NEXTera® ENERGY SEABROOK

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SBK-L-21023

United States Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, D.C. 20555-0001

Seabrook Station Radiological Emergency Plan (SSREP), Revision 77

In accordance with the requirements of 10 CFR 50, Appendix E; 10 CFR 50.4, and 10 CFR 72.44(f), enclosed is Revision 77 to the Seabrook Station Radiological Emergency Plan (SSREP).

The revision does not reduce the effectiveness of the SSREP, and the SSREP continues to meet the standards of 10 CFR 50.47(b) and 10 CFR 50, Appendix E. The Resident Inspector copy is provided directly through the NextEra Energy Seabrook, LLC records management system.

Enclosure 1 provides a summary of changes to the SSREP. Enclosure 2 provides a summary of the change analysis required by 10 CFR 50.54(q)(5), and Enclosure 3 provides a copy of the revised manual sections.

Should you have any questions regarding the enclosed revisions, please contact me at (603) 773-7932.

Sincerely,

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Enclosure 1 to SBK-L-21023
Summary of Changes

Radiological Emergency Plan (SSREP), Revision 77

- Removed reference to Red and White teams.
- Corrected location of Emergency Operations Facility.
- Removed High Pressure Ion Chamber from the list of EOF equipment.
- Removed requirement that the mobile communications with the offsite survey teams be push-to-talk.
- Revised the location of the Seabrook Station News Services from the Science and Nature Center to the Joint Information Center or as directed by the Emergency New Manager. Revised number of Technical Advisors to "as needed".
- Revised to allow the Response Manager to obtain a briefing from either the Site Emergency Director or the Control Room.
- Replaced title of Science and Nature Center staff to Communications staff. Revised description of contact between the Seabrook Station Communications personnel with the media.
- Revised to request the Town of Seabrook Fire Department to participate in a drill annually.
- Editorial title change from SORC to ORG.
- Appendix A - Revised potential candidates background in a number of positions.
- Appendix A - Eliminated Dosimetry Records Personnel position.

Enclosure 2 to SBK-L-21023
Change Analysis Summary

Radiological Emergency Plan (SSREP), Revision 77

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- Editorial title change from SORC to ORG
- Appendix A - Revised potential candidates background in a number of positions.
- Appendix A - Eliminated Dosimetry Records Personnel position.

Removed reference to Red and White teams -
Currently during an Alert of higher emergency declared during normal work hours the Red Team reports to their facility while White Team congregates in the Assembly Area. White Team members then backfill any unfilled Red Team positions or transitions to staff the second shift. This change eliminates the Red and White Teams so that the emergency facilities will be immediately staffed, and all unassigned responders will then transition to the Assembly Area to be assigned to other shifts.

Corrected location of Emergency Operations Facility -
The EOF changed locations in 2013 and the SSREP was revised (AR 1721945) to reflect the new location in Portsmouth NH. This editorial change corrects the EOF location in Figure 6.1 that was inadvertently missed during the 2013 revision and is not associated with a planning standard.

Removed High Pressure Ion Chamber from the list of EOF equipment –
Removed the High Pressure Ion Chamber (HPIC). The HPIC is not necessary to response to a radiological emergency since handheld instruments are available for use in the field for direct gamma measurements.

Removed requirement that the mobile communications with the offsite survey teams be push-to-talk –
There is no requirement for the mobile communications to specifically be push-to-talk.

Revised the location of the Seabrook Station News Services from the Science and Nature Center to the Joint Information Center or as directed by the Emergency New Manager -
The Seabrook Station News Services activates during an Unusual Event. The Emergency News Manager may operate from any location and may request technical or administrative support at their discretion. The Science and Nature Center was viewed as a suggested facility to operate from; however the Joint Information Center is preferable since in the event of an emergency upgrade the Emergency News Manager would already be in their assigned facility. Only the Emergency News Manager is required to respond to the Unusual Event, while the Technical Advisor and Support Staff respond as needed. Figure 8.16 revised the number of Technical Advisors from 1 to "as needed" to match the Support Staff requirements.

Revised number of Technical Advisors to "as needed" -
Corrected number of JIC Technical Advisors from 2 to 1. In the SSREP revision 76 the JIC Technical Advisor position was reduced from 2 to 1. The JIC organizational chart was correctly revised however the JIC Technical Advisor position is also listed on the EOF organizational chart and was missed. The reduction in JIC staff was previously presented to and approved by ORG (ref. ORG meeting #19-18 AR 2330818).

Revised to allow the Response Manager to obtain a briefing from either the Site Emergency Director or the Control Room -
This reduced the number of calls to the Control Room.

Replaced title of Science and Nature Center staff to Communications staff. Revised description of contact between the Seabrook Station Communications personnel with the media. -
This change replaces the Science and Nature Center staff maintaining supplies of public information materials available upon request with the Communication's staff with providing public information materials upon request because there are no dedicated Science and Nature Center (SNC) staff. The SNC has been staffed by Communications personnel. This change also removes the public education programs from the emergency plan since the public education programs are no longer supported from the Science and Nature Center and removes the requirement for Communications personnel to be in daily contact with the local media. Communications personnel are in contact with local and regional media, however daily contact is not required nor desired.

Revised to request the Town of Seabrook Fire Department to participate in a drill annually -
This change clarifies that the station shall request the Town of Seabrook Fire Department to participate in a drill vs. a requirement for offsite fire department to participate because the station cannot control the offsite agency.

Editorial title change from SORC to ORG -
The Committee changed names – editorial only.

Appendix A – Revised potential candidates background in a number of positions -

Table 1 -- Removed bargaining unit restrictions from the potential candidate's background from the Chemistry Coordinator, Electrical Maintenance Personnel, I&C Personnel, and Mechanical Maintenance Personnel. Revised Potential Candidates Background section for the Radiological Controls Coordinator, Junior Radiation Protection Personnel, Radiological Assistant and Offsite Monitoring Team Personnel to state "Experienced with or trained on Radiation Protection related duties".

Appendix A – Eliminated Dosimetry Records Personnel Position -
Moved Dosimetry Records Personnel position functions to the Radiological Assistant and eliminated the Dosimetry Records Personnel position.

Enclosure 3 to SBK-L-21023

RMD Controlled Copy _____

SEABROOK STATION

PROGRAM MANUAL

Seabrook Station
Radiological Emergency Plan

SSREP
Rev. 77

Manual Owner:
D. Currier

SEABROOK STATION
RADIOLOGICAL EMERGENCY PLAN
(SSREP)

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1.0 INTRODUCTION

The Seabrook Station Radiological Emergency Plan (SSREP) was developed in accordance with the requirements of paragraphs 50.47(b) and Appendix E to Title 10 of the Code of Federal Regulations Part 50, "Licensing of Production and Utilization Facilities." In addition, Paragraph 50.47 of 10 CFR 50 specifies that the Operating License award depends on a finding by the Nuclear Regulatory Commission as to the adequacy of both onsite and offsite emergency preparedness. To meet this requirement, the SSREP has been formulated to address planning elements which have been specified by the Nuclear Regulatory Commission (NRC) and the Federal Emergency Management Agency (FEMA) in NUREG-0654/FEMA-REP-1, Rev. 1. Exceptions to this planning guidance are documented in the Emergency Preparedness Planning Basis Document.

The purpose of this document is to provide a reference and guidance source which:

1. Outlines the Seabrook Station Emergency Response Organization (ERO), and specifies the interfaces between and among ERO activities, and State, local, Federal and private sector organizations;

2. Assures a standard emergency classification and action level scheme which activates emergency response functions dependent upon the severity of the accident;

3. Specifies the method of notification to the offsite emergency response organizations;

4. Summarizes ERO emergency response facilities and equipment;

5. Assures that provisions exist for communications among principal response organizations;

6. Defines the Station's capability for assessing and monitoring actual or potential offsite radiological consequences of an emergency condition; and

7. Assures that periodic training programs, exercises and drills will be conducted in order to maintain a high level of emergency preparedness at Seabrook Station.

In support of this document, emergency operating procedures will assist the Station operating staff in recognizing an emergency condition and will prescribe immediate response actions necessary to correct the condition. The emergency conditions that trigger the use of emergency operating procedures also trigger the use of an emergency classification procedure. The emergency classification procedure initiates activation of this plan in accordance with a prescribed set of emergency response procedures. The emergency implementing procedures will govern the actions undertaken by the ERO.

The SSREP and associated procedures are part of the overall emergency planning and preparedness program related to Seabrook Station. New Hampshire and Massachusetts State agencies and local civil authorities within the plume emergency planning zone (i.e., approximately a 10-mile radius) have cooperated in establishing plans and procedures for the alerting and protection of the general public in the event of a radiological emergency at Seabrook Station.

In addition, the support and capabilities of all appropriate Federal agencies would be made available to the Station, and State and local governments as specified in the National Response Framework, Nuclear/Radiological Incident Annex. Additional technical support and services can be acquired through emergency plan arrangements with industry organizations such as the Westinghouse Energy System Business Unit Emergency Response Team and the Institute of Nuclear Power Operations.

2.0 DEFINITIONS

Alert - Events are in process or have occurred which involve an actual or potential substantial degradation in the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Alternative Operational Support Center – An area within the EOF where OSC personnel assemble for hostile action based events or other catastrophic events that prevent site access.

Alternative Technical Support Center - An area within the EOF where TSC personnel assemble for hostile action based events or other catastrophic events that prevent site access.

Assembly Area - The Assembly Area for backup response personnel and maintenance technicians is located in the Seabrook Station Conference Center at the rear of Warehouse #1. This facility would be activated only during the period from 0700 to 1630, Monday through Friday, except during planned outages when it would be opened on any shift. Activation is required at an Alert or higher emergency classification level.

Assessment Actions - Actions which are taken to effectively define the emergency situation necessary for decisions on specific emergency measures.

Automated Telephone Notification Service - A commercial, computer-based call-out service used to notify Primary, Subject-to- Call and Secondary Responders during back-shifts, weekends and holidays of an Alert or higher emergency classification.

Backup Responders - Personnel who do not initially staff an emergency response facility but are available for subsequent staffing duties (e.g., second shift). During a daytime plan activation, these personnel report to the Assembly Area.

Committed Dose Equivalent (CDE) - The dose equivalent to an organ from an intake of radioactive material during the 50 year period following the intake.

Committed Effective Dose Equivalent (CEDE) - The sum of the products of the weighting factors applicable to each of the body organs that are irradiated and the CDE to these organs.

Corrective Actions - Emergency measures taken to ameliorate or terminate an emergency situation.

Deep Dose Equivalent (DDE) - The external dose equivalent to the whole body at a tissue depth of 1 cm.

Dose - A general term referring to the quantity of absorbed energy in tissue. In the SSREP, dose is used for irradiation of the whole body, unless otherwise indicated.

Dose Equivalent (DE) - The product of absorbed dose in tissue and the quality factor.

Emergency Action Level (EAL) - A pre-determined, site-specific, observable threshold for an Initiating Condition that places the Station in a given emergency class.

Emergency Classifications - One of a minimum set of names or titles, established by the Nuclear Regulatory Commission (NRC), for grouping off-normal nuclear power plant conditions according to (1) their relative radiological seriousness, and (2) the time-sensitive onsite and off-site radiological emergency preparedness actions necessary to respond to such conditions. The radiological emergency classes, in ascending order of seriousness, are as follows:

- Unusual Event
- Alert
- Site Area Emergency
- General Emergency

Emergency Operating Centers (EOCs) - Areas designated by the State and local authorities as Emergency Plan facilities for their respective staffs.

Emergency Operating Procedures - The outline of specific corrective actions to be taken by Station operators in response to abnormal operating conditions.

Emergency Operations Facility (EOF) - A center established beyond ten miles from the Seabrook Station site where Seabrook Station emergency management directs the actions of the emergency response organization, coordinates the evaluation of offsite radiological conditions with offsite authorities, arrives at protective action recommendations, and establishes a recovery organization.

Emergency Planning Zones (EPZ) - The areas for which planning is recommended to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The two zones are the plume exposure pathway zone (about 10 miles in radius) and the ingestion exposure pathway zone (about 50 miles in radius).

Emergency Response Organization (ERO) - The Seabrook Station personnel assigned and trained to implement this emergency plan.

Emergency Response Procedures - Procedures that outline specific actions to be taken by the Seabrook Station ERO to activate and implement this emergency plan. These procedures are contained in the Station Emergency Response Manual (SSER).

GEL Laboratories – A contracted service for emergency environmental sample analysis.

General Emergency - Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

HOSTILE ACTION - An act toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. HOSTILE ACTION should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the nuclear power plant. Non-terrorism-based EALs should be used to address such activities (e.g., violent acts between individuals in the owner controlled area).

HOSTILE FORCE - One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

Ingestion Exposure Pathway - The pathway in which individuals receive a radiation dose due to internal deposition of radioactive materials from ingestion of contaminated water, foods, or milk.

Initiating Condition - One of a predetermined subset of nuclear power plant conditions where either the potential exists for a radiological emergency or such an emergency has occurred.

Joint Information Center (JIC) - A facility where news media representatives can obtain emergency news information.

NextEra Energy Seabrook, LLC– Managing agent of Seabrook Station.

Non-essential Personnel - Onsite personnel who are not assigned to the Seabrook Station ERO. These personnel are evacuated from the site at an Alert or higher emergency classification.

Operational Support Center - An emergency center established for the assembly and dispatch of available skilled emergency personnel (e.g., additional Station operations and support personnel) in support of onsite emergency operations.

Plume Exposure Pathway - The pathway in which individuals receive a radiation dose due to (a) whole body external exposure due to gamma radiation from the plume and from deposited material, and (b) inhalation exposure from the passing radioactive plume.

