEP personnel can be expeditiously alerted and will respond.

b. That key functions can be carried out by MCDA/OEP personnel.

c. That Executive Order 144 personnel can be expeditiously alerted and mobilized to support MCDA/OEP personnel and EOC operations.

d. That the EOC can be effectively and efficiently staffed in response to an incident at Seabrook Nuclear Power Station.

e. That the EOC can be activated and operated by on-duty emergency personnel.

5. Responsibilities

A. Director, MCDA/OEP

1. Is responsible for insuring the operational readiness of the agency.

2. The Director, or in his absence, the Senior Duty Officer, is responsible for the activation of the EOC and its level of operation in response to an emergency situation at SNPS.

3. Is responsible for insuring that the EOC is adequately staffed during its activation and capable of sustaining 24-hour operation for the duration of the emergency.

4. Insures that all personnel perform the duties outlined in this plan and carry out all responsibilities as assigned.

B. Operations Officer

1. Insures that provisions have been made for adequate EOC staffing on a 24-hour basis.

2. Coordinates the activities of emergency response organizations, including those represented in the EOC and those with functions requiring EOC direction and communication.

3. Insures development of periodic situation reports and an action log.

4. Briefs the Director and other superiors as required.

C. Senior Duty Officer

1. In the absence of the Director, activates the EOC and assumes control of the facility and emergency response activities until relieved by a superior.

D. Duty Officer

1. In the absence of the Director, notifies the Senior Duty Officer and if directed to do so, activates the EOC and implements emergency response activities pending the arrival and assumption of control by a superior.

E. MCDA/OEP Planning Staff

1. During the operation of the EOC, functions as the intelligence and information gathering resource for the Director and his staff.

2. Assists the Operations Officer in collecting and analyzing all data pertaining to the emergency situation.

3. Collects and analyzes information regarding off-site impact and makes recommendations to superiors concerning requests for additional resources and assistance.

F. Mobilization Designees

1. Maintain EOC status boards and other informational displays as directed by the Operations Officer.

2. Maintain files of completed actions and other records as directed by the Operations Officer.

G. Executive Order 144 Agency Representatives

1. Coordinate agency resources in response to MCDA/OEP requests for emergency response support.

2. Advise Operations Officer hourly of the status of assigned tasks and completed actions.

3. Coordinate with other agencies to insure the effective mobilization and application of resources to emergency response assignments.

4. Insure the capability of 24-hour staffing for the agency's assigned support responsibilities.

5. Provide the Operations Officer with written summaries of support activities every six hours and at the conclusion of an emergency operation.

H. Public Information Officer

1. Is responsible for preparation and dissemination of news information to members of the news media, government officials, and the general public.

2. Will receive prior approval from the Director before releasing any information to the media.

3. Maintains a file of press releases and tapes of oral reports.

4. Plans and prepares periodic up-dates of crisis development and progress as a basis for news releases as well as provides information to the telephone operators for public inquiry.

5. Prepares all Energency Broadcast System announcements coordinating with the Operations Officer and Director prior to release.

I. Clerical Support - Telephone Operators

1. Receive all incoming telephone calls and route calls to the appropriate action agency within the EOC.

2. Receive and answer public inquiries as appropriate based on information provided by the Public Information Officer.

J. Communications Operators

1. Operate the EOC Message Center.

2. Maintain all internal communications systems.

3. Control telephone switchboard operations.

K. State Police

1. Provide security for EOC facilities.

6. Eoc Rediness Conditions and Operational Levels

1. Readiness Levels

The MCDA/OEP staff shall operate the EOC at a Readiness Level as determined by the Director and defined as follows:

a. Normal: Day to day activities when no emergency situation exists.

b. Stand-by: An increased readiness level reflecting significant circumstances that indicate an emergency situation may be imminent. All off-duty personnel are alerted to stand-by, remain near a telephone and be prepared to respond to orders from the EOC.

c. Activation: The highest state of readiness during which an emergency has occurred requiring full activation of the EOC and all personnel.

2. Operational Levels

Upon activation, the EOC will function at an operational level as determined by the Director and defined as follows:

a. Phase 1: Operations managed by selected members of the MCDA/OEP staff as alerted by the Director or Senior Duty Officer.

b. Phase II: Operations managed by selected MCDA/OEP staff members augmented by limited Executive Order 144 agency representatives.

b. Phase III: Operations managed by full MCDA/OEP staff members and all assigned Executive Order 144 support representatives.

3. Activation

a. The EOC will operate under "normal readiness conditions" until the Director or Senior Duty Officer directs otherwise.

b. Readiness and Operational levels shall be altered by the Director or Senior Duty Officer based on the classification of the emergency and associated conditions.

ATTACHMENT 1-1

MCDA OPERATIONS STAFF

The Emergency Service's Supervisor (*) will arrange for 24 hour coverage on the basis of the personnel assigned as the situation dictates. Supervisors will set up shifts of 12 hour duration.

EXECUTIVE

Governor and Staff
Secretary of Public Safety and Staff
Director Robert J. Boulay
Deputy Director John L. Lovering**
Secretary Lorraine Manning
Secretary Mary McNamara

OPERATIONS/INTELLIGENCE

Thomas Rodger*
William Creamer
Robert Kelly - Administrative Net 45:36-45:32 & EPS
Edward Fratto, NAWAS
Michael Philbin
Judy Kazunas
Jerry Meister
Bettie Jane Pierce
Kathleen Maguire

COMMUNICATION & MESSAGE CENTER

Royce Sawyer*
Robert Lister
Leo Kowalik, Jr. (Message Controller)
Harold Howe
Mary Wetherbee
Marjorie MacAlpine
Regina Grady
Carol Feeley
Edith Goldsmith
Mary Garvey
Faith Muise
Barbara Studholme
Catherine Fox

PUBLIC INFORMATION

Douglas Forbes
Secretarial assistance will be drawn from Executive Division

ADMINSTRATION

Housekeeping - Supplies - Feeding Dormitories - Security - etc.

Walter Brewer*
Alex Exarnopoulos - Security
Robert Gallerani
Peter Vigliatura
William Meade
George Cook
Roosevelt Harris
Mark Grady

MOBILIZATION ASSIGNEES (IMA)

Ted Rollins
John Bates

EXECUTIVE ORDER 144 STATE ASSIGNEES

(See Attachment 2)

** Deputy Director in the event of a Nuclear Power Station accident will report to the site Emergency Operations Facility (EOF).

ATTACHMENT 1-2 - EXECUTIVE ORDER 144 RESPONSE AGENCIES

In the event of an emergency at Seabrook Nuclear Power Station, representatives of the agencies shown below will be alerted and mobilized as required to augment EOC staff and assist in emergency response activities in accordance with the terms of Executive Order 144.

	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY	RECOVERY	REENTRY
DPH	X	X	X	X	X	X
SP	X	X	X	X	X	X
MNG		XT	XR	X	X	X
DPW		XT	XR	X	X	X
DEQE		XT	XR	X	X	X
DEM		XT	XR	X	X	X
NIAT	X	X	XR	X	X	X
CAP		XT	XR	X	X	X
ARC		XT	XR	X	X	X
FEMA		XT	XR	X	X	X
NWS		XT	XR	X	X	X
MBTA*		XT	XR	X	X	X
USCG*		XT	XR	X		X
Communities & Development			XT	XR	X	
Mental Health			XT	XR		X
Elder Affairs			XT	XR	X	X
EMS			XT	XR		X
Energy			XT	XR	X	X
Corrections			XT	XR		X
Food and Agriculture			XT	XR	X	X
Fish, Wildlife & RV			XT	XR		X
Transportation & Construction			XT	XR		X
Public Utilities			XT	XR		X
Aeronautical			XT	XR		X
RMV			XT	XR		X

NOTE: Listing from DPH to USCG* are the EOC first responders. All others will be notified as needed.

* - Seabrook and Pilgrim NPP only
T - Telephone notification "Standby"
R - Notification to report to EOC

ATTACHMENT 1-3

EOC SECURITY PROCEDURES

1. General

   a. EOC security shall be provided by the Massachusetts State Police upon request of the MCDA/OEP.

   b. The Director of MCDA/OEP shall determine the level of security required based on the operational level of the EOC.

   c. Full EOC security will be required during Phase III operations associated with a Nuclear Power Plant emergency.

2. Procedures

   a. Upon activation of the EOC, the rear gate and ramp door will be secured by MCDA staff.

   b. A State Police officer will be assigned to the front gate to check the identifications of all persons seeking entry to the grounds. The officer will be provided with a list of authorized personnel.

   c. A State Police officer will be stationed in the Reception Area inside the EOC to ensure that only authorized personnel are admitted and to supervise the sign-in procedure.

   d. All persons entering the EOC must sign the "Log-In Sheet" indicating their name, title agency represented and time of arrival.

e. All persons in the EOC must at all times display an official identification card or a numbered visitor pass issued at the time of sign-in.

f. Persons leaving the EOC must sign-out and, if applicable, turn in any visitor pass issued.

g. News Media representatives will be issued visitor passes, and will not be allowed in the Communications Room, Mechanical Room or Operations Room without an escort and the permission of the Director or Senior Duty Officer.

3. Authorized Personnel

The following people are authorized to enter the EOC during an emergency operation in accordance with the procedures outlined above:

1. Governor
2. Governor's Aides
3. Executive Branch Secretariat
4. MCDA/DEF Employees
5. Executive Order 144 Personnel
6. National Guard representatives
7. Federal Employees, including but not necessarily limited to the following agencies:

   Federal Emergency Management Agency
   Nuclear Regulatory Commission
   U.S. Corps of Engineers
   Federal Communications Commission

8. News Media with proper identification

ATTACHMENT 1-4

STATE EOC COMMUNICATIONS

1. Responsibility

   a. Primary responsibility for the operation of the communications system of the EOC rests with the MCDA Communications Officer.

   b. The Communications Officer will advise the Operations Officer of any flaw in the Communications system or message flow system during an operation and take all necessary steps to correct it.

2. General Duties

   a. To ensure all aspects of the communications system are functioning properly.

   b. To ensure the message flow system is working smoothly during an operation.

3. Emergency Telephone System for the "Stand-by" Phones in the Operations Room

   The Operations room at the Framingham Headquarters has, on a "stand-by" basis, twenty-two (22) thirty (30) button Call Directors. These instruments are not normally in use and are activated only during operational periods. Each unit contains:

   1. Twelve (12) Boston exchange lines.
   2. Two (2) Toll free incoming only lines
   3. Three (3) In-house extensions to other offices.
   4. Two (2) Intercom lines between all units.

BOS. ' (Wellesley LINES	TOLL FREE (Incoming Only)
431-1050	1-800-982-6846
1051	6847
431-7930	
7931	IN-HOUSE EXTENSIONS
7932	
7933	220
7934	221
7935	222
7936	
7937	
7938	
7939	

4. Operations Room Dialing Instructions

a. To reach a number in the greater Boston dialing area, use any 431 line and dial 7 digits.

b. To reach a number that is in eastern Massachusetts (Area Code 617) and not in the greater Boston dialing area, dial 1, then 7 digits.

c. To reach a number in western Massachusetts (Area Code 413), dial 1-413, then 7 digits.

d. Eight hundred (800) lines are toll free incoming only.

e. Four-Three-One (431) lines are Wellesley exchange and in the greater Boston group.