Primary Responders - The eight ERO positions that are staffed on a rotating duty basis. These positions are notified by pager, respond to any emergency, and include the Site Emergency Director, Operations Technician, Technical Services Coordinator, Health Physics Coordinator, Response Manager, EOF Coordinator, ERO Technical Liaison and Emergency News Manager. Primary Responders are also notified by the automated telephone notification service during back-shifts, weekends and holidays of an Alert or higher emergency classification level.

Projected Dose - The amount of radiation dose estimated at the onset of the accident. It includes all the dose an individual would receive for the duration of the accident assuming no protective measures were undertaken.

Protective Actions - Emergency measures to be taken by the public to mitigate the consequences of an accident by minimizing the radiological doses that may occur if such actions were not undertaken. Protective actions would be warranted provided the reduction in the individual dose is not offset by excessive risks to individual safety in implementing such actions.

Protective Action Guides (PAG) - Pre-established radiological dose values to the public which warrant protective actions following an uncontrolled release of radioactive material.

Recovery Actions - Actions taken once the emergency condition has been controlled in order to restore stable Station conditions.

Remote Monitoring and Decontamination Area - This area is located onsite. It will be activated in the event that a radiological release occurs prior to the evacuation of site personnel, and that the prevailing wind conditions at the time make it possible for site evacuees to be contaminated.

Secondary Responders - ERO positions that are not staffed on a rotating duty basis. These positions are activated at an Alert or higher emergency classification. Secondary responders are notified by pager and, during back-shifts, weekends and holidays, by the automated telephone notification service of an Alert or higher emergency classification level.

Site - Seabrook Station property situated on a 900-acre tract of land on the western shore of Hampton Harbor in Rockingham County.

Site Area Emergency -Events are in process or have occurred that involve actual or likely major failures in plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevent effective access to , equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed the EPA Protective Action Guideline exposure levels beyond the site boundary.

Station Emergency Response Manual (SSER) - The manual containing all Emergency Response Procedures.

Subject-to-Call Responders - ERO positions that are not staffed on a rotating basis. Subject-to-Call Responders are expected to report on an all-call basis to activate emergency facilities at an Alert or higher emergency classification level. Subject-to-Call Responders are notified by pager and, during back-shifts, weekends and holidays, by the automated telephone notification service of an Alert or higher emergency classification level.

Technical Support Center (TSC) - An in-station emergency center established in close proximity to the Control Room that has the capability to acquire parameters for post-accident evaluation by technical and recovery assistance personnel. Onsite emergency response activities are directed from the TSC.

Total Effective Dose Equivalent (TEDE) - The sum of the deep dose equivalent (DDE) for external exposures and the committed effective dose equivalent (CEDE) for internal exposures.

Unusual Event -Events are in process or have occurred which indicate a potential degradation in the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

3.0 RADIOLOGICAL EMERGENCY PLAN SUMMARY

3.1 Introduction

The Seabrook Station Radiological Emergency Plan (SSREP) has been developed to ensure the safety of Station staff and the public in the event of degraded or failed Station safety systems. The SSREP identifies the emergency response organization, the planned actions of that organization, and the coordination of activities with local, state and federal agencies. The Station Emergency Response Manual contains emergency response procedures that implement the responsibilities and actions described in the SSREP.

3.2 Station Emergency Response

Once a potential emergency condition has been identified, the Unit Supervisor notifies the Shift Manager. The Shift Manager categorizes the emergency condition into one of four emergency classifications by use of the emergency classification procedure.

Once an emergency has been declared, the Shift Manager assumes the role of Short Term Emergency Director (STED). The STED is responsible for directing activation and notification of the emergency response organization (ERO). The extent of organization and facility activation varies with the severity and classification of the emergency. The STED will insure that an emergency classification announcement is made over the Station public address system and that Primary Responders are notified via a pager system.

The STED will ensure that notifications to New Hampshire and Massachusetts state authorities are initiated within 15 minutes of the emergency declaration. Notification arrangements are shown in Figure 3.1.

During an Unusual Event, the Primary Responders will be notified by pager. Pager notification will be either a text message or numeric code. Primary Responders are the Site Emergency Director, Operations Technician, Technical Services Coordinator, Health Physics Coordinator, Response Manager, EOF Coordinator, ERO Technical Liaison and Emergency News Manager. (Protected: Ref. NRC Inspection Report 50-443/98-03)

Activation of any emergency response facility at this level is at the discretion of the STED or Site Emergency Director.

Following an Alert or higher emergency declaration, Primary, Subject-to-Call and Secondary Responders will be notified by pager, and all emergency response facilities will be activated. Pager notification will be either a text message or numeric code. In certain cases, the pager notification will be forwarded to cellular telephones as authorized by Seabrook Station for station issued cell phones or individual ERO members for personal cell phones. ERO personnel who are onsite at the time of emergency declaration may also be notified by plant announcement, activation of the site siren, the LAN emergency messaging system or by word of mouth.

If an Alert or higher emergency is declared during a backshift, weekend or holiday, Primary, Subject-to-Call and Secondary Responders will be notified by the automated telephone notification service in addition to the pager system.

The Technical Support Center (TSC) will be staffed by personnel needed to provide operational and engineering support to control room personnel. The Operational Support Center (OSC) is the location from which support personnel such as maintenance, health physics, operations, chemistry, instrumentation and control, and radwaste operations are dispatched to implement actions directed by the TSC. Alternative TSC and OSC facilities are located within the EOF. TSC and OSC personnel report there for hostile action based events or other catastrophic events that prevent site access. The Emergency Operations Facility (EOF) serves as the location where offsite consequences of the accident are assessed. At the EOF, dose projections will be made, field monitoring teams will be dispatched, and protective action recommendations made to state authorities. This location also serves as the headquarters for the recovery organization. The Joint Information Center serves as the facility where joint utility, state and federal press briefings will be coordinated and held to assure timely and complete accident information is made available to the public via the news media.

The following response arrangements apply only in the event that an Alert or higher emergency is declared during an outage, i.e., the Station is in Modes 5 or 6. The goal is to keep key outage personnel readily available to return inoperable systems to service if the availability of those systems would lessen or terminate the emergency conditions.

1. Due to their outage assignments, some Seabrook Station personnel may not be readily available to report for their respective Emergency Response Organization (ERO) assignments. Depending upon which is more effective, these individuals may be directed to respond to the emergency in either their ERO role or outage assignment role.

2. Provided he or she has the necessary ERO qualifications, the on-duty Outage Control Center (OCC) Manager will assume the position of Site Emergency Director.

3. All non-ERO personnel with outage assignments, including outage workers who are not Seabrook Station employees, will assemble in the Seabrook Station Conference Center.

4. The onshift Outage Coordinator will confer with the Technical Services Coordinator concerning the status of outage-related work and what jobs, if any, will be resumed. The Outage Coordinator will continue to interface primarily with the Technical Services Coordinator.

5. The onshift Outage Coordinator will dispatch an outage management representative to the Seabrook Station Conference Center. This individual will ensure that an accountability listing is generated for the assembled personnel. Personnel needed to resume outage-related work will be directed to proceed to the OSC (or the work scene) and all others to evacuate the site.

6. Following emergency termination or declaration of Recovery, the OCC Manager will coordinate with the Site Emergency Director (if not the OCC Manager) and the Response Manager to determine the ways to communicate return-to-work instructions to outage workers (e.g., press release, vendor site managers, etc.).

In the event an emergency classification is declared based on a security event, actions will be taken per other station procedures maintained in compliance with NRC security orders. These actions may deviate from actions prescribed for radiological emergencies that are not related to security events in order to protect the health and safety of station personnel and the public. Deviations for security related events may affect the call-out of emergency response personnel, method of offsite notifications, timing and extent of emergency facility activation, directions provided to station personnel, conduct of personnel accountability, and responses of federal, state and local support organizations.

As warranted by emergency conditions and by agreement with offsite authorities, a recovery organization will be established to conduct recovery operations. Reentry into offsite areas which had been subject to radiological effects will be coordinated between the recovery organization and offsite authorities. Public information releases regarding reentry will also be coordinated.

3.3 Local and State Government Responses

The SSREP is designed to interface with the state emergency response plans and implementing procedures of Massachusetts and New Hampshire. Local governments, in coordination with the emergency management agencies of these states, have plans which, should the need arise, contain instructions to carry out specific protective measures, dependent upon various emergency conditions.

Seabrook Station is responsible for determining and conveying specific accident information, dose assessment information and protective action recommendations to the State of New Hampshire and Commonwealth of Massachusetts. It is the responsibility the States to evaluate this information, and then determine and implement appropriate protective actions in accordance with their plans and procedures. The local governments will provide the resources needed to implement these actions. Should local resources be exhausted or additional resources needed to accomplish actions in a timely manner, state governments will provide any additional support needed.

3.4 Federal Government Response

Once notified of an emergency, the NRC will evaluate the situation and determine the appropriate NRC response. Depending on the severity of the accident, the NRC will activate all or part of the federal emergency response organization in accordance with the National Response Framework, Nuclear/Radiological Incident Annex (NRF). The NRF makes available the resources and capabilities of numerous federal agencies. Principal participants will be the NRC, Department of Energy, Environmental Protection Agency and Department of Homeland Security. Should the federal agencies respond to the site vicinity, they will establish a Federal Radiological Monitoring and Assessment Center to monitor and assess the radiological consequences and a Federal Response Center to coordinate the federal support provided during the emergency. Expected Time of Arrival of the NRC Region I response would be approximately 6 hours.

Expected federal resources are specified in NUREG-0728, NRC Incident Response Plan. NRC Region 1 will deploy resources in accordance with the response modes described in NUREG-0728.

Space is designated for the NRC in the Emergency Operations Facility (EOF) in Portsmouth, NH. FTS-2001 communications links are installed for NRC use in the Technical Support Center and the EOF (see Section 7.2). Four airfields are within a one-hour drive of Seabrook Station and the EOF: Logan Airport, Boston, MA; Manchester-Boston Regional Airport, Manchester, NH; Portland Jetport, Portland, ME; and Pease International Tradeport, Portsmouth, NH.

4.0 THE AREA

4.1 The Site

Seabrook Station is situated on a 900 acre tract of land on the western shore of Hampton Harbor in Rockingham County, near the northern boundary of the Town of Seabrook, New Hampshire. The site is located approximately eight miles southeast of the Exeter, New Hampshire, five miles northeast of Amesbury, Massachusetts, and two miles west of the Hampton Harbor Inlet. The site is bordered on the east by an extensive saltwater marsh and is located on a point of land called "the Rocks," between two small tidal estuaries; the Brown's River and the Hunt's Island Creek. The City of Portsmouth is located approximately eleven miles north of the site while the Boston, Massachusetts metropolitan area is located approximately forty miles south-southwest of the site.

Seabrook Station consists of a four-loop pressurized water reactor. The Station exclusion area can generally be described as a circle of 3000 foot radius, as shown in Figure 4.1, Site Boundaries. All the area within the site boundary is controlled by NextEra Energy Seabrook, LLC.

4.2 Area Characteristics, Land Use and Demography

4.2.1 Area Characteristics

Figure 4.2, Major Routes in 10 Mile Study, shows the major transportation arteries within 10 miles of the site. The location and orientation of principal structures within the site are shown on Figure 4.3, Station Layout. The control of traffic in case of an emergency on those portions of the Brown's River and Hunt's Island Creek that fall within the site boundary comes under the authority of the State of New Hampshire.

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. 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. Table 4.1, Summary of Peak Population Estimates of Communities within 0 to 10 Miles of the Site, summarizes peak transient population estimates within 0 to 10 miles of the site.

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. Supporting documents to the Massachusetts and New Hampshire Radiological Emergency Response Plans contain listings and populations of medical-related facilities within the Seabrook Station EPZ.

The Pow Wow River State Forest occupies approximately 48 acres in the town of South Hampton, NH, approximately seven miles west of the site. The Parker River National Wildlife Refuge is located in the town of Newbury, Massachusetts, approximately nine miles south of the site, and has a total area of 6,403 acres.

4.2.2 Uses of Adjacent Lands and Waters

The Seabrook Station site is bordered on the north, east and south by marsh land extending to estuaries, streams and Hampton Harbor. The land to the west is characterized as a mix of residential, commercial, industrial and agricultural. Approximately 1.5 percent of the Town of Seabrook is designated as industrial.

Water uses in the area of the plant site are mainly recreational, including the beaches in Salisbury, Seabrook, Hampton, and North Hampton, and boat docks in Hampton Harbor. Boating activity on the Hampton and Black Water Rivers, within a 2-mile radius of Seabrook Station, is concentrated within their lower stretches, in the Hampton Harbor area. Boating activity in the Atlantic Ocean is largely concentrated within two or three miles of Hampton Harbor inlet. Provisions with the U.S. Coast Guard are made by State of New Hampshire authorities to alert and control boating traffic in this area in the event of a radiological emergency at Seabrook Station.

4.2.3 Population Distribution

Data from numerous sources were used in developing distributions and projections of permanent resident and transient populations within 10 miles of the Seabrook Station site. This area includes portions of New Hampshire and Massachusetts. The resident population distribution is shown in Figure 4.4, Resident Population Distribution within a 0 - 10 Mile Radius of Seabrook Station.

During the summer period, a transient population is associated with the beaches and other recreational facilities in the vicinity of Seabrook Station. Figure 4.6 represents an estimate of the peak transient population during summer months within a 0-10 mile radius of Seabrook Station.

4.3 Emergency Planning Zones

In accordance with the requirements specified in 10 CFR 50.33(g), emergency planning zones have been selected based upon the knowledge of the potential consequences, timing and release characteristics of a spectrum of accidents, including core melt scenarios, regardless of their extremely low probability of occurrence. As a result, an emergency planning zone concept was developed, both for the short-term plume exposure and for the longer-term ingestion exposure pathways.

Emergency Planning Zones (EPZs) are defined as the areas for which planning is needed to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The choice of the size of the Emergency Planning Zones represents a judgement on the extent of detailed planning which should be performed to assure an adequate response. Dependent upon the severity of the accident, protective actions will generally be limited to only portions of the designated EPZs, but should the need arise, actions can be undertaken for the entire zone.

In accordance with the recommended planning bases, two EPZs have been defined. The plume exposure pathway EPZ, shown in Figure 4.7, is an area designated by the jurisdictional boundaries of those communities which are within a radial distance of about 10 miles from the Station site. Table 4.4 lists communities in each state that are within the plume exposure pathway EPZ. The size of the zone is based primarily on the following considerations:

1. that the projected doses estimated for most accidents would not exceed plume exposure protective action guide (PAG) levels outside the zone;

2. that detailed planning within this area would provide a substantial base for expansion of response efforts in the unlikely event that this proved necessary; and

3. that planning within this area recognizes all the jurisdictional restraints imposed by the zone designation.

The ingestion exposure pathway EPZ, shown in Figure 4.8, is an area extending radially outward from the Station site to a distance of about 50 miles. The size of the zone is based primarily on the consideration that the downwind range within which significant contamination could occur would generally be limited to this distance because of wind shifts and travel periods. In addition, projected doses from contamination outside this zone would not exceed ingestion exposure pathway Protective Action Guide levels. Precautionary control measures relative to livestock feeds, milk products, garden produce and potable water supplies will be implemented in this area to the extent dictated by the release conditions. The State of New Hampshire will notify the State of Maine to coordinate ingestion exposure pathway emergency response actions.

Table 4.1
Summary of Peak Population
Estimates of Communities within 0 to 10 Miles of the Site

Communities	Summer Weekend
Amesbury	19,464
Brentwood	5,634
East Kingston	2,351
Exeter	21,084
Greenland	4,480
Hampton	27,229
Hampton Falls	3,401
Kensington	2,156
Kingston	6,844
Merrimac	6,361
New Castle	1,794
Newbury	6,908
Newburyport	19,428
Newfields	2,114
Newton	4,742
North Hampton	6,294
Portsmouth	40,777
Rye	7,313
Salisbury	14,498
Seabrook	13,806
South Hampton	1,610
Stratham	8,780
West Newbury	4,235

NOTE

Figures are derived from 2010 United States Census data. These figures are subject to update as part of the continuous planning process.

Table 4.4
Communities within the Seabrook Station
Plume Exposure Pathway Emergency Planning Zone

Communities Involved	Affected by Winds Blowing from
Brentwood, NH	ESE
East Kingston, NH	E-ESE
Exeter, NH	SE
Greenland, NH	S
Hampton, NH	SW-SSE
Hampton Falls, NH	ESE-SE
Hampton Beach, NH	W-WNW
Kensington, NH	ESE-E
Kingston, NH	ESE-E
Newfields, NH	SSE-SE
New Castle, NH	SSW
Newton, NH	E-ENE
North Hampton, NH	S-SSW
Portsmouth, NH	SSW
Rye, NH	SSW
Seabrook, NH	NNW-E
South Hampton, NH	E-ENE
Stratham, NH	SSE-S
Amesbury, MA	ENE-NE
Merrimac, MA	ENE
Newbury, MA	NNE-NNW
Newburyport, MA	N-NNE
Salisbury, MA	ENE-NNW
West Newbury, MA	NNE-NE

5.0 EMERGENCY CLASSIFICATION SYSTEM

Seabrook Station uses NEI 99-01, Revision 6, as the basis for the emergency classification system. The information in this chapter is derived from generic basis discussion presented in NEI 99-01, Revision 6.

5.1 Regulatory Context

Title 10, Code of Federal Regulations, Part 50 provides the regulations that govern emergency preparedness at nuclear power plants. Nuclear power reactor licensees are required to have NRC-approved "emergency response plans" for dealing with "radiological emergencies." The requirements call for both onsite and offsite emergency response plans, with the offsite plans being those approved by FEMA and used by the State and local authorities. This section deals with the utilities' approved onsite plans and procedures for response to radiological emergencies at nuclear power plants, and the links they provide to the offsite plans.

Section 50.47 of Title 10 of the Code of Federal Regulations (10 CFR 50.47), entitled "Emergency Plans," states the requirement for such plans. Part (a)(1) of this regulation states that "no operating license will be issued unless a finding is made by NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency."

The major portion of 10 CFR 50.47 lists "standards" that emergency response plans must meet. The standards constitute a detailed list of items to be addressed in the plans. Of particular importance to this project is the fourth standard, which addresses "emergency classification" and "action levels." These terms, however, are not defined in the regulation.

10 CFR 50.54, "Conditions of licenses," emphasizes that power reactor licensees must "follow, and maintain in effect, emergency plans which meet the standards in Part 50.47(b) and the requirements in Appendix E to this part." The remainder of this part deals primarily with required implementation dates.

10 CFR 50.54(q) allows licensees to make changes to emergency plans without prior Commission approval only if: (a) the changes do not decrease the effectiveness of the plans and (b) the plans, as changed, continue to meet 10 CFR 50.47(b) standards and 10 CFR 50 Appendix E requirements. The licensee must keep a record of any such changes. Proposed changes that decrease the effectiveness of the approved emergency plans may not be implemented without application to and approval by the Commission.

10 CFR 50.72 deals with "Immediate notification requirements for operating nuclear power reactors." The "immediate" notification section actually includes three types of reports: (1) immediately after notification of State or local agencies (for emergency classification events); (2) one-hour reports; and, (3) four-hour reports.

Although 10 CFR 50.72 contains significant detail, it does not define either "Emergency Class" or "Emergency Action Level." But one-hour and four-hour reports are listed as "non-emergency events," namely, those which are "not reported as a declaration of an Emergency Class." Certain 10 CFR 50.72 events can also meet the Unusual event emergency classification if they are precursors of more serious events. These situations also warrant anticipatory notification of state and local officials. (See Section 3.7, "Emergency Class Descriptions".)

By footnote, the reader is directed from 10 CFR 50.72 to 10 CFR 50 Appendix E, for information concerning "Emergency Classes."

10 CFR 50.73 describes the "Licensee event report system," which requires submittal of follow-up written reports within sixty days of required notification of NRC.

10 CFR 50 Appendix E, Section B, "Assessment Actions," mandates that emergency plans must contain "emergency action levels." EALs are to be described for: (1) determining the need for notification and participation of various agencies, and (2) determining when and what type of protective measures should be considered. Appendix E continues by stating that the EALs are to be based on: (1) in-plant conditions; (2) in-plant instrumentation; (3) onsite monitoring; and (4) offsite monitoring.

10 CFR 50 Appendix E, Section C, "Activation of Emergency Organization," also addresses "emergency classes" and "emergency action levels." This section states that EALs are to be based on: (1) onsite radiation monitoring information; (2) offsite radiation monitoring information; and, (3) readings from a number of plant sensors that indicate a potential emergency, such as containment pressure and the response of the Emergency Core Cooling System. This section also states that "emergency classes" shall include: (1) Unusual events (UNUSUAL EVENTs), (2) Alert, (3) Site Area Emergency, and (4) General Emergency.

These regulations are supplemented by various regulatory guidance documents. A significant document that has dealt specifically with EALs is NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," October 1980.

5.2 Definitions Used in Developing EAL Methodology

The following definitions apply to the Seabrook Station EAL methodology:

EMERGENCY CLASS: One of a minimum set of names or titles, established by the Nuclear Regulatory Commission (NRC), for grouping off-normal nuclear power plant conditions according to (1) their relative radiological seriousness, and (2) the time-sensitive onsite and off-site radiological emergency preparedness actions necessary to respond to such conditions. The existing radiological emergency classes, in ascending order of seriousness, are called:

- Unusual event
- Alert
- Site Area Emergency
- General Emergency

INITIATING CONDITION (IC): One of a predetermined subset of nuclear power plant conditions where either the potential exists for a radiological emergency, or such an emergency has occurred.

Discussion:

In NUREG-0654, the NRC introduced, but does not define, the term "initiating condition." Since the term is commonly used in nuclear power plant emergency planning, the definition above has been developed and combines both regulatory intent and the greatest degree of common usage among utilities.

Defined in this manner, an IC is an emergency condition which sets it apart from the broad class of conditions that may or may not have the potential to escalate into a radiological emergency. It can be a continuous, measurable function that is outside technical specifications, such as elevated RCS temperature or falling reactor coolant level (a symptom). It also encompasses occurrences such as FIRE (an event) or reactor coolant pipe failure (an event or a barrier breach).

EMERGENCY ACTION LEVEL (EAL): A pre-determined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, observable event; results of analyses; entry into specific emergency operating procedures; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

Discussion:

The term "emergency action level" has been defined by example in the regulations, as noted in the above discussion concerning regulatory background. The term had not, however, been defined operationally in a manner to address all contingencies. There are times when an EAL will be a threshold point on a measurable continuous function, such as a primary system coolant leak that has exceeded technical specifications for a specific plant.

5.3 Recognition Categories

ICs and EALs can be grouped in one of several schemes. This generic classification scheme incorporates symptom-based, event-based, and barrier-based ICs and EALs.

The symptom-based category for ICs and EALs refers to those indicators that are measurable over some continuous spectrum, such as core temperature, coolant levels, containment pressure, etc. When one or more of these indicators begin to show off-normal readings, reactor operators are trained to identify the probable causes and potential consequences of these "symptoms" and take corrective action. The level of seriousness indicated by these symptoms depends on the degree to which they have exceeded technical specifications, the other symptoms or events that are occurring contemporaneously, and the capability of the licensed operators to gain control and bring the indicator back to safe levels.

Event-based EALs and ICs refer to occurrences with potential safety significance, such as the failure of a high-pressure safety injection pump, a safety valve failure, or a loss of electric power to some part of the plant. The range of seriousness of these "events" is dependent on the location, number of contemporaneous events, remaining plant safety margin, etc.

Barrier-based EALs and ICs refer to the level of challenge to principal barriers used to assure containment of radioactive materials contained within a nuclear power plant. For radioactive materials that are contained within the reactor core, these barriers are: fuel cladding, reactor coolant system pressure boundary, and containment. The level of challenge to these barriers encompasses the extent of damage (loss or potential loss) and the number of barriers concurrently under challenge. In reality, barrier-based EALs are a subset of symptom-based EALs that deal with symptoms indicating fission product barrier challenges. These barrier-based EALs are primarily derived from Emergency Operating Procedure (EOP) Critical Safety Function (CSF) Status Tree Monitoring (or their equivalent). Challenge to one or more barriers generally is initially identified through instrument readings and periodic sampling. Under present barrier-based EALs, deterioration of the reactor coolant system pressure boundary or the fuel clad barrier usually indicates an "Alert" condition, two barriers under challenge a Site Area Emergency, and loss of two barriers with the third barrier under challenge is a General Emergency. The fission product barrier matrix described in Category F is a hybrid approach that recognizes that some events may represent a challenge to more than one barrier, and that the containment barrier is weighted less than the reactor coolant system pressure boundary and the fuel clad barriers.

Symptom-based ICs and EALs are most easily identified when the plant is in a normal startup, operating or hot shutdown mode of operation, with all of the barriers in place and the plant's instrumentation and emergency safeguards features fully operational as required by technical specifications. It is under these circumstances that the operations staff has the most direct information of the plant's systems, displayed in the main control room. As the plant moves through the decay heat removal process toward cold shutdown and refueling, barriers to fission products are reduced (i.e., reactor coolant system pressure boundary may be open) and fewer of the safety systems required for power operation are required to be fully operational. Under these plant operating modes, the identification of an IC in the plant's operating and safety systems becomes more event-based, as the instrumentation to detect symptoms of a developing problem may not be fully effective; and engineered safeguards systems, such as the Emergency Core Cooling System (ECCS), are partially disabled as permitted by the plant's Technical Specifications.

Barrier-based ICs and EALs also are heavily dependent on the ability to monitor instruments that indicate the condition of plant operating and safety systems. Fuel cladding integrity and reactor coolant levels can be monitored through several indicators when the plant is in a normal operating mode, but this capability is much more limited when the plant is in a refueling mode, when many of these indicators are disconnected or off-scale. The need for this instrumentation is lessened, however, and alternate instrumentation is placed in service when the plant is shut down.

It is important to note that in some operating modes there may not be definitive and unambiguous indicators of containment integrity available to control room personnel. For this reason, barrier-based EALs should not place undue reliance on assessments of containment integrity in all operating modes. Generally, Technical Specifications relax maintaining containment integrity requirements in modes 5 and 6 in order to provide flexibility in performance of specific tasks during shutdown conditions. Containment pressure and temperature indications may not increase if there is a pre-existing breach of containment integrity. At most plants, a large portion of the containment's exterior cannot be monitored for leakage by radiation monitors.

Several categories of emergencies have no instrumentation to indicate a developing problem, or the event may be identified before any other indications are recognized. A reactor coolant pipe could break; FIRE alarms could sound; radioactive materials could be released; and any number of other events can occur that would place the plant in an emergency condition with little warning. For emergencies related to the reactor system and safety systems, the ICs shift to an event based scheme as the plant mode moves toward cold shutdown and refueling modes. For non-radiological events, such as FIRE, external floods, wind loads, etc., as described in NUREG-0654 Appendix 1, event-based ICs are the norm.

In many cases, a combination of symptom-, event- and barrier-based ICs will be present as an emergency develops. In a loss of coolant accident (LOCA), for example:

- Coolant level is dropping; (symptom)
- There is a leak of some magnitude in the system (pipe break, safety valve stuck open) that exceeds plant capabilities to make up the loss; (barrier breach or event)
- Core (coolant) temperature is rising; (symptom) and
- At some level, fuel failure begins with indicators such as high coolant activity samples, etc. (barrier breach or symptom)

5.4 Emergency Class Descriptions

There are three considerations related to emergency classes. These are:

(1) The potential impact on radiological safety, either as now known or as can be reasonably projected;

(2) How far the plant is beyond its predefined design, safety, and operating envelopes; and

(3) Whether or not conditions that threaten health are expected to be confined to within the site boundary.