5. Operation Center Procedures for Implementing Tool Free (800 Calls)

a. Toll free (800) numbers will be given to the public by the Public Information Officer only with the concurrence of the Operation Officer or Director, MCDA. Use of the 800 system will normally be reserved for Emergency situations where public inquiry and need must be satisfied. This system can be utilized at any time as long as sufficient personnel are available.

b. Prior to public dissemination of the 800 number:

1. One operator should be dedicated for each number available to the public.

2. A Public Information Officer (PIO) should be on duty.

3. A standard information sheet prepared by the Public Information Officer must be provided to each operator with specific information/ directions to be given to the public.

4. Eight hundred (800) numbers are rotational. Only the first number (800-982-6846) need be made available for both 800 extensions to receive calls. This system will not rotate calls from the last number back to a lower number in the sequence.

c. Telephone repair service repair numbers are available in the Communications room as well as at the switchboard.

6. Switchboard Operations

a. The Communications Officer shall assume the responsibility for all switchboard operations including staffing during any operational situation.

b. The Communications Officer will decide when the switchboard should be operational on "night" communications.

c. If the switchboard is to be operational the Communications Officer shall draw upon the MCDA clerical staff for operational staffing.

d. Emergency Night Line Telephone Service Procedure for the Operations Room

If the switchboard operator is not on duty, the night lines which ordinarily go to the security room telephone, may be transferred into the Operations Room. (Ext. 220, 221 and 222)

To do this, the Operations Room telephone system must be turned ON by an authorized MCDA representative. The decision to use the system for outgoing calls, again, is the responsibility of the authorized MCDA representative.

ATTACHMENT 1-5

EOC STAFF FEEDING PROCEDURES

A. Responsibilities

1. Throughout most operations, individual staff members are generally responsible for obtaining their own food.

2. If time or circumstances do not permit staff members to leave the EOC during an operation, the Director or Senior Duty Officer will make arrangements to obtain food from an outside vendor, the local chapter of the American Red Cross or the National Guard.

B. General

1. During operational hours, the Director, Senior Duty Officer or departmental supervisors should allow staff members to leave the EOC to obtain food, if time permits.

2. If circumstances do not permit staff members to obtain their own food, arrangements will have to be made to bring food into the EOC by private vendors, the Red Cross or National Guard.

3. Massachusetts Civil Defense has the capability of receiving immediate emergency food supplies from local sources.

ATTACHMENT 1-6

EOC MECHANICAL AND UTILITY ROOM PROCEDURES

1. Responsibility

The Maintenance Engineer of the Massachusetts Civil Agency is responsible for the operation of the physical plant. In the absence of the Maintenance Engineer, the Carpenter is responsible for this function followed by the Electric Station Operator and Guards. Under no circumstances should an inexperienced person attempt to operate this machinery UNLESS there is no possibility of trained personnel being able to get to the EOC in a reasonable length of time.

2. General Duties

a. All equipment operates automatically at all times. Should there be a power failure, the generators will turn on automatically.

b. If any equipment fails during normal work hours, the Maintenance Engineer or Carpenter are generally available to alleviate any problem.

c. During off-duty hours, Guards are trained to alleviate any potential problems. If Guards cannot solve a mechanical problem, they will contact the Maintenance Engineer.

3. Emergency Procedures for Operating Essential Mechanical Room Equipment

A. Manual Generator Operation with Loss of Utility (EDISON) Power

1. Check that the well pump switch is in the LOCAL or REMOTE position.

2. Check the position of the TRANSFER SWITCH located on the GEN 2 panel.

3. Start only those generator(s) that are selected by the TRANSFER SWITCH.

4. Start the generator(s) by turning the selector switch on the side panel of the generator to the MANUAL position.

5. Record the operating characteristics of the generator(s) in the Emergency Generator Test Log.

B. To Restore Utility (EDISON) Power

1. Ascertain that the utility power is available by noting that the lamp on the panel marked GEN 3 is ON.

2. Check that the MAIN BREAKER is closed. - If not, close it by turning the MAIN BREAKER handle to CLOSE.

3. Check that the GENERATOR TRANSFER BREAKER is OPEN. - If not, open it by pushing the red button marked TRIP on this panel.

4. Check that the UTILITY FEED BREAKER is CLOSED. - If not, close it by pushing the black button marked CLOSE on this panel.

5. Turn OFF the generator(s) by selecting the OFF position on the selector switch on the side panel of the Generator. If the Generators are in the AUTOMATIC position, this step is unnecessary.

6. Check ALARMS and RESETS in Tank Room.

C. Fan System

After a temporary or even a momentary loss of power, the fan system will normally end up in the emergency mode.

To correct this condition and return the system to normal, do the following:

1. Press the PUSH FOR NORMAL switch located on the Honeywell control panel.

2. Turn OFF any emergency fans that may be ON.

3. a. Start S1A and R1A or S1B and R1B. If you have difficulty in starting these, then shut them OFF and start S1B and R1B.

   b. If there is still difficulty, go to the motor control panel for the associated fan and turn the HAND-OFF-AUTO switch to the HAND position, wait thirty (30) seconds and then turn it to the AUTO position.

c. If you still have trouble check the RESET control on top of the chanber for the supply fans.

4. If all of the above fails, leave the fan control switch on the motor control panel in the HAND position.

ATTACHMENT 1-7

MCDA/OEP EOC OPERATIONAL CHECKLIST

1. Upon activation of the State EOC, the following actions will be taken to insure appropriate response:

A: Confirm the following notifications:

1. SEABROOK NUCLEAR POWER STATION NOTIFIES STATE POLICE FRAMINGHAM: EVENT CLASSIFICATION: _____

TIME RECEIVED/VERIFIED: _____

2. DPH NOTIFIED: _____

3. EPZ COMMUNITIES NOTIFIED: _____

4. AREA I DIRECTOR: _____

5. MCDA/OEP DIRECTOR: _____

6. DEPUTY DIRECTOR: _____

7. EOPS:

a. SECRETARY OF PUBLIC SAFETY _____

b. UNDERSECRETARY OF PUBLIC SAFETY _____

c. GOVERNOR _____

8. FEMA: _____

B. Eoc Activation

1. NOTIFICATION PROCEDURES COMPLETED _____

2. EOC STAFF & E.O. 144 FAN-OUT INITIATED _____

COMPLETED _____

3. AREA I EOC ACTIVATED _____

4. ACTIVATE COMMUNICATIONS NETWORK _____

5. ESTABLISH COMMUNICATION WITH NEW HAMPSHIRE _____

6. BRIEF EOC STAFF _____

7. REVIEW EOC SECURITY _____

8. PREPARE FOR 24-HOUR OPERATIONS _____

9. DISPATCH MCDA REPRESENTATIVE TO EOF _____

10. DISPATCH MCDA REPRESENTATIVE TO MEDIA CENTER _____

11. DISPATCH COMPENSATORY RESPONSE PLAN COORDINATOR AND STAFF TO THE AREA I EOC _____

12. PREPARE TO ISSUE PUBLIC NOTIFICATIONS _____

13. PREPARE TO ACTIVATE EVACUATION/ SHELTERING PROCEDURES _____

14. PREPARE TO COORDINATE PROTECTIVE ACTIONS _____

15. PREPARE TO INITIATE TRAFFIC/ACCESS CONTROL PROCEDURES _____

16. AS REQUIRED, IMPLEMENT ITEMS 12, 13, 14, & 15 _____

ATTACHMENT 1-8 - EOC LOCATION MAP

* Entrance also may be gained by Route 126 to Guadacanal Road into rear of State Police Academy to adjacent drive to MCDA.

EXHIBIT A-5, ATTACHMENT 2
WARNING AND PROTECTIVE ACTIONS
FOR SEABROOK AREA SUMMER BEACH POPULATIONS
IN MASSACHUSETTS

A. General Considerations

1. Precautionary actions affecting seasonal beach populations may be warranted at an early stage of an emergency before protective actions for the general population are warranted.

2. Radiological assessment data may not be available or useful when considering early precautionary action decisions for seasonal beach populations.

3. Prognosis of deteriorating plant conditions may compel implementation of precautionary actions, without consideration of PAG ranges, when seasonal beach populations are potentially affected.

4. Precautionary actions for seasonal beach populations would include:

   a. Closing beaches and other recreational facilities that attract large seasonal populations and which are in close proximity to the plant or impact heavily on evacuation clear times for the EPZ.

   b. Implementation of access and traffic control at roadway points leading to these affected areas to monitor traffic and to advise people of actions taken.

   c. Issuance of public announcements of actions taken through normal media channels.

   d. Continued monitoring of traffic flow and local conditions in affected areas.

5. Precautionary actions should be considered for the period May 15 through September 15.

B. Precautionary and Protective Actions by Emergency Classification Level

1. Alert

a. Initiating Conditions

(1) Wind direction is toward the beach.

(2) Plant conditions as determined by plant personnel indicate that a major plant system is degrading.

b. Actions

(1) Upon instruction from MCDA/OEP Framingham, the Area I Director shall notify the Civil Defense Directors of the towns of Salisbury, Newburyport and Newbury to close beaches under their jurisdiction. This includes the public beach in Salisbury the yacht basin in Newburyport, and parts of Plum Island in Newbury.

(2) MCDA/OEP Framingham will order the Massachusetts Department of Environmental Management to close State beaches in Salisbury State Park and Plum Island State Park.

(3) MCDA/OEP Framingham will request that the U.S. Department of the Interior, Fish and Wildlife Service. close the Parker River Wildlife Refuge on Plum Island.

(4a) The Civil Defense Director, Salisbury, will instruct the Police Department to institute special beach area patrols equipped with loudspeakers to advise all beach

users to vacate the beaches and return to their lodgings in the area, or leave the area in their automobiles if they are day users of the beaches.

(4b) The Civil Defense Director, Newburyport, will instruct the police department, and Harbormaster, to institute patrols in the yacht basin area of Newburyport and boating facilities along the Merrimac River to advise water and beach users to leave the area and return to their lodging or homes.

(4c) The Civil Defense Director, Newbury, will instruct the Police Department to institute patrols on the part of Plum Island under city jurisdiction and advise all beach users to vacate the beaches and return either to their lodgings in th area, or leave the area in their automobiles if they are day users of the beaches.

(5) The Massachusetts Department of Environmental Management will institute patrols at Salisbury State Park and Plum Island State Park to advise beach users to leave these ares for either their lodging or homes.

(6) The U.S.D.I., F.W. S., will institute patrols at the Parker River Wildlife Refuge to advise facility users to leave the park for their lodgings or homes.

NOTE: All patrols will continue their activities until the beach areas are cleared.