The ICs deal explicitly with radiological safety impact by escalating from levels corresponding to releases within regulatory limits to releases beyond EPA Protective Action Guideline (PAG) plume exposure levels. In addition, the "Discussion" sections below include offsite dose consequence considerations which were not included in NUREG-0654 Appendix 1.

UNUSUAL EVENT: Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Discussion:

Potential degradation of the level of safety of the plant is indicated primarily by exceeding plant technical specification Limiting Condition of Operation (LCO) allowable action statement time for achieving required mode change. Precursors of more serious events should also be included because precursors do represent a potential degradation in the level of safety of the plant. Minor releases of radioactive materials are included. In this emergency class, however, releases do not require monitoring or offsite response.

ALERT: Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Discussion:

Rather than discussing the distinguishing features of "potential degradation" and "potential substantial degradation," a comparative approach would be to determine whether increased monitoring of plant functions is warranted at the Alert level as a result of safety system degradation. This addresses the operations staff's need for help, independent of whether an actual decrease in plant safety is determined. This increased monitoring can then be used to better determine the actual plant safety state, whether escalation to a higher emergency class is warranted, or whether de-escalation or termination of the emergency class declaration is warranted. Dose consequences from these events are small fractions of the EPA PAG plume exposure levels, i.e., about 10 mrem to 100 mrem TEDE.

SITE AREA EMERGENCY: Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

Discussion:

The discriminator (threshold) between Site Area Emergency and General Emergency is whether or not the EPA PAG plume exposure levels are expected to be exceeded outside the site boundary. This threshold, in addition to dynamic dose assessment considerations discussed in the EAL guidelines, clearly addresses NRC and offsite emergency response agency concerns as to timely declaration of a General Emergency.

GENERAL EMERGENCY: Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

Discussion:

The bottom line for the General Emergency is whether evacuation or sheltering of the general public is indicated based on EPA PAGs, and therefore should be interpreted to include radionuclide release regardless of cause. To better assure timely notification, EALs in this category must primarily be expressed in terms of plant function status, with secondary reliance on dose projection. In terms of fission product barriers, loss of two barriers with loss or potential loss of the third barrier constitutes a General Emergency.

5.5 Emergency Class Thresholds

The most common bases for establishing these boundaries are the technical specifications and setpoints for each plant that have been developed in the design basis calculations and the Updated Final Safety Analysis Report (UFSAR).

For those conditions that are easily measurable and instrumented, the boundary is likely to be the EAL (observable by plant staff, instrument reading, alarm setpoint, etc.) that indicates entry into a particular emergency class. For example, the main steam line radiation monitor may detect high radiation that triggers an alarm. That radiation level also may be the setpoint that closes the main steam isolation valves (MSIV) and initiates the reactor trip. This same radiation level threshold, depending on plant-specific parameters, also may be the appropriate EAL for a direct entry into an emergency class.

In addition to the continuously measurable indicators, such as coolant temperature, coolant levels, leak rates, containment pressure, etc., the UFSAR provides indications of the consequences associated with design basis events. Examples would include steam pipe breaks, MSIV malfunctions, and other anticipated events that, upon occurrence, place the plant immediately into an emergency class.

Another approach for defining these boundaries is the use of a plant-specific probabilistic safety assessment (PSA - also known as probabilistic risk assessment, PRA). A PSA has been completed for Seabrook Station. PSAs can be used as a good first approximation of the relevant ICs and risk associated with emergency conditions for existing plants. Generic insights from PSAs and related severe accident assessments which apply to EALs and emergency class determinations are:

1. Prolonged loss of all AC power events are extremely important. This would indicate that should this occur, and AC power is not restored within 15 minutes, entry into the emergency class at no lower than a Site Area Emergency, when the plant was initially at power, would be appropriate. This implies that precursors to loss of all AC power events should appropriately be included in the EAL structure.

2. For severe core damage events, uncertainties exist in phenomena important to accident progressions leading to containment failure. Because of these uncertainties, predicting containment integrity may be difficult in these conditions. This is why maintaining containment integrity alone following sequences leading to severe core damage may be an insufficient basis for not escalating to a General Emergency.

3. EAL methodology must be sufficiently rigorous to cover risk-significant sequences such as containment bypass, large LOCA with early containment failure, station blackout greater than 4 hours (e.g., LOCA consequences of Station Blackout), and reactor coolant pump seal failure.

Another critical element of the analysis to arrive at these threshold (boundary) conditions is the time that the plant might stay in that condition before moving to a higher emergency class. In particular, station blackout coping analyses performed in response to 10 CFR 50.63 and Regulatory Guide 1.155, "Station Blackout," is used to determine whether a Site Area Emergency or a General Emergency is indicated. The time dimension is critical to the EAL since the purpose of the emergency class for state and local officials is to notify them of the level of mobilization that may be necessary to handle the emergency. This is particularly true when a "Site Area Emergency" or "General Emergency" is imminent.

Regardless of whether or not containment integrity is challenged, it is possible for significant radioactive inventory within containment to result in EPA PAG plume exposure levels being exceeded even assuming containment is within technical specification allowable leakage rates. With or without containment challenge, however, a major release of radioactivity requiring offsite protection actions from core damage is not possible unless a major failure of fuel cladding allows radioactive material to be released from the core into the reactor coolant. NUREG-1228, "Source Estimations During Incident Response to Severe Nuclear Power Plant Accidents," indicates that such conditions do not exist when the amount of clad damage is less than 20%.

5.6 Emergency Action Levels

With the emergency classes defined, the thresholds that must be met for each EAL to be placed under the emergency class can be determined. There are two basic approaches to determining these EALs. EALs and emergency class boundaries coincide for those continuously measurable, instrumented ICs, such as radioactivity, core temperature, coolant levels, etc. For these ICs, the EAL will be the threshold reading that most closely corresponds to the emergency class description using the best available information.

For discrete (discontinuous) events, the approach will have to be somewhat different. Typically, in this category are internal and external hazards such as fire or earthquake. The purpose for including hazards in EALs is to assure that station personnel and offsite emergency response organizations are prepared to deal with consequential damage these hazards may cause. If, indeed, hazards have caused damage to safety functions or fission product barriers, this should be confirmed by symptoms or by observation of such failures. Therefore, it may be appropriate to enter an emergency for events approaching or exceeding design basis limits such as Operating Basis Earthquake, design basis wind loads, FIRE within VITAL AREAs, etc. This would give the operating staff additional support and improved ability to determine the extent of plant damage. If damage to barriers or challenges to Critical Safety Functions (CSFs) have occurred or are identified, then the additional support can be used to escalate or terminate the Emergency Class based on what has been found. Of course, security events must reflect potential for increasing security threat levels.

Plant emergency operating procedures (EOPs) are designed to maintain and/or restore a set of CSFs which are listed in the order of priority for restoration efforts during accident conditions. The Seabrook Station CSF set includes:

- Subcriticality
- Core cooling
- Heat sink
- Pressure-temperature-stress (RCS integrity)
- Containment
- RCS inventory
- Emergency Coolant Recirculation
- Radiation/RDMS Display

There are diverse and redundant plant systems to support each CSF. By monitoring the CSFs instead of the individual system component status, the impact of multiple events is inherently addressed, e.g., the number of operable components available to maintain the critical safety function.

The EOPs contain detailed instructions regarding the monitoring of these functions and provides a scheme for classifying the significance of the challenge to the functions. In providing EALs based on these schemes, the emergency classification can flow from the EOP assessment rather than being based on a separate EAL assessment. This is desirable as it reduces ambiguity and reduces the time necessary to classify the event.

As an example, consider that the Westinghouse Owner's Group (WOG) Emergency Response Guidelines (ERGs) classify challenges as YELLOW, ORANGE, and RED paths. If the core exit thermocouples exceed 1,100 degrees F or 725 degrees F with low reactor vessel water level, a RED path condition exists. The ERG considers a RED path as "... an extreme challenge to a plant function necessary for the protection of the public ..." This is almost identical to the present NRC NUREG-0654 description of a site area emergency "... actual or likely failures of plant functions needed for the protection of the public ..." It reasonably follows that if any CSF enters a RED path, a site area emergency exists. A general emergency could be considered to exist if core cooling CSF is in a RED path and the EOP function restoration procedures have not been successful in restoring core cooling.

5.7 Treatment of Multiple Events and Emergency Class Upgrading

The emergency class declared is based on the highest EAL reached. For example, two Alerts remain in the Alert category. Or, an Alert and a Site Area Emergency is a Site Area Emergency.

Although the majority of the EALs provide very specific thresholds, the STED/SED must remain alert to events or conditions that lead to the conclusion that exceeding the EAL threshold is imminent. If, in the judgment of the STED/SED, an imminent situation is at hand, the classification should be made as if the threshold has been exceeded. While this is particularly prudent at the higher emergency classes (as the early classification may provide for more effective implementation of protective measures), it is nonetheless applicable to all emergency classes.

5.8 Emergency Class Downgrading

Another important aspect of usable EAL guidance is the consideration of what to do when the risk posed by an emergency is clearly decreasing. Seabrook Station uses a combination approach involving recovery from General Emergencies and some Site Area Emergencies and termination from Unusual Events, Alerts, and certain Site Area Emergencies causing no long-term plant damage. Downgrading to lower emergency classes adds notifications but may have merit under certain circumstances.

5.9 Classifying Transient Events

For some events, the condition may be corrected before a declaration has been made. For example, an emergency classification is warranted when automatic and manual actions taken within the control room do not result in a required reactor trip. However, it is likely that actions taken outside of the control room will be successful, probably before the STED/SED classifies the event. The key consideration in this situation is to determine whether or not further plant damage occurred while the corrective actions were being taken. In some situations, this can be readily determined, in other situations, further analyses (e.g., coolant radiochemistry sampling, may be necessary).

If the emergency-related indications completely clear before a declaration of an emergency classification level has been made, then no emergency classification is required. The Shift Manager shall notify the Emergency News Manager within one hour of the termination of the emergency-related indications that emergency-related indications briefly existed, but cleared prior to the declaration of an emergency classification. The Emergency News Manager will initiate state notifications per good neighbor notification procedures. The event shall be reported to the NRC in accordance with 10 CFR 50.72 and 50.73 per LI-AA-102-1001, Regulatory Reporting, and within 1 hour of the event.

If emergency-related indications are received and later cleared, and after the fact it is determined that an emergency classification was warranted but not made, then no emergency classification is required. The Shift Manager shall notify the Emergency News Manager within one hour of discovery that an emergency classification was warranted but not declared and that emergency-related indications no longer exist. The Emergency News Manager will initiate state notifications per good neighbor notification procedures. The event shall be reported to the NRC in accordance with 10 CFR 50.72 and 50.73 per LI-AA-102-1001, Regulatory Reporting, and within 1 hour of the event.

If emergency-related indications are received and reduce in severity, such that the emergency classification went from an earlier higher level to a current lower level, the current lower level emergency should be declared.

Reporting requirements of 10 CFR 50.72 are applicable and the guidance of NUREG-1022, Rev. 1, Section 3 should be applied.

5.10 Cold Shutdown/Refueling IC/EALs

Generic Letter 88–17, Loss of Decay Heat Removal, SECY–91–283, Evaluation of Shutdown and Low Power Risk Issues, SECY–93–190, Regulatory Approach to Shutdown and Low–power Operation, NUREG–1449, Shutdown and Low–Power Operation at Commercial Nuclear Power Plants in the United States, and NUMARC 91–06, Guidelines for Industry Actions to Assess Shutdown Management, all address nuclear power plant safety issues that are applicable to periods when the plant is shutdown. These evaluations identify a number of variables which significantly affect the probability and consequences of losing decay heat removal capability during shutdown periods. In addition, NUREG–1449 discusses that the need to respond appropriately, including emergency classification and notification, still exists during cold–shutdown and refueling conditions. Through use of NEI 99-01, Revision 6, the Seabrook Station emergency classification system addresses issues concerning shutdown effects on declaring emergencies discussed in SECY–93–190 and NUREG–1449.

Given the variability of plant configurations (e.g., systems out–of–service for maintenance, containment open, reduced AC power redundancy, time since shutdown) during these periods, the consequences of any given initiating event can vary greatly. For example, a loss of decay heat removal capability that occurs at the end of an extended outage has less significance than a similar loss occurring during the first week after shutdown. Compounding these events is the likelihood that instrumentation necessary for assessment may also be inoperable. The cold shutdown and refueling EALs are based on performance capability to the extent possible with consideration given to RCS integrity, containment closure, and fuel clad integrity for the applicable modes.

The initiating conditions and example emergency actions levels associated directly with Cold Shutdown or Refueling safety function are presented in Recognition Category C, Cold Shutdown/Refueling.

5.11 ISFSI IC/EALs

An Independent spent fuel storage installation (ISFSI) is a complex that is designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage. The Final Rule governing Emergency Planning Licensing Requirements for Independent Spent Fuel Storage Facilities (Federal Register Volume 60, Number 120 June 22, 1995, Pages 32430-32442) indicated that a significant amount of the radioactive material contained within a cask must escape its packaging and enter the biosphere for there to be a significant environmental impact resulting from an accident involving the dry storage of spent nuclear fuel. Formal offsite planning is not required because the postulated worst-case accident involving an ISFSI has insignificant consequences to the public health and safety.

Recognition Category E (Events Related to ISFSI) is applicable to licensees using their 10 CFR 50 emergency plan to fulfill the requirements of 10 CFR 72.32. The emergency classifications for Recognition Category E are those provided by NUREG 0654/FEMA Rep.1 in accordance with 10 CFR 50.47. The classification of an ISFSI event under provisions of a 10 CFR 50.47 emergency plan should be consistent with the definitions of the emergency classes as used by that plan.

EMERGENCY INITIATING CONDITION MATRIX
Modes 1, 2, 3, and 4

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		UNUSUAL EVENT	
Category R- Abnormal Rad Levels/Radiological Effluent							
RG1	Release of gaseous radioactivity resulting in offsite dose > 1,000 mrem TEDE or 5,000 mrem thyroid CDE *Op. Modes: All*	**RS1**	Release of gaseous radioactivity resulting in offsite dose > 100 mrem TEDE or 500 mrem thyroid CDE *Op. Modes: All*	**RA1**	Release of gaseous or liquid radioactivity resulting in offsite dose > 10 mrem TEDE or 50 mrem thyroid CDE *Op. Modes: All*	**RU1**	Release of gaseous or liquid radioactivity > 2 times the ODCM limits for ≥ 60 minutes *Op. Modes: All*
RG2	Spent fuel pool level cannot be restored to at least 1.5 ft. (Level 3) for 60 minutes or longer. *Op. Modes: All*	**RS2**	Spent fuel pool level at 1.5 ft. (Level 3) *Op. Modes: All*	**RA2**	Significant lowering of water level above, or damage to, irradiated fuel. *Op. Modes: All*	**RU2**	UNPLANNED loss of water level above irradiated fuel *Op. Modes: All*
				RA3	Radiation levels that IMPEDE access to equipment necessary for normal plant operations, shutdown or cooldown. *Op. Modes: All*		
Category E - Events Related to ISFSI Malfunction							
						EU1	Damage to a loaded cask CONFINEMENT BOUNDARY *Op. Mode: All*
Category H - Hazards and Other Conditions Affecting Plant Safety							
		HS1	HOSTILE ACTION within the PROTECTED AREA. *Op. Modes: All*	**HA1**	HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes *Op. Modes: All*	**HU1**	Confirmed SECURITY CONDITION or threat. *Op. Modes: All*
						HU2	Seismic event greater than OBE levels. *Op. Modes: All*
						HU3	Hazardous event. *Op. Modes: All*
						HU4	FIRE potentially degrading the level of safety of the plant. *Op. Modes: All*
				HA5	Gaseous release impeding access to equipment necessary for normal plant operations, shutdown or cooldown *Op. Modes: All*		
		HS6	Inability to control a key safety function from outside the Control Room *Op. Modes: All*	**HA6**	Control Room evacuation resulting in transfer of plant control to alternate locations *Op. Modes: All*		
HG7	Other conditions exist which in the judgment of the STED/SED warrant declaration of a General Emergency *Op. Modes: All*	**HS7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of a Site Area Emergency *Op. Modes: All*	**HA7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of an Alert *Op. Modes: All*	**HU7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of an Unusual Event *Op. Modes: All*
Category M - System Malfunction							
MG1	Prolonged loss of all offsite and all onsite AC power to emergency buses **AND** • Restoration of at least one AC emergency bus in less than 4 hours is not likely. **OR** • Core Cooling (C) CSF RED entry conditions met *Op. Modes: 1, 2, 3, 4*	**MS1**	Loss of all offsite and all onsite AC power to emergency buses for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*	**MA1**	Loss of all but one AC power source to emergency buses for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*	**MU1**	Loss of all offsite AC power capability to emergency buses for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*
				MA2	UNPLANNED loss of Control Room indications for 15 minutes or longer with a significant transient in progress. *Op. Modes: 1, 2, 3, 4*	**MU2**	UNPLANNED loss of Control Room indications for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*
						MU3	Reactor coolant activity greater than Technical Specification allowable limits *Op. Modes: 1, 2, 3, 4*
						MU4	RCS leakage for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*
		MS5	Inability to shutdown the reactor causing a challenge to core cooling or RCS heat removal *Op. Modes: 1*	**MA5**	Automatic or manual trip fails to shutdown the reactor, and subsequent manual actions taken at the Main Control Board are not successful in shutting down the reactor *Op. Modes: 1*	**MU5**	Automatic or manual trip fails to shutdown the reactor *Op. Modes: 1*
						MU6	Loss of all onsite or offsite communications capabilities *Op. Modes: 1, 2, 3, 4*
						MU7	Failure to isolate containment or loss of containment pressure control *Op Modes: 1, 2, 3, 4*
MG8	Loss of all AC and Vital DC power sources for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*	**MS8**	Loss of all Vital DC power for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*				
				MA9	Hazardous event affecting a SAFETY SYSTEM needed for the current *Op. Modes: 1, 2, 3, 4*		

Modes 1, 2, 3 and 4

EMERGENCY INITIATING CONDITION MATRIX
Modes 5, 6, and Defueled

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		UNUSUAL EVENT	
Category R - Abnormal Rad Levels/Radiological Effluent							
RG1	Release of gaseous radioactivity resulting in offsite dose > 1,000 mrem TEDE or 5,000 mrem thyroid CDE *Op. Modes: All*	**RS1**	Release of gaseous radioactivity resulting in offsite dose > 100 mrem TEDE or 500 mrem thyroid CDE *Op. Modes: All*	**RA1**	Release of gaseous or liquid radioactivity resulting in offsite dose > 10 mrem TEDE or 50 mrem thyroid CDE *Op. Modes: All*	**RU1**	Release of gaseous or liquid radioactivity > 2 times the ODCM limits for ≥ 60 minutes *Op. Modes: All*
RG2	Spent fuel pool level cannot be restored to at least 1.5 ft. (Level 3) for 60 minutes or longer. *Op. Modes: All*	**RS2**	Spent fuel pool level at 1.5 ft. (Level 3) *Op. Modes: All*	**RA2**	Significant lowering of water level above, or damage to, irradiated fuel. *Op. Modes: All*	**RU2**	UNPLANNED loss of water level above irradiated fuel *Op. Modes: All*
				RA3	Radiation levels that IMPEDE access to equipment necessary for normal plant operations, shutdown or cooldown. *Op. Modes: All*		
Category E - Events Related to ISFSI Malfunction							
						EU1	Damage to a loaded cask CONFINEMENT BOUNDARY *Op. Mode: All*
Category H - Hazards and Other Conditions Affecting Plant Safety							
		HS1	HOSTILE ACTION within the PROTECTED AREA *Op. Modes: All*	**HA1**	HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes *Op. Modes: All*	**HU1**	Confirmed SECURITY CONDITION or threat *Op. Modes: All*
						HU2	Seismic event greater than OBE levels. *Op. Modes: All*
						HU3	Hazardous event. *Op. Modes: All*
						HU4	FIRE potentially degrading the level of safety of the plant. *Op. Modes: All*
				HA5	Gaseous release impeding access to equipment necessary for normal plant operations, shutdown or cooldown *Op. Modes: All*		
		HS6	Inability to control a key safety function from outside the Control Room *Op. Modes: All*	**HA6**	Control Room evacuation resulting in transfer of plant control to alternate locations *Op. Modes: All*		
HG7	Other conditions exist which in the judgment of the STED/SED warrant declaration of a General Emergency *Op. Modes: All*	**HS7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of a Site Area Emergency *Op. Modes: All*	**HA7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of an Alert *Op. Modes: All*	**HU7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of an Unusual Event *Op. Modes: All*
Category C - Cold Shutdown/Refueling System Malfunction							
CG1	Loss of reactor vessel/RCS inventory affecting fuel clad integrity with containment challenged *Op. Modes: 5, 6*	**CS1**	Loss of reactor vessel/RCS inventory affecting core decay heat removal capability *Op. Modes: 5, 6*	**CA1**	Loss of reactor vessel/RCS inventory *Op. Modes: 5, 6*	**CU1**	UNPLANNED loss of reactor vessel/RCS inventory for 15 minutes or longer *Op. Modes: 5, 6*
				CA2	Loss of all offsite and all onsite AC power to emergency buses for 15 minutes or longer *Op. Modes: 5, 6, Defueled*	**CU2**	Loss of all but one AC power source to emergency buses for 15 minutes or longer *Op. Modes: 5, 6, Defueled*
				CA3	Inability to maintain the plant in cold shutdown *Op. Modes: 5, 6*	**CU3**	UNPLANNED increase in RCS temperature. **OR** Loss of ALL RCS temperature and reactor vessel/RCS level indication for 15 minutes or longer *Op. Modes: 5, 6*
						CU4	Loss of Vital DC power for 15 minutes or longer *Op. Modes: 5, 6*
						CU5	Loss of all onsite or offsite communications capabilities *Op. Modes: 5, 6, Defueled*
				CA6	Hazardous event affecting a SAFETY SYSTEM needed for the current operating mode *Op. Modes: 5, 6*		

Modes 5. 6. and Defueled

Figure 5.7
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FISSION PRODUCT BARRIER DEGRADATION MATRIX
Modes 1, 2, 3, and 4

	Fuel Clad Barrier		Reactor Coolant System Barrier		Containment Barrier	
Sub-Category	**Loss**	**Potential Loss**	**Loss**	**Potential Loss**	**Loss**	**Potential Loss**
1. CSF Status	Core Cooling (C) RED entry conditions met. (Note 1)	Core Cooling (C) ORANGE entry conditions met **OR** Heat Sink (H) RED entry conditions met. (Note 1)		RCS Integrity (P) RED entry conditions met with RCS press > 300 psig. **OR** Heat Sink (H) RED entry conditions met. (Note 1)		Core Cooling (C) RED entry conditions met for 15 minutes or longer OR Containment (Z) CSF – RED entry conditions met. (Note 1)
2. RCS Activity	RCS activity > 300 uCi/gm Dose Equivalent I-131 (as determined per Procedure CS0925.01, Reactor Coolant Post Accident Sampling)					
3. RCS Leakage			An automatic or manual SI actuation is required by EITHER of the following: 1. UNISOLABLE RCS leakage OR 2. SG tube RUPTURE	Operation of a second charging pump in the normal charging mode is required by EITHER of the following: 1. UNISOLABLE RCS leakage OR 2. SG tube leakage.	Indications of RCS leakage outside of containment.	
4. S/G Rupture or Fault					A leaking or RUPTURED SG is FAULTED outside of containment.	
5. Containment Integrity					Containment isolation is required AND EITHER of the following: 1. Containment integrity has been lost based on STED/SED judgment. OR 2. UNISOLABLE pathway from the containment to the environment exists.	Containment H2 concentration ≥ 6% OR 1. Containment pressure > 18 psig AND 2. Less than one full train of Containment Building Spray (CBS) is operating per design for 15 minutes or longer
6. Containment Radiation Monitor	Post-LOCA Radiation Monitors RM-6576A-1 or RM-6576B-1 ≥ 95 R/hr		Post-LOCA Radiation Monitors RM-6576A-1 or RM-6576B-1 ≥ 16 R/hr			Post-LOCA Radiation Monitors RM-6576A-1 or RM-6576B-1 ≥ 1,305 R/hr
7. STED/SED Judgment	Any condition in the opinion of the STED/SED that indicates a Loss of the Fuel Clad Barrier.	Any condition in the opinion of the STED/SED that indicates a Potential Loss of the Fuel Clad Barrier.	Any condition in the opinion of the STED/SED that indicates a Loss of the RCS Barrier.	Any condition in the opinion of the STED/SED that indicates a Potential Loss of the RCS Barrier.	Any condition in the opinion of the STED/SED that indicates a Loss of the Containment Barrier.	Any condition in the opinion of the STED/SED that indicates a Potential Loss of the Containment Barrier.

Barrier Status		**General Emergency** **FG1** - Loss of ANY Two Barriers AND Loss or Potential Loss of Third Barrier				**Site Area Emergency** **FS1** - Loss or Potential Loss of ANY Two Barriers												**Alert** **FA1** - ANY Loss or Potential Loss of EITHER Fuel Clad or RCS Barriers			
Fuel Clad Loss	Enter ✓➜																				
Fuel Clad Potential Loss	Enter ✓➜																				
RCS Loss	Enter ✓➜																				
RCS Potential Loss	Enter ✓➜																				
Containment Loss	Enter ✓➜																				
Containment Potential Loss	Enter ✓➜																				
Emergency Classification ➜		GE	GE	GE	GE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	ALERT	ALERT	ALERT	ALERT

NOTE 1: Refer to ER 1.1, Section 1.1, Discussion concerning the proper use of CSFSTs as EALs

6.0 EMERGENCY FACILITIES AND EQUIPMENT

Following the declaration of an emergency, the activation of the Emergency Response Organization (ERO) will be accomplished within a number of dedicated emergency facilities. Figure 4.3 indicates the relative locations of Station facilities within the site. Figure 6.1 represents the locations of offsite support organization emergency operations centers relative to the Seabrook Station site. Descriptions of Seabrook Station facilities follow in Section 6.1. A description of emergency equipment and inventories is found in the Emergency Preparedness Department Facility Inventory Manual (EPFI).

6.1 Emergency Centers

6.1.1 Technical Support Center

A Technical Support Center (TSC) has been established in the Control Building to direct post-accident evaluation and assist in recovery actions. The TSC is habitable to the same degree as the Control Room for postulated accident conditions. The TSC has the capability to access and display Station parameters, including the Safety Parameter Display System (SPDS), independent from actions in the Control Room. The TSC is included in the Station emergency communications network. The TSC has access to the Seabrook Updated Final Safety Analysis Report (UFSAR), the Seabrook Station Radiological Emergency Plan (SSREP) and procedures, and a selected set of system prints, system flow diagrams, cable/wiring diagrams and equipment specifications. The TSC has the capability to assess radiological habitability conditions by monitoring for direct radiation and airborne particulates, and sampling for airborne radioiodines. Figure 8.6 defines the TSC organization. The TSC and TSC Document Control Center are depicted in Figure 6.2.

An alternative facility for TSC responders has been identified in the EOF for hostile action based events or other catastrophic events that prevent site access in accordance with 10 CFR 50 Appendix E, Section IV, E, 8, d. Procedures for TSC responders are located in the alternative facility.