(7) The Director MCDA/OEP Framingham, or his designee, will instruct the State Police, Troop A, to staff access control points to facilitate movement of egressing traffic at those locations listed below where assistance is needed at the local level.

(8) The Salisbury Police Department will establish access and traffic control points at the following locations, as per section II.-I of the local plan;

Salisbury Beach:

Routes: Note: Route 1-A should be blocked at the junction of N.H. Route 86 to prohibit northbound traffic on Route 1-A by residents and transients leaving the Beach area.

1) Evacuating traffic should proceed along Route 1-A South from the vicinity of Seabrook Beach on the Mass.-N.H. Line and then westerly on Route 1-A, the State Beach Road, to the junction of Route 1-A and LaFayette Road, U.S. Route 1. Turn left on Route 1 & 1-A and proceed south to Peabody or as directed, to the junction of Route 110 West to I-95 South and then south to Peabody.

2) Traffic from the Salisbury Beach State Reservation should proceed northward on the Beach Access Road to U.S. Route 1-A, turn left and drive westerly on Route 1-A, the State Beach Road, to the junction of Route 1-A and LaFayette Road, U.S. 1. Turn left on Route 1 & 1-A and proceed south to Peabody or, as directed, to the junction of Route 110 West to I-95 South and then south to Peabody.

Access Control Points:

1. U.S. Route 1-A/N.H. Route 286
2. U.S. Route 1-A/State Beach Road at Salisbury Beach.
3. U.S. Route 1-A/Beach Access Road/County Roac
4. U.S. Route 1-A/Ferry Road
5. U.S. Route 1-A/LaFayette Road (U.S. 1 & 1A)

6. U.S. Route 1 & 1-A/Route 110

7. Newburyport Exits, U.S. 1 & 1-A

8. Route 110/I-95 Interchange

NOTE: Traffic and Access Control Points are subject to revision based on information provided by a new Evacuation Time Estimate.

(9) The Newburyport Police Department will establish access and traffic control points at the following locations, as per Section II-I of the local plan:

Intersection #1: (Between Memorial Day and Labor Day) Water Street and Rolfe Lane - Maintain continuous traffic flow on Water Street from Newburyport Center and Plum Island onto Rolfe Lane. Give priority to emergency vehicles in all directions.

Intersection #2: State Street and Newburyport Turnpike (Route 1) - Maintain continuous traffic flow on State Street coming out of Newburyport Center. Direct traffic south onto Route 1 or west onto Parker Street. Give priority to emergency vehicles in all directions.

NOTE: TRAFFIC AND ACCESS CONTROL POINTS ARE SUBJECT TO REVISION BASED ON NEW INFORMATION PROVIDED BY A NEW EVACUATION TIME ESTIMATE.

(10) The Newbury Police Department will establish access and traffic control points at the following locations, as per Section II-I of the local plan:

Plum Island:

Route: Proceed to Old Point Road, Sunset Drive and Plum Island Turnpike. Take Plum Island Turnpike West to Ocean Avenue/Rolfe Lane. Turn left on Ocean Avenue/Rolfe Lane, proceed south to junction of Route 1-A. Turn left, and continue south on Route 1-A to Peabody.

Access Control Points: 1. Old Point Road/Sunset Drive/Plum Island Turnpike

2. Plum Island Turnpike/Ocean Avenue-Rolfe Lane

3. Rolfe Lane/Route 1-A

(11) The Director MCDA/OEP Framingham, will coordinate through his PIO the issuance of the following news release from the Media Center at the Newington town Hall:

"THERE IS CURRENTLY AN ALERT IN PROGRESS AT THE SEABROOK STATION. THE PURPOSE OF DECLARING AN ALERT IS TO ASSURE THAT EMERGENCY WORKERS ARE AVAILABLE TO RESPOND IF THE SITUATION BECOMES MORE SERIOUS. THERE IS NO PRESENT DANGER TO PUBLIC HEALTH AND SAFETY. THE COMMONWEALTH OF MASSACHUSETTS AFTER CONSULTATION WITH UTILITY PERSONNEL, HAS TAKEN THE FOLLOWING PRECAUTIONARY MEASURE TO PROTECT PUBLIC HEALTH AND SAFETY IN THE EVENT THAT PROTECTIVE ACTIONS FOR THE PUBLIC MAY BECOME NECESSARY. THIS PRECAUTIONARY MEASURES INCLUDES THE CLOSING AND RESTRICTING OF ACCESS TO ALL BEACH AREAS EXTENDING FROM SALISBURY TO PLUM ISLAND. THIS INCLUDES STATE BEACHES AND THE PARKER RIVER WILDLIFE REFUGE. NON-RESIDENTS ARE ADVISED TO REFRAIN FROM TRAVEL TO SALISBURY, NEWBURY PORT, AND BEACH AREAS OF NEWBURY. THERE IS NO DANGER FROM RADIATION, AND THERE IS NO REASON FOR THE PUBLIC TO TAKE ANY ADDITIONAL ACTIONS AT THIS TIME."

2. Site Area Emergency with Stable Plant Conditions

a. Initiating Conditions

(1) Wind direction is toward the beach.

(2) Plant conditions are stable without indication of further degradation.

b. Actions

(1) Upon instruction from MCDA/OEP Framingham, the Area I Director shall verify that the Civil Defense Directors of the towns of Salisbury, Newburyport and Newbury have closed the beaches under their jurisdiction. This includes the public beach in Salisbury, the yacht basin in Newburyport, and parts of Plum Island in Newbury.

(2) MCDA/OEP Framingham will request the Massachusetts Department of Environmental Management to close State beaches in Salisbury State Park and Plum Island State Park.

(3) MCDA/OEP Framingham will request that the U.S. Department of the Interior, Fish and Wildlife Service, close the Parker River Wildlife Refuge on Plum Island.

(4a) The Civil Defense Director, Salisbury, will instruct the Police Department to institute special beach area patrols equipped with loudspeakers to advise all beach users to vacate the beaches and return to their lodgings in the area, or leave the area in their automobiles if they are day users of the beaches.

(4b) The Civil Defense Director, Newburyport, will instruct the police department, and Harbormaster, to institute patrols in the yacht basin area of Newburyport and boating facilities along the Merrimac River to advise water and beach users to leave the area and return to their lodging or homes.

(4c) The Civil Defense Director, Newbury, will instruct the Police Department to institute patrols on the part of Plum Island under city jurisdiction and advise all beach users to vacate the beaches and return either to their lodgings in th area, or leave the area in their automobiles if they are day users of the beaches.

(5) The Massachusetts Department of Environmental Management will institute patrols at Salisbury State Park and Plum Island State Park to advise beach users to leave these ares for either their lodging or homes.

(6) The U.S.D.I., F.W. S., will institute patrols at the Parker River Wildlife Refuge to advise facility users to leave the park for their lodgings or homes.

NOTE: All patrols will continue their activities until the beach areas are cleared.

(7) The Director MCDA/OEP Framingham, or his designee, will request the State Police, Troop A, to staff access control points to facilitate movement of egressing traffic at those locations listed below where assistance is needed at the local level.

(8) The Salisbury Police Department will establish access and traffic control points to facilitate egressing traffic movements and to restrict access on the part of non-residents of Salisbury at the following locations:

Salisbury Beach:

Routes: Note: Route 1-A should be blocked at the junction of N.H. Route 86 to prohibit northbound traffic on Route 1-A by residents and transients leaving the Beach area.

1) Evacuating traffic should proceed along Route 1-A South from the vicinity of Seabrook Beach on the Mass.-N.H. Line and then westerly on Route 1-A, the State Beach Road, to the junction of Route 1-A and LaFayette Road, U.S. Route 1. Turn left on Route 1 & 1-A and proceed south to Peabody or as directed, to the junction of Route 110 West to I-95 South and then south to Peabody.

2) Traffic from the Salisbury Beach State Reservation should proceed northward on the Beach Access Road to U.S. Route 1-A, turn left and drive westerly on Route 1-A, the State Beach Road, to the junction of Route 1-A and LaFayette Road, U.S. 1. Turn left on Route 1 & 1-A and proceed south to Peabody or, as directed, to the junction of Route 110 West to I-95 South and then south to Peabody.

Access Control Points:

1. U.S. Route 1-A/N.H. Route 86
2. U.S. Route 1-A/State Beach Road at Salisbury Beach.
3. U.S. Route 1-A/Beach Access Road/County Road
4. U.S. Route 1-A/Ferry Road
5. U.S. Route 1-A/LaFayette Road (U.S. 1 & 1A)
6. U.S. Route 1 & 1-A/Route 110
7. Newburyport Exits, U.S. 1 & 1-A
8. Route 110/I-95 Interchange

NOTE: Traffic and Access Control Points are subject to revision based on information provided by a new Evacuation Time Estimate.

(9) The Newburyport Police Department will establish access and traffic control points to facilitate egressing traffic movement and to restrict access on the part of non-residents of Newburyport at the following locations:

Intersection #1: (Between Memorial Day and Labor Day) Water Street and Rolfe Lane - Maintain continuous traffic flow on Water Street from Newburyport Center and Plum Island onto Rolfe Lane. Give priority to emergency vehicles in all directions.

Intersection #2: State Street and Newburyport Turnpike (Route 1) - Maintain continuous traffic flow on State Street coming out of Newburyport Center. Direct traffic south onto Route 1 or west onto Parker Street. Give priority to emergency vehicles in all directions.

NOTE: TRAFFIC AND ACCESS CONTROL POINTS ARE SUBJECT TO REVISION BASED ON NEW INFORMATION PROVIDED BY A NEW EVACUATION TIME ESTIMATE.

(10) The Newbury Police Department will establish access and traffic control points to facilitiate egressing traffic movement and to restrict access on the part of non-residents of Newbury at the following locations:

Plum Island:

Route: Proceed to Old Point Road, Sunset Drive and Plum Island Turnpike. Take Plum Island Turnpike West to Ocean Avenue/Rolfe Lane. Turn left on Ocean Avenue/Rolfe Lane, proceed south to junction of Route 1-A. Turn left, and continue south on Route 1-A to Peabody.

Access Control Points: 1. Old Point Road/Sunset Drive/Plum Island Turnpike

2. Plum Island Turnpike/Ocean Avenue-Rolfe Lane

3. Rolfe Lane/Route 1-A

(11) The Director, MCDA/OEP Framingham, with the assistance of its PIO will:

(a) Provide the following EBS message to the Media Center at Newington Town Hall.

(b) Coordinate time for broadcast of the EBS message by WCGY with activation of sirens.

(c) Coordinate activation of sirens and EBS message broadcast with the Director, N.H.C.D.A.

(d) Instruct Area I MCDA/OEP to advise all local EOCs of EBS message and time of siren activation.

(12) Authorize the activation of the Massachusetts EPZ sirens and the release of the following EBS Message:

THIS IS AN IMPORTANT EMERGENCY BULLETIN FOR PERSONS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION. A SITE AREA EMERGENCY HAS BEEN DECLARED AT THE SEABROOK STATION. MASSACHUSETTS CIVIL DEFENSE AND PUBLIC HEALTH PERSONNEL ARE ASSESSING THE SITUATION.