6.1.2 Operational Support Center

The Operational Support Center (OSC), located on the first floor of the Administration and Service Building, provides a general assembly/dispatch area for assigned Station manpower needed to effect protective and corrective actions in support of the emergency situation. The OSC is included in the Station emergency communications network. Emergency equipment is provided at the Radiological Controlled Area (RCA) access point located within the OSC. Tools required by repair teams are provided at tool cribs maintained by the Maintenance Department in the RCA and other locations in the plant. Should conditions warrant evacuation of this center, the TSC will assume OSC functions; otherwise the OSC will remain active and staffed until terminated by the Site Emergency Director. Figure 8.5 defines the OSC organization. A layout of the OSC is provided in Figure 6.5.

An alternative facility for OSC responders has been identified in the EOF for hostile action based events or other catastrophic events that prevent site access in accordance with 10 CFR 50 Appendix E, Section IV, E, 8, d. Procedures for OSC responders are located in the alternative facility.

6.1.3 Emergency Operations Facility

An Emergency Operations Facility (EOF) is located at the Pease International Tradeport in Portsmouth, New Hampshire. The EOF shown in Figure 6.6 serves as a base of operations for radiological assessment, overall emergency response organization management and recovery activities. The State of New Hampshire Incident Field Office is physically co-located with the EOF. This arrangement ensures close coordination with State emergency response staff.

The EOF is included in the Station emergency communications network, as described in Section 7.0, which links all emergency response facilities, monitoring and assistance teams dispatched from the EOF, and offsite agencies. The EOF has the capability to access and display Station parameters, including the Safety Parameter Display System, independent of both the TSC and Control Room. Backup power to the EOF is available.

Radiological assessment, monitoring and evaluation, and protective action recommendation formulation are directed from the EOF. The EOF organization shown in Figure 8.4 is responsible for continuous evaluation and coordination of all Seabrook Station activities related to an emergency having, or potentially having, adverse radiological consequences. Copies of selected building prints and general building layouts are available via the LAN and on disk and can be printed out at the EOF. Emergency planning documents applicable to Seabrook Station, including area maps, emergency response procedures, State and local emergency plans are available in the EOF. The Seabrook Station updated UFSAR is available via the LAN. A backup disk version is maintained at the EOF.

The EOF has sufficient assembly space and is designed to accommodate responding representatives from government and industry. The EOF serves as the base of operations for Station material control, coordination of industry support, and establishment of a long-term organization to recover from the accident conditions and results. The EOF can serve as a centralized meeting location for key representatives from offsite authorities and Station management. The EOF can also act as a focal point for the coordination and acquisition of company resources and liaison with the Seabrook Station Joint Owners, American Nuclear Insurers and Institute of Nuclear Power Operations (INPO).

Emergency equipment maintained at the EOF includes gear necessary to assess radiological habitability. This consists of monitoring for direct radiation, and sampling for airborne radioparticulates and radioiodines. The EOF provides information needed by Federal, State and local authorities for implementation of offsite emergency plans.

6.1.4 Support for Radiological Analysis of Environmental Samples

The Environmental Analysts will be activated at an Alert, Site Area and General Emergency to provide radiological analysis of environmental samples in the EOF. The Environmental Analysts will respond to the EOF to utilize radio-analysis equipment maintained in the EOF to analyze silver zeolite cartridges and particulate filters used by field monitoring and environmental sampling teams to collect air samples in the field.

More definitive analysis of environmental samples will be available from GEL Laboratories. GEL is capable of providing on a continuous basis a full spectrum of radio-analysis of environmental samples which includes identification of principal accident radio-nuclides and their evaluation against EPA dose guidelines for relocation and FDA derived intervention levels associated with consumption of contaminated foods.

6.1.5 Joint Information Center

The Joint Information center (JIC) is co-located with the EOF in Portsmouth, New Hampshire. The center will be activated in order to provide a centralized location for holding joint utility, State, and Federal emergency news briefings. JIC support will also be supplied by NextEra Corporate Communications, based out of Florida. The Corporate JIC Manager and Emergency Communications Team (ECT) will work together with the JIC personnel located at the EOF. The Corporate JIC team will provide support remotely or travel to the JIC, dependent on the severity of the emergency. The Corporate JIC Manager and the Emergency News Manager will coordinate activities at the JIC. Emergency information will be obtained from the EOF and disseminated to the news media at the JIC.

This center will accommodate the media by providing

1. a media relations telephone service for news media to call for information;

2. a media briefing room with a public address system and graphics;

3. accommodations for video and audio equipment and media vans; and

4. station background information.

It is expected that State and Federal public information personnel will operate from the JIC. New Hampshire Homeland Security & Emergency Management (NHHSEM) and Massachusetts Emergency Management Agency (MEMA) operate a rumor control telephone service for their respective states. Rumor trends will be reported to the NHHSEM and MEMA representatives in the Joint Information Center where they can be addressed in joint news briefings.

6.1.6 Federal Radiological Monitoring and Assessment Center

The Federal Radiological Monitoring and Assessment Center (FRMAC) will be established by the US Department of Energy (DOE) at a suitable facility in proximity to the EOF in response to a request from either State or Federal authorities. The DOE and Environmental Protection Agency (EPA) are prepared to deploy specialized resources and establish a base of operations for offsite radiological monitoring and assessment activities. Environmental data obtained by an array of technical experts operating out of this center will be used by governmental officials in determining the hazard associated with the incident and the appropriate protective actions. DOE is responsible for the coordination of FRMAC emergency activities as described in the National Response Framework, Nuclear/Radiological Incident Annex.

6.2 Assessment Capability

The activation of this plan and the continual assessment of accident conditions require extensive monitoring and assessment capabilities. The essential monitoring systems needed to allow recognition of abnormal events by the Station operators was used in the accident classification methodology. This section briefly describes these monitoring systems as well as other assessment capabilities.

6.2.1 Process Monitors

Station process monitoring capability includes many process monitor indications provided from various sensors located throughout Station systems. Parameters monitored include pressure, temperature, flow, level and equipment operating status. These monitoring systems are described in the Seabrook Station UFSAR.

6.2.2 Radiation Data Management System

The Radiation Data Management System (RDMS) provides operators with the ability to assess Station radiological conditions during normal operations, as well as radiological emergency conditions. The RDMS is a microprocessor-based acquisition and display system. Field mounted detectors communicate individually to their own microprocessor which in turn communicates to two central processing units (CPU) on a redundant communication loop. The various parameters monitored include general area radiation, process radioactivity levels, airborne contamination levels, and effluent radioactivity levels. The quantity and diversity of the parameters monitored, along with the display capabilities of the RDMS, provide the operator with sufficient warning of accident conditions as well as continual accident assessments. However, the primary means of quantitatively evaluating system and plant radioactivity levels will be through a program of collecting physical samples and subjecting these physical samples to laboratory analysis to identify specific isotopes and their relation to the RDMS. A contingency capability has been established to measure accident dose rates in the reactor coolant system and to correlate the dose rates to reactor coolant activity. This capability provides the operators with fuel defect information that would be used to classify fuel damage events. This contingency capability includes the ability to collect an archive sample from either the reactor coolant system or the containment sump for laboratory analysis.

Each of the RDMS monitors alarms in the Control Room and Operational Support Center for a variety of alarm conditions (e.g., alert level, high level, power failure, etc.). This system is described in the Seabrook Station UFSAR.

6.2.3 Geophysical Phenomena Monitors

1. Meteorological

Seabrook Station maintains a 210-foot-high meteorological tower located near the south edge of Brown's River, as shown in Figure 4.3. The parameters monitored include wind speed and direction at 43 feet and 209 feet above ground level, and vertical temperature difference (delta-T) between 43 feet and 150 feet and between 43 feet and 209 feet. The meteorological data from the tower are scanned and recorded as 15-minute averages by the Main Plant Computer System (MPCS). These averages are available for on-demand display on MPCS terminals located in the Control Room, TSC, and EOF. A data logger located in the instrument building near the base of the tower serves as backup recording mechanism. (Protected: Ref. NRC IR 85-32(19))

A freestanding 53' backup meteorological tower is located adjacent to the settling basin outlet structure. The meteorological data from the backup tower are scanned and recorded as 15-minute averages by an independent computer system. These averages for wind speed, wind direction and calculated equivalent delta temperature are available for on-demand display on MPCS terminals located in the Control Room, TSC and EOF. (Protected: Ref. NRC IR 85-32(20))

Additional sources of meteorological information include various National Weather Service (NWS) Offices, and the PSNH Electrical System Control Center.

A dispersion model, Raddose-V, produces plume transport and diffusion estimates for the plume exposure pathway Emergency Planning Zone. The model produces plume dimensions, position, and relative concentrations at several downwind locations. Using effluent release information and a finite cloud external gamma dose model, estimates of near real-time dose rates will also be available. The model has the graphics capability of drawing plume position over a background map of the site. More information on these calculation techniques is given in Section 10.1.1 of this plan.

2. Seismic

Seabrook Station has installed seismic monitoring equipment with alarms indicated in the Control Room. The equipment consists of Triaxial Time History Accelerographs capable of measuring and permanently recording the absolute acceleration versus time for both horizontal and vertical motion.

The Control Room alarms will indicate the following:

a. Seismic event in progress;

b. Seismic monitor trouble; and/or

c. Seismic monitor OBE exceedance.

3. Hydrologic

Seismic Category I structures that house safety-related equipment have been designed to withstand a depth of still water on the Station grade (+20.6 ft. MSL) of 0.6 feet. Access openings in exterior walls that are below the design flood level consist of a railroad door in Unit 1 Fuel Storage Building and man doors in other structures. Flood protection has been provided by means of water-tight doors or curbs around the door openings. In the case of the Fuel Storage Building, curbs have been constructed around vulnerable equipment. All below-grade structures are waterproofed on the exterior face, and sumps have been installed in all buildings. Because of the general design, it was not necessary to install hydrologic monitors, nor will it be necessary to bring the reactor to a cold shutdown for the most severe flood anticipated for the Station.

6.2.4 Fire Detection Systems

Seabrook Station maintains an extensive fire detection network which utilizes a combination of smoke detectors, thermal detectors and rate-of-rise detectors as means of providing Station operators with complete fire status information.

The fire protection system is comprised of the following basic systems:

1. A pumped water system providing a complete underground looped station fire main with hydrants, hose houses and hose carrier for yard and building exterior protection, and internal sprinklers, hose stations and deluge systems for specific building applications.

2. Portable halon extinguishers in the Control Room complex, and all battery rooms.

3. Portable C02 fire extinguishers for use in relay room and switchgear areas.

4. Portable C02 and dry chemical fire extinguishers located throughout the Station for immediate use on small fires.

5. Fire pump house ventilation system.

6. Fire pump house and fire tank heating system.

7. Standpipes with hose stations in the containment, control building, primary auxiliary building, fuel storage building, waste processing building and equipment vaults.

6.2.5 Facilities and Equipment for Offsite Monitoring

In addition to offsite monitoring equipment and maps at the EOF as described in Section 6.1.3, Seabrook Station conducts an offsite radiological environmental surveillance program. This program has been established for the site and surrounding area to monitor the environment under normal and accident conditions. Details of the requirements of this program are contained in the Station Offsite Dose Calculation Manual (ODCM).

The EOF is equipped with a gamma spectroscopy system with High Purity Germanium detector and data processing computer. GEL Laboratories is available on a continuous 24 hour, seven days a week basis to provide a full spectrum of radio-analytical measurements on environmental sample media.

If mobilized, additional offsite monitoring and analysis capability will be provided by Federal agencies in accordance with the National Response Framework, Nuclear/Radiological Incident Annex, as discussed in Section 6.1.6. This additional capability would be integrated with the efforts underway in a coordinated manner.

7.0 COMMUNICATIONS

Seabrook Station has established an emergency communications network for notifying and coordinating activities with offsite and onsite emergency response organizations. A summary of the communication network is presented below.

7.1 Nuclear Alert System

The Nuclear Alert System (NAS), originating in the Control Room, and comprised of leased telephone lines, is used to notify the New Hampshire State Police (NHSP) Communications Center Dispatcher and Massachusetts Emergency Management Agency (see Figure 7.1) (MEMA) 24-hour Dispatcher of an emergency.

The NHSP and MEMA dispatchers will notify the Director, New Hampshire Homeland Security & Emergency Management and Director, MEMA, respectively. The Directors will notify their respective Governors. In addition to the Control Room and offsite warning points, the NAS has been installed in the two states' Emergency Operations Centers (EOCs), the MA Region I EOC in Tewksbury, the NH Rockingham County warning point in Brentwood, and the Emergency Operations Facility (EOF). The system can serve as a back-up communication system for coordination between the locations as shown on Figure 7.2. Backup to this system is a radio system.

Provisions are made for backup power to the Nuclear Alert System.

This system is manned on a 24-hour basis on both ends - the Station and the state offsite warning points. The system is tested monthly between the states and the Station.

7.2 NRC Communications Channels

A designated FTS-2001 telephone is installed in the Control Room as the Emergency Notification System (ENS) line. This line is used to provide initial emergency notifications to the Nuclear Regulatory Commission Headquarters Operations Center in Rockville, MD. The line is staffed on an around-the-clock basis by both organizations. The ENS line is also available in the EOF and the Alternative TSC.

Designated FTS-2001 telephones are installed in the Emergency Operations Facility and the Technical Support Center to support the Health Physics Network (HPN). These telephones will be used to provide radiological and protective action-related information to the NRC.

Additional FTS-2001 and commercial line capabilities have been established in each response center for use by NRC response team members.

The Emergency Response Data System (ERDS) is installed as a user-selected function on the Main Plant Computer System (MPCS). ERDS may be activated from selected MPCS terminals located in the Control Room and TSC. ERDS will be activated within 1 hour of the declaration of an Alert or higher emergency classification. ERDS is tested on a quarterly basis.

7.3 Telephone System

The Telephone System is used as a means of communications for notification and coordination with onsite and offsite organizations/teams. The telephone system is interconnected with the public address system and leased communications systems. If power is lost to the Station PBX, certain extensions located in the Control Room, TSC, OSC and Guard Island will be automatically connected to the public telephone exchange network directly. Power to the PBX is backed up by uninterruptible power supplies and the diesel generator.

The telephone system can also access the UHF Trunked Radio System via a telephone interconnect.

7.4 Commercial Pager Service

Seabrook Station utilizes a commercially available paging service to notify Primary Responders, Subject-to-Call Responders and other Secondary Responders. These digital display pagers are activated by telephone or by computer software. Pagers may be activated collectively by a group call number or individually. This pager system uses multiple transmitter sites within a twenty-five-mile radius of Seabrook Station.

7.5 Station Radio System

Figure 7.3 provides a summary of the Offsite Monitoring Team Radio Communications Network described in Section 7.5.1. Figure 7.5 provides a summary of the existing Seabrook Station UHF station radio communications network described in Section 7.5.2. .

7.5.1 Offsite Monitoring Team Radio Network

The VHF radio system previously used as a primary means of two-way communications with the radiological survey teams has been retired. A UHF network, using radio frequencies supporting the Seabrook Public Alert Notification System (PANS), replaces it. This network consists of the following:

1. A tone remote, control base, and antenna assigned to the Emergency Operations Facility (EOF) which can transmit to radiological survey via five distinct channels.

2. Two mobile radios installed in dedicated radiological survey vehicles and a third portable mobile which can be installed in any vehicle.

3. Six portable radios available to support State radiological survey teams, as needed

All components of the EOF controls are backed up by emergency power. All system repeaters are backed up by emergency power.

To support rapid deployment of onsite radiological survey teams within or near the site boundary, remote control consoles in the Control Room, Technical Support Center, and Operational Support Center can provide two-way communications with the teams via portables operating on the station UHF frequency discussed in Section 7.5.2. Dedicated portables are stored in both the Operational Support Center and a location outside the Protected Area.

Seabrook Station also maintains a commercially available push-to-talk mobile communications network designed to provide two-way communications with State and utility radiological survey teams.

7.5.2 UHF Radio System

A UHF trunked radio repeater system is used for onsite two-way communications by station Operations, Maintenance, Fire Fighters, Health Physics, and Security personnel. Trunking is the process where a trunking controller automatically selects the channel/repeater when a user keys a portable radio or base station. The trunking controller automatically selects the communication path rather than the user having to manually switch channels to find a clear channel. Should a trunked repeater fail, the trunking controller will allow the user to continue communication almost without knowledge of the repeater failure and without termination of the communication. Should the trunking controller fail, the system reverts to operation similar to a conventional repeater system where users are assigned a specific repeater. For a failure of all fixed radio equipment (trunking controller, repeaters, and RF mixing rack), communications can be maintained by manually switching the control stations and portables to the TALKAROUND (direct) mode. This mode has reduced coverage since the repeaters are not in service. Trunking greatly improves the reliability of the entire system and allows individual repeaters to handle traffic from any user group if other repeaters are in use or inoperable. The programmable features of the system allow the creation of various user talk groups and priority levels.

A conventional radio repeater is provided as a telephone system interconnect. This allows the radio system to access the telephone system, or vice versa. This capability exists only for those portable radios that are programmed for this feature. Another conventional repeater is provided as a paging system interconnect to activate onsite pagers.

The radio system equipment is powered from the nonsafety power system. Backup power for the trunking controller, repeaters, and RF mixing rack is provided by an emergency diesel generator and by a dedicated battery rated for two hours. Other fixed radio equipment such as control stations and control consoles are provided with backup power from an emergency diesel generator backed or uninterruptible power supply (UPS) backed sources, or a dedicated battery rated for two hours. Control consoles located at the Health Physics (HP) Alternate Checkpoint are not provided with backup power. Portable radios can operate independently of all other systems. They are backed up by their own batteries for continued operation in case of loss of all AC power.

Remote control consoles are located at the main control room, the Technical Support Center (TSC), the Health Physics/Operational Support Center (HP/OSC), and the HP Alternate Checkpoint.

For a description of the system features provided for Security, refer to the Security Plan.

7.6 Station Paging System

A plant paging system is used for alerting in-plant personnel of emergencies. A central control panel is located in the Control Room. The paging system is accessed through dedicated paging system handsets which are located throughout the plant including the Control Room, Technical Support Center, Operational Support Center, and Security Guard House.

The system consists of four channels, and is utilized as a page/talk system under normal operations. During emergency situations, the system can be used for (1) alerting Station personnel; (2) coordinating activities between onsite response teams and the Technical Support Center; (3) calling missing persons that may be in the Station; (4) coordinating activities between Control Room and Technical Support Center; and (5) communicating between Station centers.

A multi-tone generator is associated with the paging system. This generator produces the various alarms designated to alert Station personnel of emergency situations. Alerting is ensured by the location of the page system speakers. In high background noise areas, beacon lights or similar devices supplement the speakers. The alerting signal is manually initiated from the Control Room by keying the appropriate alarm station. The evacuation alarm takes priority over all other transmissions.

Power to the paging system is provided by uninterruptible power supplies, independent from the power supply for the telephone system. The paging system is used daily and the alerting alarm is tested weekly.

7.7 Sound-Powered Telephone System

The Station has been equipped with a multiple loop sound-powered telephone system. Jack locations have been provided near many major pieces of equipment and on control panels, instrument racks, motor control centers, unit substations and switchgear. Switching panels are provided in the Control Room to enable the loops to be connected together. A supply of sound powered telephone handsets and cables are available in the Control Room emergency supply room. Since no external power is necessary for operation, the system is available during an emergency; however, its greatest application would occur during a recovery phase.

8.0 ORGANIZATION

8.1 Introduction

An Emergency Response Organization (ERO) has been established to respond to radiological emergencies at Seabrook Station. This organization includes Seabrook Station personnel, local services support, and private organization support.

The structure of the emergency response organization will vary depending on the time of day, the severity of the incident, and the emergency classification. In the initial phases of an accident, an on-shift ERO (See Figure 8.1) consisting of personnel from the normal Station organization will be responsible for event classification and completion of emergency actions. In the following phases of emergency response, the Augmented ERO for either the Unusual Event (See Figure 8.2) or Alert, Site Area Emergency, and General Emergency (See Figure 8.3) will be activated with the capability of continuous, 24-hour-per-day operations for a protracted period. Figure 8.15 provides a comparison of the NUREG-0654 Table B-1 emergency response staffing requirements with the on-shift ERO.

8.2 Emergency Response Organization

The ERO structure which would be activated to respond to an incident at Seabrook Station is provided in Figures 8.1 through 8.6 and Figure 8.9. Appendix A describes the positions listed on these figures along with activation level, response location and responsibilities. Appendix A also correlates the normal Station title and/or types of background and responsibilities of assigned personnel to the emergency title for each position.

8.2.1 On-Shift Emergency Response Organization

The Shift Manager has the authority and responsibility to classify abnormal conditions in accordance with the emergency classification system. The classification and declaration of an emergency initiates the activation of the on-shift ERO (See Figure 8.1). Once an emergency is declared, the Shift Manager assumes the position of Short Term Emergency Director (STED). If available, the Unit Supervisor may assume the duties of the STED in the absence of the Shift Manager.

The Work Control Supervisor is a senior licensed individual assigned to each shift and is available to assist the STED with emergency plan implementation. Such assistance will be at the discretion of and as directed by the STED. All information provided to offsite authorities by the Work Control Supervisor will first receive review and approval by the STED.

Additional on-shift personnel assume emergency duties in the On-Shift Emergency Response Organization shown on Figure 8.1. Actions include assistance in initial emergency classification or reclassification, notification of State and NRC personnel, recommendation of offsite protective actions, and operational activities to achieve and maintain Station safety.

The Seabrook Station On-Shift Staffing Analysis Report, developed in accordance with 10 CFR 50 Appendix E, Section IV, A, 9, shows that the on-shift ERO is not assigned responsibilities that would prevent the timely performance of its assigned functions as specified in the emergency plan. SSREP Figure 8.1 depicts on-shift ERO staffing.

8.2.2 Augmented Emergency Response Organization

Following classification of an emergency, the On-Shift ERO will evolve to an Augmented ERO. The composition of the Augmented ERO depends upon the emergency classification level.

1. Unusual Event Augmented Emergency Response Organization

   During an Unusual Event, a limited number of ERO members, shown in Figure 8.2, are notified to assist the on-shift staff with the emergency response. These individuals are referred to as Primary Responders. The STED will transfer overall management responsibility to the arriving Site Emergency Director. As part of this transfer, the Site Emergency Director will be fully briefed by the STED on the status of the Station, accident mitigation and corrective actions taken, offsite notifications and the status of the ERO.

   Upon assuming command, the Site Emergency Director will notify appropriate ERO members of the transfer. Independent of the arrival of the Site Emergency Director, the Unusual Event Augmented ERO will carry out its responsibilities as outlined in the appropriate position descriptions of Appendix A. These actions are directed towards termination of emergency conditions, assessment of onsite radiological conditions, technical support, coordination of Station activities with offsite authorities (State and Federal), and provision of medical and other requested assistance.

   If the condition(s) that caused the Unusual Event completely clears prior to the Control Room notifying the Primary Responders, the STED may determine which, if any, of the Primary Responders need to report to the site. If not, these individuals will complete their assigned tasks on the following business day.

2. Alert, Site Area Emergency and General Emergency Augmented Emergency Response Organization

   Upon declaration of an Alert, Site Area Emergency, or General Emergency, there is a full augmentation of the On-Shift ERO. The fully augmented Alert, Site Area Emergency, General Emergency Augmented Emergency Response Organizations are shown on Figures 8.3 through 8.6 and Figure 8.9. The augmented emergency response organizations will carry out the responsibilities listed for the appropriate positions in Appendix A.

The Site Emergency Director will transfer command of the overall emergency response to the Response Manager. As part of this transfer, the Site Emergency Director will brief the Response Manager on Station status, accident mitigation, corrective actions taken, status of the ERO, and the protective action recommendations, if any, provided to offsite authorities. The Site Emergency Director will continue to direct all onsite response activities.

The Response Manager position will be assumed by a member of Seabrook Station senior management. This person has the authority, management ability and technical background to organize and manage response and recovery operations. The Response Manager is responsible for providing overall direction and guidance to the Site Emergency Director in the effort to return the Station to a safe condition.

For Alert, Site Area Emergency, and General Emergency declarations, the Response Manager will report to the EOF and this position will remain in effect until emergency conditions and subsequent recovery activities have been terminated.

The remaining Station ERO staff will report to locations identified in Appendix A and shown in Figures 8.3 through 8.6 and Figure 8.9. This may involve the relocation of some ERO staff from Unusual Event response locations to Alert, Site Area Emergency, and General Emergency response locations.

8.3 Emergency Public Information Organization

The Emergency Public Information Organization is responsible for providing factual and timely information to the public regarding emergency conditions at Seabrook Station. Technical advisors in the Joint Information Center will provide information to the Emergency News Manager. JIC support will also be supplied by NextEra Corporate Communications, based out of Florida. The Corporate JIC Manager and Emergency Communications Team (ECT) will work together with the JIC personnel located at the EOF. The Corporate JIC team will provide support remotely or travel to the JIC, dependent on the severity of the emergency. The Corporate JIC Manager and the Emergency News Manager will direct the Joint Information Center organization shown in Figure 8.9, and are the primary spokespeople for the Seabrook Station ERO at the Joint Information Center.

8.4 Seabrook Station Corporate Support

Seabrook Station Corporate Support is integrated into specific ERO positions. These positions respond as part of an Augmented ERO. Position descriptions are contained in Appendix A.

Logistics support for emergency response personnel (e.g., transportation, communications, temporary quarters, food and water, sanitary facilities in the field, and special equipment and supplies procurement) will be arranged by the ERO staff at the Emergency Operations Facility.

8.5 Recovery Organization

The emergency measures presented in this plan are actions designed to mitigate the consequences of the accident in a manner that will afford maximum protection to the public. The emergency response organization described in various sections of this plan provides the foundation for the recovery organization. The recovery organization provides the necessary capabilities to restore normal Station activity.

The Response Manager will initiate planning for recovery at the EOF. Once the response phase of the emergency is terminated, a Recovery Manager will assume command of recovery efforts. Planning for the recovery mode of operations involves the development of general principles and goals, and an organizational capability that can be adapted to address the particular post-accident conditions. A recovery organization will be formed consisting of members of the normal station organization, the ERO and, if necessary, personnel from regional utilities, nuclear industry groups and consultants/vendors.

The Response Manager is directly supported by the staff at the EOF. Expertise in the disciplines of Engineering, Operations and Quality Assurance will be available during the recovery phase. Additionally, the Seabrook Station Training Center staff will be available to evaluate and test proposed operating sequences and recovery actions using the Training Center simulator and technical resources.

8.6 Extensions of Seabrook Station Emergency Response Organization

8.6.1 Local Services

Arrangements have been made for the extension of organizational capabilities for handling emergencies. These include the following:

1. Transportation of injured personnel using the Town of Seabrook Fire Department ambulance service;

2. Treatment of radioactively contaminated and injured personnel at Exeter Hospital and Wentworth-Douglass Hospital; and

3. Fire support services by the Town of Seabrook Fire Department and, if necessary, mutual aid.

Letters of agreement with participating local service organizations are maintained in Appendix D to this plan.

The Seabrook Station Physical Security Plan includes a description of external organizations (LLEA) that would support response to a hostile action based event. Agreements with appropriate LLEA for this purpose are maintained by the Seabrook Station Security Department. LLEA provisions in the Physical Security Plan and supporting agreements meet the requirements of 10 CFR 50 Appendix E, IV, A, 7.

8.6.2 Federal Government Support

Appropriate Federal agency resources would be made available in accordance with the National Response Framework, Nuclear/Radiological Incident Annex . This plan is activated through Station notification of the NRC. Available resources include offsite radiological assessment, under the leadership of the Department of Energy. This effort would involve manpower and equipment for extensive plume measurement, including aerial monitoring and tracking, and sampling and analysis of ingestion pathway media. The STED, Site Emergency Director and Response Manager have the authority to request Federal assistance.