AS A PRECAUTION, THE COMMONWEALTH OF MASSACHUSETTS HAS CLOSED ALL BEACH AREAS EXTENDING FROM SALIBURY TO PLUM ISLAND. THIS INCLUDES STATE BEACHES AND THE PARKER RIVER WILDLIFE REFUGE.

NON-RESIDENTS OF SALISBURY, NEWBURYPORT, AND NEWBURY ARE ADVISED TO REFRAIN FROM TRAVEL TO THESE AREAS. ONLY FULL-TIME RESIDENTS AND THOSE PROVIDING TRANSPORTATION FOR BEACH AREA VISITORS WILL BE ALLOWED ACCESS TO THE BEACHES.

THERE IS NO DANGER AT THIS TIME FROM RADIATION AND THERE IS NO REASON FOR THE RESIDENT POPULATION OF THESE AREAS TO TAKE ANY ACTIONS AT THIS TIME.

PLEASE STAY TUNED TO THIS STATION FOR FURTHER INFORMATION AND INSTRUCTIONS.

3. Site Area Emergency with Degrading Plant Conditions

a. Initiating Conditions

(1) All meteorological conditions

(2) Prognosis of plant status indicates degradation of a major plant system.

b. Actions

(1) Continue implementation of all action activities in steps (1) thru (11) of the previous section.

(2) If the beaches are essentially cleared, repeat the broadcast of the EBS message for Site Area Emergency with Stable Plant Conditions.

(3) If the beaches are not yet cleared, then broadcast the following EBS message which specifically calls for all non-residents to leave the area, including those with hotal/motel accommodations.

THIS IS AN IMPORTANT EMERGENCY BULLETIN FOR PERSONS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION. A SITE AREA EMERGENCY HAS BEEN DECLARED AT THE SEABROOK STATION. THIS INDICATES AN ACTUAL OR POTENTIAL FAILURE OF SOME PLANT SAFETY SYSTEMS.

MASSACHUSETTS CIVIL DEFENSE AND PUBLIC HEALTH PERSONNEL ARE ASSESSING THE SITUATION. THE GOVERNOR OF MASSACHUSETTS HAS DECLARED A STATE OF EMERGENCY AND ALL BEACHES AND PARKS EXTENDING ALONG THE COAST FROM SALISBURY TO PLUM ISLAND HAVE BEEN CLOSED.

ALL NON-RESIDENTS OF SALISBURY, NEWBURYPORT, AND NEWBURY, INCLUDING THOSE WITH HOTEL ACCOMMODATIONS, ARE ADVISED TO LEAVE THE AREA, OR REFRAIN FROM TRAVELING TO THESE AREAS. ACCESS TO SALISBURY, NEWBURYPORT, AND NEWBURY WILL BE RESTRICTED TO FULL TIME RESIDENTS.

AT THIS TIME, THERE IS NO DANGER TO THE PUBLIC FROM RADIATION. PLEASE STAY TUNED TO THIS STATION FOR FURTHER INFORMATION AND INSTRUCTIONS.

NOTE: REPEAT THIS MESSAGE IMMEDIATELY AFTER INITIAL BROADCAST, THEN CONTINUE TO REPEAT EVERY 15 MINUTES UNTIL INSTRUCTED TO STOP.

4. General Emergency

a. Initiating Conditions

(1) All conditions

b. Actions

(1) Continue implementation of all action activities in steps (1) thru (11) of the previous section.

(2) If the beaches are essentially cleared, repeat the broadcast of the EBS message for Site Area Emergency with Stable Plant Conditions.

(3) If the beaches are not yet cleared (fast breaking situation), then evacuate the transient population of Salisbury along with the transient population in the Massachusetts EPZ seacoast areas. The following EBS message should be broadcast:

NOTE: IMPLEMENT THE MASSACHUSETTS HIGHWAY TRAFFIC AND ACCESS CONTROL PLAN, ACTIVATE RECEPTION CENTER AND SUFFICIENT MASS CARE FACILITIES, AS FOR ANY PROTECTIVE ACTION SITUATION REQUIRING EVACUATION.

THIS IS AN IMPORTANT EMERGENCY BULLETIN FOR PERSONS IN THE VICINITY OF THE SEABROOK NUCLEAR POWER STATION.

A GENERAL EMERGENCY IS IN EFFECT AT THE SEABROOK STATION. THIS MEANS THAT PLANT CONDITIONS ARE AFFECTING THE LEVEL OF SAFETY OF THE PLANT AND COULD AFFECT THE LEVEL OF SAFETY OUTSIDE OF THE PLANT.

STATE OF MASSACHUSETTS CIVIL DEFENSE AND PUBLIC HEALTH PERSONNEL ARE ASSESSING THE SITUATION.

THE GOVERNOR OF MASSACHUSETTS HAS DECLARED A STATE OF EMERGENCY, AND RECOMMENDS THE FOLLOWING PROTECTIVE ACTIONS TO THE PUBLIC:

(1) ALL PERSONS WORKING AND VISITING ALONG BEACHES AREAS IN THE TOWNS OF SALISBURY, NEWBURYPORT, AND NEWBURY ARE ADVISED TO LEAVE THE AREA. BEACHES IN THESE AREAS HAVE BEEN CLOSED AS A PRECAUTION, AND ALL NON-RESIDENTS ARE BEING DENIED ACCESS TO THESE AREAS.

FOR ALL PERSONS FROM SALISBURY, OR OTHER AFFECTED BEACH AREAS IN MASSACHUSETTS, WHO REQUIRE ASSISTANCE OR TEMPORARY SHELTER, A RECEPTION CENTER HAS BEEN OPENED AT THE FOLLOWING LOCATION:

_____

_____

_____

PLEASE STAY TUNED TO THIS STATION FOR FURTHER INFORMATION AND INSTRUCTIONS.

NOTE: REPEAT THIS MESSAGE IMMEDIATELY AFTER INITIAL BROADCAST, THEN CONTINUE TO REPEAT EVERY 15 MINUTES UNTIL INSTRUCTED TO STOP.

EXHIBIT A-6

SUPPORTING DOCUMENTS LIST

Massachusetts Comprehensive Emergency Response Plan

Massachusetts Emergency Broadcast System Operational Plan

Statewide Emergency Medical Radio Frequency Plan

Nuclear Incident Advisory Team Handbook

Massachusetts Civil Defense Agency Emergency Operating Center Operations Plan

Massachusetts State Police Radiological Emergency Support Plans (Appendix 1 of Area I Plan)

Massachusetts Highway Access and Traffic Control Plan for Seabrook Nuclear Power Station (Appendix 2 of Area I Plan)

Massachusetts Department of Public Works Emergency Response Plan (Appendix 3 of Area I Plan)

Massachusetts Civil Defense Agency Area I Radiological Emergency Response Plan for Seabrook Nuclear Power Station

Massachusetts Civil Defense Agency Area II Radiological Emergency Response Plan for Pilgrim Nuclear Power Station

Massachusetts Civil Defense Agency Area IV Radiological Emergency Response Plan for Yankee Rowe Atomic Power Station and Vermont Yankee Nuclear Power Station

Executive Order #144 Agency Procedures

Plume EPZ Plans

Host Community Plans

EXHIBIT A-7
AGREEMENTS

A7.1 REGIONAL ASSISTANCE COMPACTS

Massachusetts has agreements with the five other New England states through the following agreements.

New England Radiological Health Compact

The New England Radiological Health Compact provides for assistance from the state public health agencies of each of the six New England states in accordance with approvals by the legislatures and governors of each of the party states, and as outlined in the New England Interstate Radiation Incident Plan prepared by the New England Radiological Health Committee.

Interstate Civil Defense Compact

The Interstate Civil Defense agencies provides for mutual aid among the state civil defense agencies of the six New England states.

The New England State Police Assistance Compact

The New England State Police Assistance Compact provides for mutual aid among the State Police agencies of the six New England states.

A7.2 LETTERS OF AGREEMENT

Letters of agreement between the Commonwealth of Massachusetts and support organizations are on file with the Massachusetts Civil Defense Agency and Office of Emergency Preparedness. Refer to local plans for letters of agreement with individual communities. These agreements address may types

of assistance covering many types of emergencies. The following is a summary of signed agreements with the Commonwealth which Address themselves specifically to support to be provided during radiological emergencies at nuclear power stations:

American Red Cross

The "Statement of Understanding between the State of Massachusetts and the American Red Cross" outlines the responsibilities of the American Red Cross in responding to an emergency as a result of an accident at a nuclear facility.

Nuclear Power Plants

Letters of agreement between nuclear power plants and the EPZ states establish conditions regarding radiological emergency response planning, notification and response should an event at a nuclear power plant require Radiological Emergency Response Plan Activation.

United States Coast Guard

The letter of agreement between the Commonwealth and the United States Coast Guard addresses support to be provided in response to emergencies at the Pilgrim Nuclear Power Station or Seabrook Station.

National Oceanic and Atmospheric Administration (NOAA)

The letter of agreement between the EPZ states of Vermont Yankee, Yankee Nuclear Power Plants and the National Oceanic and Atmospheric Administration addresses the agreement for the operation of a NOAA weather radio transmitter to alert the public living within the EPZ of Vermont Yankee and Yankee nuclear power stations.

Laboratories

Letters of agreement between the nuclear power plants and the EPZ states provide for the use of the Yankee Atomic Laboratory in Westboro, Massachusetts. In addition, a letter of agreement between the University of Lowell and the State of Massachusetts provides for the use of their radiation laboratory.

Waste Disposal

The letter of agreement between Seabrook Station and the State of Massachusetts provides for the disposal or decontamination of contaminated materials or equipment resulting from any clean-up actions due to a release from Seabrook Station.

Massachusetts National Guard

A memorandum of agreement between the MCDA/OEP and the Massachusetts National Guard provides for use of certain guard resources in support of emergency response activities involving Seabrook Station once the Governor has declared a state of emergency exists.

EXHIBIT A-8
CROSS-REFERENCE
NUREG-0654/FEMA-REP-1 CRITERIA
VERSUS
MASSACHUSETTS RADIOLOGICAL EMERGENCY RESPONSE PLAN

NUREG-0654 ELEMENT		STATE PLAN SECTIONS
A.	Assignment of Responsibility	
	1.a	A4, A3
	1.b	A3.1, A3.2, A3.3, A4.3
	1.c	Figures A3-1, A3-2, A3-3
	1.d	A3.2, Exhibit A-5 Section 3.1
	1.e	A3.3.2, A3.3.3, A3.3.4, A4.1, A4.3.2
	2.a	A3.1, A3.2, A3.3, A3.4, A3.5 Table A-1, A-5, A-6, A-7, A-8, A-9, A-10, A-11
	2.b	A1.2, B6.1
	3.	A 3.8, Exhibit A7
	4.	A3.3.2, A3.3.4, A4.1, A4.3.2 Exhibit A-5, Att.1 NIAT Handbook
B.	Onsite Emergency Organization (Not applicable to State or local plans)	
C.	Emergency Response Support and Resources	
	1.a	A3.2.2, A3.2.3, A3.6.3
	1.b	A3.6.3, A4.4; NIAT Handbook
	1.c	A3.6.3.1, A4.3.3, A4.4, Exhibits 2 through 5; NIAT Handbook

NUREG-0654 ELEMENT		STATE PLAN SECTIONS
	2.a	A3.3.3.2, A4.3.2, A4.3.3, A5.2, A7.1.2, A7.1.3, A7.2.3, A7.2.4
	3.	A3.3.2.4, A7.2.5; NIAT Handbook, Appendix D
	4.	A3.6, A7.2.3, A7.2.5, NIAT Handbook, Appendix I
D.	Emergency Classification System	
	3.	A2.10
	4.	A5, A6, Exhitibt A-5, Att.1 EBS Manual
E.	Notification Methods and Procedures	
	1.	A6.1, A 6.2; Exhibit A-5, Section 5; MSP Notification Procedures; Exhibit A-5, Att.1; NIAT Handbook
	2.	A6.1, A6.2, A6.3 Exhibit A-5, Att.1
	5.	A6.4, A6.5; MA EBS Operational Plan; MSP Plan (Area I)
	6.	A3.5, A6.5, A12.5; Exhibit A-5, Section 3.1, 3.3; MA EBS Operational Plan; MSP Plan
	7.	A12.5, Exhibits A12-1 through A12-7; MA EBS Operational Plan
F.	Emergency Communications	
	1.a	A3.3.2.3, A3.4, Table 3-2, 6-2

NUREG-0654 ELEMENT		STATE PLAN SECTIONS
	1.b	A3.4.4, Table 3-2; Exhibit A-5, Section 3.2
	1.c	A3.3.1.3 A3.4.2, A3.4.3, A4.3.2, A6.3.1; Table 3-2
	1.d	A3.4.2, A3.4.3, Table 3-2
	1.e	A4.3, A6.3; Figure A6-1, Exhibit A-5, Att.1, NIAT Handbook
	2.	A3.4.6
	3.	A4.3.2, B4.1.1
G.	Public Education and Information	
	1.	B2
	2.	B2
	3.a	A3.3.3.3, A12.1; Exhibit A-5 Section 12.1, 12.2.3
	4.a	A4.3.1, Table 4-1 Section 12.2.3, Exhibit A-5 Section 12.1
	4.b	A12.2.3, A12.3 Exhibit A-5 Section 12.1
	4.c	A12.4
	5.	B2.1, B2.2, B3.1
H.	Emergency Facilities and Equipment	
	3.	A3.3
	4.	A3.3.4, A3.3.5
	7.	A9.7, A9.2.1.1, A9.2.1.2
	10.	B5.2
	11.	NIAT Handbook
	12.	A7.5, A7.6; NIAT Handbook

NUREG-0654 ELEMENT		STATE PLAN SECTIONS
I.	Accident Assessment	
	7.	A7.5; Exhibit A-5, Section 7.0; NIAT Handbook
	8.	A7; NIAT Handbook
	9.	A7; NIAT Handbook
	10.	A7.7, A7.8; NIAT Handbook
	11.	A7.1.5, A7.5.2; NIAT Handbook
J.	Protective Response	
	9.	A2.5, A2.6, A2.7, A2.8, A2.10, A7.8, A8; Table A2-1
	10.a	Exhibit A-5, Figures EX5-2, EX5-4
	10.b	Exhibit A-5, Table 3, Figure EX5-2
	10.c	A3.5, A6.4, A6.5 Exhibit A-5, Section 3.3 EBS Operational Plan
	10.d	A8.3
	10.e	A9.1.1, A9.3.2, A9.5; NAIT Handbook
	10.f	A9.5; NIAT Handbook
	10.g	A8.3; Exhibit 5, Section 8; MCDA Procedures

NUREG-0654 ELEMENT		STATE PLAN SECTIONS
	10.h	A10.2; Exhibit 5, Section 8, Tables 5 and 6
	10.i	KLD Evacuation Time Study Update
	10.j	A8.4; Exhibit 5, Section 8
	10.k	Area I Plan, DPW Procedure, National Guard Procedure
	10.l	Exhibit A.5; Section 2.7, Table 4
	10.m	A2.6.2, A2.8.1, A7.8, A8; Exhibit A-5, Att.2
J.	11.	A2.8.2, A8.4, Table A2-2, A2-4, NIAT Handbook, Appendix D
	12.	A9.7.2.2, A10.2.1; Exhibit 5, Section 10.2; NIAT Handbook
K.	Radiological Exposure Control	
	3.a	A9.1.2, A9.2, A9.7; NIAT Handbook
	3.b	A9.2.1.1, A9.2.1.3, A9.2.2, A9.6; NIAT Handbook
	4.	A9.1.1., A9.3, A9.3.1, A9.3.2; NIAT Handbook
	5.a	A9.7, A9.8.1; NIAT Handbook
	5.b	A9.1, A9.7, A9.8; NIAT Handbook

NUREG-0654 ELEMENT		STATE PLAN SECTIONS
L.	Medical and Public Health Support	
	1.	A10.1.1, A10.1.2 Table 10-1; Exhibit 5, Section 10.1, Table 7
	3.	A10.1.2, Exhibit A-5, Section 10J, Table 7, 10.1
	4.	A10.1.1; Exhibit 5, 10.1
M.	Recovery and Reentry Planning and Post-Accident Operations	
	1.	A2.9, A11.1
	3.	A11.2; MCERP, Part two
	4.	A11.1.2
N	Exercises and Drills	
	1.a	B4.2
	1.b	B4.2
	2.a	B4.1.1
	2.c	B4.1.2
	2.d	B4.1.3
	2.e	B4.1.3
	3.	B4.2.1
	4.	B4.2.2
	5.	B4.2.2
O.	Radiological Emergency Response Training	
	1.	B3
	1.b	B3
	4.	B3
	5.	B3

NUREG-0654 ELEMENT	STATE PLAN SECTIONS
P. Responsibility for the Planning Effort	
1.	B3.1
2.	B6.1
3.	B6.1
4.	B6.2
5.	B6.2, B6.3
6.	Exhibit A-6
7.	Exhibit A-9
8.	Table of Contents
10.	B4.1.1 B6.2

EXHIBIT A-9

IMPLEMENTING PROCEDURES

Procedure	Plan Section Implemented or Complemented
Ex A-5, Attachments2 (EOC activation and notification procedure)	A6
Executive Order #144 Agency Procedures	A10
Massachusetts EBS Operational Plan	A6
NIAT Handbook	A6, A7, A8, A9, A11

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SECTION B1
INTRODUCTION

Part B of the State of Massachusetts Radiological Emergency Response Plan contains the State's emergency preparedness maintenance program.

This maintenance program consists of a public education and information program, training programs for members of the emergency response organization, programs for the conduct of drills and exercises, provisions for equipment maintenance and testing, and a program for plan maintenance.

SECTION B2

PUBLIC EDUCATION AND INFORMATION

The Massachusetts Civil Defense and Office of Emergency Preparedness (MCDA/OEP) and local Civil Defense organizations, in conjunction with each utility, will coordinate efforts in the development of a public education and information program.

B2.1 PUBLIC EDUCATION PROGRAM

A public education program has been established for the permanent and transient population within the 10-mile plume exposure pathway emergency planning zone.

The primary purpose of the program is to inform the public of the existence of State and local emergency response plans and of procedures which they should follow in the event of an emergency at a nuclear power station in their vicinity. The Massachusetts public education program is comprised of four elements which are designed to provide emergency planning information to all relevant segments of the public. They are:

1. A primary public information booklet that provides concise emergency public information. The booklet includes information to be digested in advance of an emergency as well as instructions to be followed in the event of activation of the public notification systems. Information included in this booklet encompasses public alert signals, Emergency Broadcast System notification stations, information for the handicapped or those with special needs, information for transients and potential recommended protective actions. These booklets also include evacuation route maps and designated reception centers. Likewise contact points for obtaining additional information are described. Public information booklets are reviewed, updated and distributed annually.

2. MCDA/OEP has developed a supplementary information booklet which is available for distribution to the public within 10 miles of each nuclear power station. This booklet is available through local Civil Defense offices. This second booklet provides general and up-to-date information on questions dealing with nuclear power, radiation, and emergency planning.

3. Emergency information summaries on self-adhesive labels designed to be placed where they can be easily seen are also included in the primary public information booklet.

B2.2 INFORMATION FOR MOBILITY-IMPAIRED INDIVIDUALS

A special section in the emergency public information booklet is devoted to information for handicapped or mobility-impaired persons. Telephone numbers are provided so that adequate preparation can be made by personnel with special notification or transportation needs and assistance provided, in advance, for these individuals in the event of an emergency. The emergency public information booklet will be distributed throughout the emergency planning zone annually.

B2.3 DISTRIBUTION OF EMERGENCY PUBLIC INFORMATION

The public information booklets, including the self-adhesive labels, are distributed annually by the utilities to individuals, households, hotels, motels, and campgrounds in the respective emergency planning zones.

B2.4 NEWS MEDIA BRIEFINGS

MCDA/OEP will participate in annual briefings for members of the media hosted by each utility and held in the media centers. The briefings will familiarize the media personnel with the major concepts of emergency planning as well as with the general plant-specific emergency planning information. Changes in emergency planning status since the last annual briefing will be highlighted.

SECTION B3
TRAINING

B3.1 INTRODUCTION

The purpose of this section is to describe the regularly scheduled training that is provided to the members of the Offsite Radiological Emergency Response Organization. The radiological emergency response training is one element of the more comprehensive training provided by MCDA/OEP (see the Massachusetts Comprehensive Emergency Plan, Annex J Plan Updating and Training). Available radiological emergency response training includes the following.

B3.2 TRAINING PROVIDED BY THE STATE

Training is provided to all organizations that comprise the Massachusetts Emergency Response Organization. Each training course is provided at least annually, and more frequently if significant emergency plan changes are implemented, or if deficiencies in emergency response capability are discovered. The types of training are as follows:

E.O. 144/Agency Directors/Emergency Planning Coordinators

At least once per year MCDA/OEP hosts training for agency directors and emergency planning coordinators. The training for this group of people focuses on broad emergency planning concepts. MCDA/OEP covers each of the major elements of the RERP in this training.

- Purpose of the RERP
- Emergency Response Organization
- Emergency Response Functions
- Plan Development and Readiness
- Documentation of Agreements

Participants in this training are familiarized with the State's concept of operations. Material covers the responsibilities of each agency in the Emergency Response Organization. Likewise the training covers basic concepts

essential to understanding the State's emergency planning efforts. These include Emergency Planning Zones (EPZs) in Massachusetts, Emergency Classification Levels and the locations and functions of the various emergency facilities within the State. The E.O. 144 training is normally conducted by MCDA/OEP Senior Staff and conducted from the State EOC.

Accident Assessment Training

At least once per year MDPH will conduct accident assessment training for the NIAT team members that may be expected to undertake dose calculation and projection work. MDPH staff that will be used for assignments in the State EOC at an EOF duty station will be included in the accident assessment training. The training will cover the decision processes outlined in Section A7 of the State Plan and the predictive techniques contained in the NIAT Handbook. Training will also cover use of the computer models available for accident assessment of each EOF.

Accident assessment training provided by MDPH will be supplemented by training provided by the SS, Rowe and VY plant operators. As schedules permit, MDPH staff and volunteers will attend onsite training sessions at the plant sites.

Radiological Monitoring and Analysis Training

At least once per year MDPH will conduct training for its NIAT monitoring and analysis teams. This training will include familiarization and use of the instrumentation available in each of the field monitoring kits. In addition the training will include familiarization with procedures for mobilization and dispatching field teams, locations of monitoring sites in each EPZ, and procedures for communicating and dispatching field samples. The Utilities have indicated willingness to include NIAT staff in training being provided to the Utility monitoring teams. This training will be used to supplement the training provided by MDPH. The training will be scheduled to preceed the periodic drills and exercises. This will provide a means for verifying the adequacy of the training.

Police, Security and Fire Fighting

State responsibility in this area is limited to access control functions. Once per year MCDA/OEP will instruct State Police, National Guard and Department of Public Works personnel on access control functions and EPZ evacuation procedures. The instruction will include EPZ locations and boundaries, locations of access control points, reception center and shelter locations and functions, and procedures for manning access control points. In addition those that may be called upon to respond to requests for police and security support within an EPZ will be given basic radiological exposure control instruction, including Exclusion Area Entry Procedures.

No State agency is responsible for providing onsite police, security or fire fighting support. These functions will be provided by Utility personnel, contractors and by local emergency workers. Training of these people will be handled by the Utility directly.

Medical Support and Rescue

MDPH will coordinate training for emergency workers with medical support and rescue responsibilities. The training will include instruction on EPZ locations and boundaries, the locations of emergency facilities, medical facilities, and staging areas for medical support personnel and vehicles. Instruction will cover communications procedures for medical support personnel and facilities. The MDPH instruction will also include basic radiological exposure control for emergency workers, and instructions for handling and transporting radiologically contaminated injured persons to designated medical treatment facilities. Hospitals designated to receive contaminated injured will receive personnel training as required on an annual basis.

Support Services

MCDA/OEP will provide instruction for the support service agencies included by E.O. 144 annually. This set of instructions will deal with management and coordination of emergency response activities. Material will include descriptions of the EPZs, locations and functions of emergency facilities,

locations of Reception Centers and shelters, and the support service functions provided at each of these Facilities. The instructions will be made available to the E.O. 144 agencies and to local volunteers and contractors that support emergency response activities.

Notification and Communications

MCDA/OEP will provide annual instruction to those personnel that have key roles in notification and emergency communication. These people include the supervisors and dispatchers at the State Police facilities and representatives of EBS stations for each EPZ. Instruction will include discussion of terminology, notification procedures and messages, emergency communication equipment and facilities, and emergency public information. Instruction will also cover descriptions of EPZ locations, Emergency Classification Levels and an overview of the RERP. The training will be evaluated based upon the performance of the agencies responsible for communications during subsequent communications drills.

B3.3 SUPPORT OF LOCAL TRAINING

MCDA will support the training efforts of the municipalities within each Plume Exposure EPZ. At least once per year it will hold one or more training sessions in each EPZ. The training will focus upon State-local interface, but it will also cover basic elements of radiological emergency response. At a minimum the State will present the nine emergency response functions:

- o Notification Methods and Procedures
- o Emergency Communictions Systems
- o Public Information
- o Emergency Facilities and Equipment
- o Accident Assessment
- o Protective Response
- o Radiological Exposure Control
- o Medical and Public Health Support, and
- o Recovery and Re-entry

Local training will be coordinated by the MCDA/OEP Area Director for each EPZ. The Area Director will schedule and coordinate local RERP training with the local Civil Defense Directors. The training will be conducted using qualified instructors from MCDA/OEP, MDPH and volunteers and consultants available to MCDA/OEP. Where additional specialized or supplementary training is requested by local radiological emergency response personnel it will be provided by the Area Directors where resources permit.

B3.4 TRAINING ADMINISTRATION

MCDA/OEP will provide for the initial and annual retraining of personnel with radiological emergency response responsibilities and will administer the radiological emergency response training program. MCDA/OEP will coordinate the scheduling of each of the training sessions with the agency responsible for providing the training. MCDA/OEP will maintain records of the dates and instructors for scheduled training. Table B3-1 is a sample of the master training schedule to be maintained by MCDA/OEP.

MCDA/OEP will require that a training outline for each session be prepared by the instructor and submitted to MCDA/OEP at least one week prior to the scheduled session. Attendance will be taken at each scheduled training session using the instruction log shown as Table B3-2. The instruction logs will be forwarded to the MCDA/OEP Training Officer as a permanent record of the availability and attendance at required training.

TABLE B3-1

RADIOLOGICAL EMERGENCY RESPONSE TRAINING SCHEDULES

1. Agency Directors/Emergency Planning Coordinators Session

Scheduled for	Instructor
_____	_____
_____	" _____
_____	" _____
_____	" _____

2. Accident Assessment Training Session

Scheduled for	Instructor
_____	_____
_____	" _____
_____	" _____
_____	" _____

3. Radiological Monitoring & Analysis Training

Scheduled for	Instructor
_____	_____
_____	" _____
_____	" _____
_____	" _____

4. Police, Security & Fire Fighting

Scheduled for	Instructor
_____	_____
_____	" _____
_____	" _____
_____	" _____

TABLE B3-1 (Continued)

RADIOLOGICAL EMERGENCY RESPONSE TRAINING SCHEDULES

5. First Aid, Medical Support and Rescue Training

Scheduled for	_____	Instructor	_____
	_____	"	_____
	_____	"	_____
	_____	"	_____

6. Support Services Training

Scheduled for	_____	Instructor	_____
	_____	"	_____
	_____	"	_____
	_____	"	_____

7. Notification and Communications Training

Scheduled for	_____	Instructor	_____
	_____	"	_____
	_____	"	_____
	_____	"	_____

8. Support of Local Training

Scheduled for	_____	Instructor	_____
	_____	"	_____
	_____	"	_____
	_____	"	_____

TABLE B3-2

INSTRUCTION LOG

COURSE TITLE _____

INSTRUCTOR _____

DATE _____

EVALUATION METHOD _____

ATTENDANCE RECORD

	NAME	AGENCY	EVALUATION GRADE
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

SECTION B4
DRILLS AND EXERCISES

Periodic drills are conducted to develop and maintain skills required for a radiological emergency. Annual exercises are conducted to evaluate the State's emergency response capabilities. Together, drills and exercises provide a means for identifying and correcting deficiencies in emergency response procedures.

B4.1 DRILLS

Drills are often major components of emergency response exercises. They are a supervised instruction period aimed at testing, developing, and maintaining skills necessary to perform a particular function as well as augmenting standard maintenance checks of emergency equipment. All drills, as listed below, will be directed by the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) and evaluated by qualified observers. A critique will be held following the drill among the MCDA/OEP, observers, and players. Assignments will be made for resolution of observed deficiencies subsequent to the critique.

B4.1.1 Communication Drills

Overall coordination of communication drills is the responsibility of the MCDA/OEP. Both primary and alternate methods of communications will be tested. Communication drills will also include the aspect of understanding the content of the message.

MCDA/OEP will exercise its communications capability and emergency notification network(s) monthly. Tests will include initial contact, verification, and closeout of message with simulated response as required. Monthly tests will encompass all primary State response agencies and either actual or simulated local agency contacts as required by the test for all communities within the 10-mile plume exposure pathway.

Communications tests with primary Federal emergency response organizations and states within the 50-mile ingestion pathway will be held quarterly. Communications drills involving the facility operators, State and local emergency operating centers, and field assessment teams will be held annually.

B4.1.2 Medical Emergency Drills

Ambulance services and medical facilities having agreements with nuclear power stations will participate in annual medical emergency drills. A radiological medical emergency drill will involve, as a minimum, a simulated contaminated individual, participation from an ambulance service, an offsite medical treatment facility, and the nuclear power station. Medical emergency drills may be performed as part of the required annual exercise or as a separate activity.

The conduct of medical emergency drills is the responsibility of the utilities. The Massachusetts Department of Public Health (MDPH) may assist in the conduct of radiological medical emergency drills.

B4.1.3 Radiological Monitoring and Health Physics Drills

Radiological monitoring and health physics drills for MDPH staff and appropriate local organizations will be held at least annually. These drills shall include mobilization of the monitoring teams, collection and laboratory analysis of various sample media (e.g., water, grass, soil, and air) and simulated direct radiation measurements in the environment. Provisions for communications and record-keeping will be an intrinsic part of each drill.

B4.1.4 Accident Assessment Drills

The MDPH may conduct accident assessment drills. These drills involve analysis of and response to simulated elevated radiation levels in airborne and liquid sample media and to direct radiation measurements in the environment.

B4.2 EXERCISES

At least once every 2 years, the MCDA/OEP will coordinate the conduct of an emergency response exercise of the State RERP Exercises shall be conducted as set forth in NRC and Federal Emergency Management Agency rules.

An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. The exercise shall simulate an emergency which results in offsite radiological releases which would require the response of offsite authorities. The exercise will include the mobilization of adequate personnel and resources of the nuclear power station, as well as of the State and local organizations, to demonstrate the ability to respond to an incident as called for in State and local RERPs. All emergency operating centers involved in the exercise will be manned commensurate with the accident classification.

The MCDA/OEP, in coordination with facility operators, is responsible for conducting an exercise which tests the entire emergency response organization capabilities identified in the State and local RERPs. One such full-scale exercise will be carried out each year at one of the nuclear stations affecting the state. The remaining exercises may involve only the local EPZ communities. Local communities need only participate in a full-scale exercise once every two years. Exercise of the full emergency response capability will be rotated annually among Pilgrim, Vermont Yankee, Yankee Rowe, and Seabrook stations to assure full and regular testing of State and local RERPs.

B4.2.1 Scenarios

The MCDA/OEP, in conjunction with the MDPH and each utility, is responsible for the development of exercise scenarios. These scenarios will include the basic objective(s) for each drill or exercise and appropriate evaluation criteria, the date(s), time period, place(s) and participating agencies, the simulated events, and the time schedule of real and simulated initiating events.

A narrative summary describing the conduct of the exercises or drills will include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, public information activities, and the involvement of both plume and ingestion pathway areas. A description of the arrangements for and advance materials to be provided to official observers shall also be provided.

The exercise scenario will be varied from year to year so that all major elements of the plan and all preparedness organizations are tested within a 5-year period. Once every 6 years, provisions will be made to start an exercise between 6:00 pm and midnight, and another between midnight and 6:00 am. Exercises will be conducted under various weather conditions during different seasons of the year. Some exercises will be unannounced.

B4.2.2 Critique and Follow up

The Federal Emergency Management Agency (FEMA) Region I will provide for the critique of annual exercises by qualified observers. Other federal agency officials and invited participants will assist in this role. Detailed evaluation sheets identify the procedures to be followed by observers in their critique of an exercise. FEMA will conduct a debriefing following the exercise to provide a general evaluation of each organization's ability to carry out their responsibilities.

Followup of the oral evaluations will be made in the form of a written formal evaluation issued by FEMA to all State and local participants. Recommendations for improvements will be included in the written evaluation. A post-exercise review will be held among appropriate 144 Committee members and local CD officials to insure adequate consideration of all comments and reasonable response to any deficiencies noted.

Assignments will be made for the resolution of all noted deficiencies. Where the deficiency was the result of a response that was not in accordance with existing plans and procedures, additional training may be required.

Where the deficiency was the result of a response or action performed according to plans and procedures, review and correction of the plan and/or procedures will be performed.

All necessary revisions and/or updates identified as a result of the exercise and critique will be incorporated into State and local RERPs and procedures and will be tested during the next annual exercise.

SECTION B5
EQUIPMENT MAINTENANCE

Proper maintenance and testing of emergency equipment is necessary to ensure its operability in the event of an accident at a nuclear power plant.

B5.1 COMMUNICATIONS EQUIPMENT

All of the emergency communications equipment identified in this plan is used by various agencies on a day-to-day basis. For this reason, many of the systems are in constant use or are tested frequently. No system is tested less frequently than once per month. In addition, the entire emergency communications system is tested for use in a radiological emergency response during annual exercises. Sufficient equipment exists to compensate for equipment temporarily removed for service or repair. (See Section B.5.3 for the communications system testing procedures.)

B5.2 RADIOLOGICAL MONITORING EQUIPMENT

At least once each calendar quarter and after each use, emergency response equipment will be inspected, inventoried, and operationally checked. Calibrations of equipment are made at intervals recommended by the supplier of the equipment at the Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) Maintenance and Calibration Facility. The MCDA/OEP will assure that sufficient reserves of equipment will be made available to replace those undergoing calibration or repair. Equipment provided by the nuclear power station will be maintained and calibrated by the utility. The Massachusetts Department of Public Health (MDPH) will maintain MDPH and Nuclear Incident Advisory Team monitoring and laboratory equipment.

B5.3 COMMUNICATIONS SYSTEM TESTING

The MCDA/OEP Communications Officer at the Framingham Headquarters or designee shall test the State communications systems on a regular basis. The results of all tests shall be logged on the appropriate log sheets maintained in the MCDA/OEP Communications Center (see sample log sheets, Attachments 2 and 3).

1. National Warning System (NAWAS)

Primary State Warning Point - Massachusetts State Police (MSP) Headquarters

MSP Headquarters shall conduct a roll call of the cities and towns on the Federal circuit State NAWAS Point Check List (*Attachment 1) three times during each 24 hour period at intervals of approximaltely 8 hours.

Alternate State Warning Point - MCDA/OEP Headquarters

2. Federal Circuit

In the event that the MSP Primary Warning Point is busy during the intervals specified in Item 1.1.1, the MCDA/OEP shall conduct the roll call of the cities and towns on the State NAWAS Point Check List (Attachment 2).

3. State Circuit

MCDA/OEP SHALL TEST THE State circuit of all NAWAS warning points bi-weekly at 1000 hours on alternate Tuesdays (see Attachment 3).

4. Radio Equipment

Two-way voice contact testing of radio equipment shall be conducted by MCDA/OEP with the following agencies on a monthly basis. Each agency shall record the date of the test and the signal strength.

Massachusetts State Police

Registry of Motor Vehicles

Department of Public Works

Department of Environmental Quality Engineering

Metropolitan District Commission

Massachusetts National Guard

Local Government Hi Band Net

Radio Amateur Communications Emergency sServices (RACES)

The two MCDA/OEP radio frequencies are used, and therefore tested, daily.

5. Teletype Systems

Federal

The Federal teletype system shall be tested daily.

State

The State teletype system is in use daily. It shall be formally tested monthly.

6. Telephone Systems

MCDA Operations Room

The telephones in the MCDA Operations room (see Attachment 4) shall be tested monthly.

The nuclear hot line phones in the Operations room shall be tested on a monthly basis to random locations.

Massachusetts State Police (MSP)

The direct link phone line between MCDA/OEP and MSP shall be tested by MCDA on a weekly basis.

7. Emergency Broadcast System (EBS)

MCDA shall initiate, conduct, and evaluate tests of the EBS on a monthly basis at random times with the voluntary participation of Massachusetts broadcasters. The primary EBS stations are WHDH-AM and WROR-FM.

Associated Studio Recording and Transmitting Equipment shall be tested monthly.

8. Checkerboard Warning Tests

MCDA/CEP shall conduct random "checkerboard" warning tests of the State warning points on a bi-monthly basis. The method of communication may be via NAWAS, radio, telephone, and/or LEAPS. The tests consist of bell alert and two-way voice contact.

The warning points contacted during checkerboard tests shall return a postcard (see Attachment 5) to MCDA verifying the date, time, and means of communication: identifying the test initiator and receiver; and noting the notification time of the local warning system activating authority.

9. MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH (MDPH)

Communications between MDPH Nuclear Incident Advisory Team (NIAT) Control and its members, and with other agencies, shall be conducted in accordance with the procedures detailed in the NIAT Handbook, Appendix B. In summary, this document describes the Civil Defense Radio Network in its application to NIAT.

10. NIAT Control

The main NIAT Control Base Station shall be activated daily. The date and time of activation and deactivation and the initials of the individual(s) performing these actions shall be entered into the log maintained at the base station.

NIAT Control and Base Stations

F2

Communications between NIAT Control remote units and base stations monitoring F2 within range shall be conducted as described in the NIAT Handbook, Appendix B.

F1

Since NIAT Control cannot send messages on F1, communications between NIAT Control and base stations not monitoring F2, to base stations out of range, and to mobile units out of range shall be relayed through MCDA Headquarters in Framingham. Procedures for these communications are provided in the NIAT Handbook, Appendix B.

Mobile Units

Communications equipment in mobile units shall be tested weekly by transmitting to NIAT Control as described in NIAT Handbook, Appendix B.

ATTACHMENTS

1. NAWAS Warning Points in Massachusetts
2. State NAWAS Point - Check List
3. Bi-Weekly NAWAS Test - Warning Points
4. MCDA Operations Room Floor Plan
5. Checkerboard Warning Test Reply Card

REFERENCES

1. Commonwealth of Massachusetts Radiological Emergency Response Plan, Appendix 3.

2. Massachusetts Civil Defense Agency Emergency Operating Center Utilization Plan

3. Nuclear Incident Advisory Team (NIAT) Handbook

4. Massachusetts Emergency Broadcast System Advisory Plan

STATE NAWAS POINT - CHECK LIST

SWP - MSP HQ.		
1 - ALT - MCDA		
2 - NORTHAMPTON	SP	
3 - BARNSTABLE	CO	
4 - GREENFIELD	F	
5 - SPRINGFIELD	PD	
6 - HAVERHILL	P	
7 - LOGAN	W	
8 - BOSTON	PD	
9 - CAPITOL	PD	
10 - REVERE	F	
11 - NEW BEDFORD	F	
12 - FITCHBURG	F	
[illegible] - BROCKTON	PD	
- NATIONAL GUARD		
- QUINCY	F	
16 - SOUTHBRIDGE	F	
17 - TAUNTON	F	
18 - ATTLEBORO	PD	
19 - FALL RIVER	F	
20 - WORCESTER	F	
21 - WORCESTER WEATHER		
22 - NEWBURYPORT	PD	
23 - SALEM	F	
24 - NORTH ADAMS	F	
25 - BERKSHIRE	CO	
26 - FED RES BANK	BOS	
27 - WESTFIELD	PD	
28 - CHICOPEE	F	
29 - MASHPEE	P	

BI-WEEKLY NAWAS TEST - 1000 HRS. EVERY OTHER TUESDAY	
WARNING POINTS	
1. STATE POLICE	BOS
2. NORTHAMPTON	S.P.
3. BARNSTABLE CO.	SHER.
4. GREENFIELD	FIRE
5. SPRINGFIELD	POLICE
6. SPRINGFIELD	ALT
7. HAVERHILL	FIRE
8. LOGAN	WEATHER
9. BOSTON	POLICE
10. CAPITOL	POLICE
11. REVERE	FIRE
12. NEW BEDFORD	FIRE
13. FITCHBURG	FIRE
14. BROCKTON	POLICE
15. NATIONAL GUARD	
16. QUINCY	FIRE
17. QUINCY	ALT
18. SOUTHBRIDGE	FIRE
19. TAUNTON	FIRE
20. ATTLEBORO	POLICE
21. FALL RIVER	FIRE
22. WORCESTER	FIRE
23. WORCESTER	WEATHER
24. NEWBURYPORT	POLICE
25. SALEM	FIRE
26. NORTH ADAMS	FIRE
27. BERKSHIRE COUNTY	
28. PITTSFIELD	ALT
29. FED RES BANK	BOSTON
30. WESTFIELD	POLICE
31. CHICOPEE	FIRE
32. MASHPEE	POLICE
33. AREA 1 TEWKSBURY	
34. AREA 2 BRIDGEWATER	
35. AREA 3 WESTBORO	
36. AREA 4 BELCHERTOWN	

CHECKERBOARD TEST - MONTHLY

NAWAS

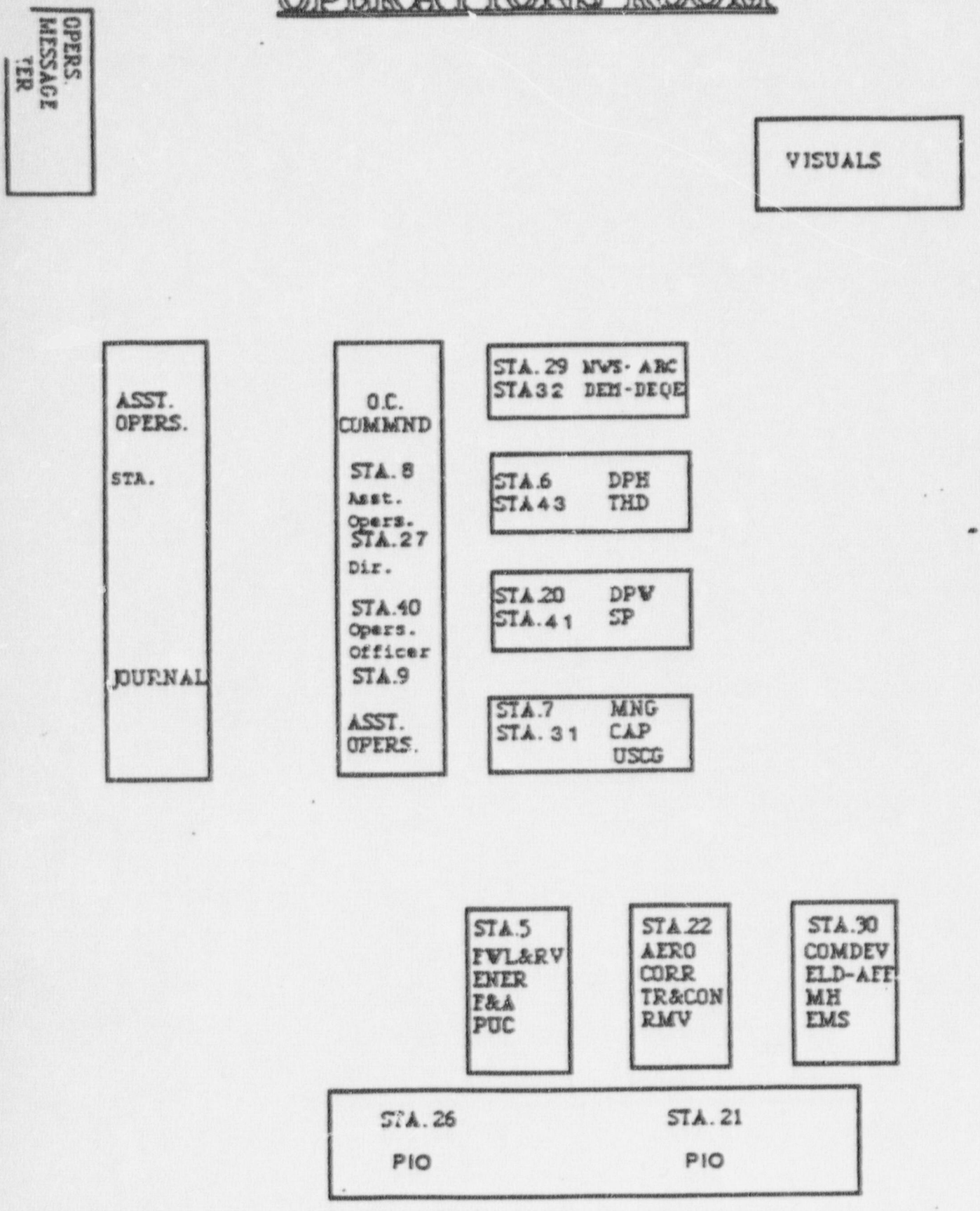
Warning Points in Massachusetts

			State Roll Call	Checkerboard Dissemination	State Facility	Local Community	Alternate EOC	Extension (Same location)	Federal Agencies	County Facility
1.	Primary	*Mass. S.P.			X					
2.	Alternate	Mass. C.D.A.	X		X					
3.	Alternate	Northampton S.P.	X		X			X		
4.		Barnstable County	X	X						X
5.		Greenfield Fire	X	X		X		X		
6.		Springfield Police	X	X		X	X			
7.		Haverhill Fire	X	X		X				
8.		Logan Weather	X						X	
9.		Boston Police	X	X		X				
10.		Capitol Police	X		X					
11.		Revere Fire	X	X		X				
12.		New Bedford Fire	X	X		X				
13.		Pittsfield Fire	X	X		X	X			
14.		Fitchburg Fire	X	X		X				
15.		Brockton Police	X	X		X				
16.		National Guard	X		X					
17.		Quincy Fire	X	X		X	X			
18.		Southbridge Fire	X	X		X		X		
19.		Taunton Fire	X	X		X				
20.		Attleboro Police	X	X		X				
21.		Fall River Fire	X	X		X				
22.		Worcester Fire	X	X		X				
23.		Worcester Weather	X						X	
24.		Newburyport Police	X	X		X				
25.		Salem Fire	X	X		X				
26.		North Adams Fire	X	X		X				
27.		Berkshire County	X	X						X
28.		Federal Reserve Bank	X	X					X	
29.		Westfield Police	X			X				
30.		Chicopee Fire	X			X				
31.		Mashpee Police	X			X				
32.		Area I Civil Defense			X					
33.		Area II Civil Defense			X					
34.		Area III Civil Defense			X					
35.		Area IV Civil Defense			X					
36.		*Region I, Maynard							X	
37.		*Region I, Boston							X	
38.		*Coast Guard, Boston							X	

*National Roll Call

ANNEX D to MCDA Emergency Operating Center Utilization Plan
Attachment 12

OPERATIONS ROOM



REPLY CARD
CHECKERBOARD WARNING TEST

CHECKERBOARD WARNING TEST

Community _____

MCDA Area _____

Date received _____

Time received _____

VIA Radio Telephone LEAPS NAWAS
(check one)

Received from _____

Time local warning system activating authority notified _____

This card from: Fire Dept. _____

Police Dept. _____

C.D. Director _____

Other _____
(specify)

_____
(signature)

PLACE STAMP HERE. The Post Office will not deliver mail without postage.

MASSACHUSETTS CIVIL DEFENSE AGENCY
400 WORCESTER ROAD
P.O. BOX 1496
FRAMINGHAM, MA 01701

SECTION B6
PLAN MAINTENANCE AND UPDATING

The purpose of this section is to identify organizations responsible for the development and maintenance of the Massachusetts Radiological Emergency Response Plan.

B6.1 RESPONSIBILITY FOR RADIOLOGICAL EMERGENCY RESPONSE PLANNING

The Massachusetts Civil Defense Agency and Office of Emergency Preparedness (MCDA/OEP) has a statutory responsibility (under the Massachusetts Energy Reorganization Act, effective January 1, 1980) for the review, updating, and publication of revisions to State and local RERPs. The MCDA/OEP Director shall assure that various plan components are reviewed quarterly on the basis of new guidance received from the Federal government and other sources, information developed through emergency tests and exercises, and advice from State agencies, local governments, and private organizations. Personnel and telephone listings will be revised and re-issued on a quarterly basis.

Other State agencies within the Massachusetts emergency response organization are responsible for advising the MCDA/OEP at least quarterly, through their respective
emergency preparedness and liaison officers (Executive Order 144 assignees) of potential or existing situations which require modification to the State plan, and for developing and improving agency-specific plan elements.

B6.2 PLAN REVISION

This plan and agreements as well as area, local, and host community plans are reviewed and updated quarterly to reflect any revisions and changes deemed necessary as a result of drills and exercises. Revisions will be sent to holders of controlled copies of the plan accompanied by a mailback certificate indicating that the changes have been received and incorporated. The

certificates will be reviewed to ensure that all controlled copies of the plan are current. At least quarterly the MCDA/OEP will update the roster of active Executive Order 144 agency representatives, their organizations, and phone numbers.

B6.3 PLAN DISTRIBUTION AND MAINTENANCE

Copies of the RERP will be numbered and distribution will be controlled and registered by serial number. All changes to the plan will be similarly documented and then entered in the controlled copies. A listing of controlled copy holders is provided in the front of this plan. In general, distribution of controlled RERP copies will be as follows:

State Agencies

- Key state agencies (State Police, Department of Public Health, Department of Environmental Quality Engineering, etc) will receive and maintain controlled copies of the plan.

Federal Agencies

- The Federal Emergency Management Agency will receive controlled copies of the plan.

PLAN MAINTENANCE PROCEDURES

1. DISTRIBUTION CONTROL:

   a. The Director, MCDA/OEP, or his designee, shall distribute controlled copies of the plans and revisions. The Controlled Document Distribution List (Attachment 1) shall be used to record the names of the Controlled Copy holders of each of the plans. These lists shall be maintained on file.

      The Director, MCDA/OEP, or his designee, shall maintain accountability of the plans and revisions to them through the use of the Notice of Receipt form (Attachment 2). When these forms are signed and returned by the Controlled Copy holder, the Director, MCDA/OEP, or his designee, shall record the date signed on the Controlled Document Distribution List. The Notice of Receipt form can then be discarded.

   b. All designated holders of a Controlled Copy of a plan should insert a Record of Revisions form (Attachment 3) in the front of the document and record entries therein.

   c. All designated holders of a Controlled Copy of a plan shall follow all of the instructions on the Notice of Receipt form (Attachment 2) when it is received. The Notice of Receipt should be signed, dated and returned to MCDA/OEP.

   d. The Director, MCDA/OEP, or designee, shall maintain on file a master copy of the plans and all revisions, including pending revisions.

   e. Each State agency head and each local and host community Civil Defense Director should use the Document Acknowledgement Sheet (Attachment 4) to ensure that all appropriate community-specific or State agency staff members are aware of plan revisions.

2. REVISIONS TO EMERGENCY PLANS

   a. The Director, MCDA/OEP shall, once every three months, initiate the effort for the general overall updating of all the plans by appropriate revisions.

b. Holders of Controlled Copies of the plans, and their staff, should note required changes to the plans. Requests to implement needed changes should be forwarded to the Director MCDA/OEP via State agency head and local Civil Defense Directors. Revision requests of this sort can be made as a part of the quarterly review or at any time the need for a plan revision is discovered.

c. All internal personnel and telephone call lists should be reviewed and updated every 3 months. This is the responsibility of each State agency liaison and each community Civil Defense Director. Revision of call lists is a plan revision that should be accomplished through the Director MCDA/OEP or his designee.

d. All revisions of the plans shall be issued in accordance with Section 1. of this procedure.

ATTACHMENTS

1. Controlled Document Distribution List
2. Notice of Receipt Form
3. Record of Revisions Form
4. Document Acknowledgment Sheet

Section B6
Attachment 1

CONTROLLED DOCUMENT DISTRIBUTION LIST

DOCUMENT _____

COPY NUMBER DISTRIBUTION LIST REVISION NUMBER

Section B6
Attachment 2

NOTICE OF RECEIPT

DOCUMENT: _____

TO: _____

NOTICE OF RECEIPT OF _____

REVISION NO. _____ COPY NO. _____

Authorization for Issue Director, MCDA/OEP

Please insert the revisions, listed below, into your copy of the above document and destroy all superseded and out-dated pages:

Insert	Revision Number	Revision Date

Please enter Revision Number on "Record of Revisions" form.

This acknowledges receipt of the revision listed above. In addition, all superseded pages have been removed and destroyed. Affected personnel have been notified.

_____ _____
Signature Date

Return this ENTIRE sheet to the Director, Massachusetts Civil Defense Agency and Office of Emergency Preparedness, 400 Worcester Road, P.O. Box 1496, Framingham, MA 01701 when above instructions have been completed.

Section B6
Attachment 3

RECORD OF REVISIONS

DOCUMENT: _____

REVISION	DATE ENTERED	INITIAL	REVISION	DATE ENTERED	INITIAL

Section B6
Attachment 4

DOCUMENT ACKNOWLEDGEMENT SHEET

The following document(s) has been revised, issued as new. Please read the document(s) prior to affixing your initials on the line provided.

DEPARTMENT _____

DOCUMENT TITLE _____ REVISION NO. _____

DOCUMENT NO. _____ REVISION DATE _____

I have read and am aware of the provisions of the above listed document(s).

REQUIRED PERSONNEL	INITIALS	DATE

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