8.6.3 Private Organization Support

Depending on the emergency conditions and the response needs, the Seabrook Station ERO can be augmented by personnel and equipment support arranged through the Institute of Nuclear Power Operations (INPO). The Response Manager and/or the Site Emergency Director will be responsible for the decision to request industry response through INPO. All industry organizations reporting to the Station will be required to report to Station emergency management who will specify the authorities, responsibilities and limits on the actions of these organizations. All response organizations will be required to adhere to all existing Station procedures while completing their activities.

8.7 Coordination with State Government Authorities

Because of the location of Seabrook Station, the planning for and implementation of State response actions involve two states, New Hampshire and Massachusetts. The Seabrook Station Radiological Emergency Plan has been developed to provide for a coordinated response with the plans of offsite governmental agencies.

Both New Hampshire and Massachusetts, as well as the localities within the plume EPZ, have prepared plans for a response to an emergency at Seabrook Station. In addition, the State of Maine, which lies within the ingestion EPZ, has the capability to carry out appropriate response actions. These plans describe their respective responsibilities, authorities, capabilities, and emergency functions.

Section 7.0 of this plan describes the communications network that has been developed between Seabrook Station and these states as a means of promptly notifying appropriate authorities of Station emergency conditions. The Short Term Emergency Director notifies New Hampshire State Police and Massachusetts Emergency Management Agency using the dedicated Nuclear Alert System (NAS). This notification keys mobilization of various levels of emergency response dependent on the emergency classification.

Dependent upon the emergency classification, both New Hampshire and Massachusetts would dispatch radiological health and emergency management representatives to the EOF for first-hand emergency information.

The EOF Coordinator coordinates radiological accident information and its meaning with both State and Federal emergency response organizations. Government requests for non-radiological information and specifically those regarding emergency management issues will be addressed by the Response Manager. Based on accident assessment, protective measures will be recommended by Seabrook Station and implemented by each state according to actions prescribed by each state's Radiological Emergency Response Plan.

The ERO Technical Liaison reviews plant technical information by telephone with offsite officials in the state emergency operations centers (EOCs). Seabrook Station technical representatives report to the New Hampshire and Massachusetts State EOCs to facilitate the review of plant information with state emergency response officials. The ERO Technical Liaison reviews plant information directly with New Hampshire and Massachusetts emergency response representatives at the Seabrook Station EOF.

Figures 8.13 and 8.14 provide a summary of the radiological emergency responsibilities and functions assigned to various Massachusetts and New Hampshire state authorities. The Station maintains an updated copy of each state's Emergency Plan and associated implementing procedures.

Information is coordinated with the Maine Emergency Management Agency by New Hampshire authorities for ingestion pathway considerations. Additional state support can be called upon from participating states in the New England Compact on Radiological Health Protection.

9.0 EMERGENCY RESPONSE OUTLINE

9.1 Initiation

Upon the recognition of abnormal Station conditions either through initiation of Emergency Operating Procedures (EOPs) or other sources of information, the condition will be classified in accordance with the method described in Section 5.0. Once an emergency is classified, the response actions are directed by Emergency Response (ER) procedures contained in the Emergency Response Manual (SSER). Procedures exist that direct the appropriate response for each of the four emergency classifications.

9.2 Activation of the Emergency Organization

The Unit Supervisor is responsible for recognizing potential emergency conditions and notifying the Shift Manager. The Unit Supervisor will assume the duties and responsibilities of the Short Term Emergency Director (STED) until the Shift Manager responds to the Control Room. With an emergency declared in accordance with Procedure ER 1.1, Classification of Emergencies, the Shift Manager assumes the role of STED and ensures the activation of the Emergency Response Organization (ERO) according to Section 8.0.

Upon declaration of an emergency, the STED will direct implementation of Procedure ER 1.2, Emergency Plan Activation. The STED will relinquish direction of the ERO upon the arrival and briefing of the Site Emergency Director.

9.2.1 Unusual Event Response

Upon the declaration of an Unusual Event, the STED will direct the notification of Station personnel (via the Station public address system) and the Primary Responders (via a digital paging system). The Primary Responders are shown in Figure 8.2, "Augmented Emergency Response Organization (ERO)-Unusual Event" and are the supplementary personnel designated to assist the on-shift staff in an Unusual Event. Offsite emergency organizations are notified and assistance from offsite fire, medical and law enforcement organizations will be requested, as necessary.

During an Unusual Event, the Site Emergency Director, Operations Technician, Health Physics Coordinator, Technical Services Coordinator and ERO Technical Liaison respond to the Control Room or Technical Support Center. The Site Emergency Director will relieve the STED of emergency response command and control duties. The Response Manager will obtain a briefing from the Site Emergency Director or Short Term Emergency Director prior to or after reporting to an appropriate onsite or offsite reporting location. The Response Manager will notify Seabrook Station executive management. The EOF Coordinator and the Emergency News Manager will obtain a briefing from the Response Manager. The Emergency News Manager reports to the Seabrook Station site to coordinate public information needs.

No Station emergency response facilities are automatically activated during an Unusual Event, although the Site Emergency Director may, at his discretion, activate any or all facilities.

The response required as a result of this declaration varies according to the specific event, but a general summary of actions taken is described below:

1. On duty operating and selected Station personnel will assume the duties specified in Section 8.0;

2. The STED will ensure that New Hampshire State Police and Massachusetts Emergency Management Agency have been notified. In turn, the offsite warning points will notify the appropriate authorities designated in their plans;

3. The STED will ensure that the NRC has been notified and that a communication channel remains open until the condition has been terminated (unless permission is granted to establish a callback time);

4. The STED will direct the activities of the On-Shift Emergency Response Organization;

5. The STED will ensure activation of the digital paging system to initiate emergency notification;

6. The Primary Responders will respond as discussed above;

7. Should it be necessary, the Site Emergency Director would direct additional notifications by telephone to augment the existing ERO to the level required by the nature of the emergency condition;

8. If necessary, appropriate emergency medical, fire department or law enforcement agencies will be notified and requested to respond;

9. The Emergency News Manager will direct preparation of public information releases appropriate to the event; and

10. The Site Emergency Director will close out the event with a notification to offsite authorities or escalate to a more severe class.

9.2.2 Alert Response

Upon the declaration of or escalation to an Alert, offsite emergency organizations are notified in accordance with Procedure ER 1.2, Emergency Plan Activation. The Station emergency response organization becomes fully activated and the following actions are taken in addition to those described in Section 9.2.1. An overview of reporting locations for site personnel is presented in Figure 9.1, Reporting Instructions for Onsite Personnel.

An Augmented ERO, consisting of both Primary and Secondary Responders, is activated. This Augmented ERO is shown in Figure 8.3. Additional details regarding this organization are provided in Figures 8.4 through 8.6 and Figure 8.9.

Primary Responders and Subject-to-Call Responders are personnel required to meet ERO staff augmentation goals or who should be present for activation of emergency response facilities. These responders are instructed to report to their assigned emergency facilities when their pagers are activated for an Alert or higher classification level.

During normal work hours, Secondary Responders are notified by pager, the Station public address system, an onsite siren or security personnel. During backshifts, weekends, and holidays, Secondary Responders are notified via the automated emergency telephone notification service, a commercial computer-based callout system, which is activated by Security personnel.

The Technical Support Center (TSC), Operational Support Center (OSC), Emergency Operations Facility (EOF), and the Joint Information Center (JIC) will be activated and staffed. Staffing assignments for the ERO are described in Appendix A.

Seabrook Station has established the goal of activating the TSC, OSC and EOF no later than one (1) hour following the declaration of an Alert or higher emergency classification level. Primary Responder and Subject-to-Call Responder positions in each of the facilities are expected to be filled and ready to function within the one hour goal. The specific positions that are expected to be filled within the one hour goal are delineated in the operational procedures for each facility. Other Secondary Responders are expected to report to their assigned emergency facilities as soon as possible after they receive notification of an Alert or higher emergency declaration. Other Secondary Responder positions may be filled by qualified personnel who are called-in after facilities have been activated and beyond the one hour facility activation goal, but all ERO positions are expected to be filled as soon as possible following declaration of an Alert or higher emergency. Emergency plan implementing procedures provide guidance for accounting for the status of all ERO positions, for identifying any vacant positions and for calling-in qualified staff to fill vacancies.

Alternative Technical Support Center and Operational Support Center are designated areas within the EOF where TSC and OSC personnel assemble for hostile action based events or other catastrophic events that prevent site access. The Assembly Area for backup emergency response organization personnel is located outside the Protected Area in the Seabrook Station Conference Center. For emergencies declared during normal working hours, this facility is activated at an Alert or Site Area Emergency or General Emergency, depending upon event meteorological and radiological conditions. The purpose for this facility is to (1) ensure that adequate manpower exists for the staffing of all emergency facilities, (2) develop a roster of available second shift personnel and (3) disseminate reporting information to second shift personnel (e.g., when and where to report).

Maintenance technicians (mechanics, electricians, I&C technicians) will assemble at the Assembly Area if an Alert or higher emergency classification is declared during normal daytime working hours. Maintenance technicians working on swing or mid-shifts when an Alert or higher emergency classification is declared will report to the Operational Support Center. During outages when the station is in Mode 5 or 6, non-ERO assigned personnel working outage assignments on any shift will assemble at the Assembly Area. ERO and outage management will determine what outage personnel are needed to resume outage related work. Other personnel will be directed to leave the site.

The following additional actions will be completed in the event of an Alert classification:

1. The Response Manager will report to the EOF and assume responsibility for providing overall emergency response organization direction to restore Station stability;

2. The Massachusetts and New Hampshire state emergency response teams are alerted, and specific representatives will be dispatched to the Station EOF;

3. The EOF Coordinator will provide offsite authorities with periodic meteorological assessments and, if releases are occurring, projected dose estimates (NOTE: If radiological releases are occurring, monitoring teams will be dispatched to determine actual area dose rates);

4. Information will be coordinated, as necessary, with ANI and INPO; and

5. The Response Manager or designee will close out the event. The Site Emergency Director will either downgrade the classification or escalate it to a Site Area or General Emergency.

9.2.3 Site Area Emergency Response

Upon the declaration of or escalation to a Site Area Emergency offsite emergency organizations are notified in accordance with procedure ER 1.2, Emergency Plan Activation, or if the EOF is activated, procedure ER 3.3, Emergency Operations Facility Operations. The Station emergency response organization takes the following actions in addition to those described in Sections 9.2.1 and 9.2.2.

1. Offsite monitoring teams will be dispatched from the EOF;

2. The Response Manager's staff will notify contracted service organizations, sponsor utilities and other industry resources which will be requested to render assistance, as appropriate;

3. State resources will be fully mobilized in accordance with planning arrangements set forth in Massachusetts and New Hampshire State Radiological Emergency Response Plans. Included in these planning arrangements is the activation of the Public Alert and Notification System (PANS);

4. Station conditions will be continually assessed and protective action recommendations to offsite authorities will be made on the basis of this assessment according to procedure ER 5.4, Protective Action Recommendations. This could involve Station conditions related to the potential for radiological impact prior to the occurrence of actual releases; and

5. The Response Manager or designee will close out the event. The Site Emergency Director will either downgrade the classification or escalate it to a General Emergency.

9.2.4 General Emergency Response

Upon the initial declaration of or escalation to a General Emergency, offsite emergency organizations are notified in accordance with procedure ER 1.2, Emergency Plan Activation, or, if the EOF is activated, procedure ER 3.3, Emergency Operations Facility Operations. The Station emergency response organization will promptly notify offsite authorities of the General Emergency status, informing them of accident conditions and coordinating a continuous flow of accident diagnosis and prognosis information.

The Public Alert and Notification System (PANS) will be activated. Offsite authorities will fully activate emergency response resources and implement appropriate protective measures. These measures may be based on meteorological information, radiological dose projections or Station indications of the potential for significant releases of radioactive material. The Response Manager and the Seabrook Station ERO will evaluate Station accident parameters and indications, and will continually advise offsite authorities of the type of protective actions most appropriate to the observed situation. This would include advice on the question of shelter vs. evacuation.

Additional responses taken in a General Emergency condition include activation of the NRC Incident Response Plan per NUREG-0748, Revision 4.

9.3 Emergency De-escalation, Termination and Recovery

The emergency classification system defined in Section 5.0 of this plan provides the flexibility needed to both escalate or de-escalate the emergency level dependent upon the severity of the event. De-escalation criteria associated with making a transition between emergency classes will require a review of plant parameters and offsite radiological conditions in conjunction with the pre-established Emergency Action Levels (EALs).

When the risk posed by the emergency is clearly decreasing or has ceased, de-escalation or closeout of the emergency is appropriate. A combination approach is used and summarized in the table below.

	Downgrading Allowed	Closeout via Termination	Closeout via Recovery
Unusual Event	N/A	Yes	No
Alert	Yes	Yes	No
Site Area Emergency with no long-term Station damage	Yes	Yes	No
Site Area Emergency with long-term Station damage	Yes	No	Yes; may occur after downgrading
General Emergency	Yes	No	Yes; may occur after downgrading

After the emergency has been terminated, efforts will be focused on restoring the Station to a normal operating condition. If this is not possible, long-term decommissioning, dismantling, storage and disposal issues will be addressed.

General planning guidance for recovery from emergency conditions, including reentry into affected areas of the Station, is contained in emergency response procedure ER 6.0. Termination of the emergency phase and initiation of the recovery phase will require satisfying the following criteria appropriate to the emergency condition:

1. Radiation levels of in-Station areas are stable or are decreasing with time;

2. The reactor is shut down and criticality controls are in effect (only if reactor shutdown was required by the emergency condition);

3. The core is being adequately cooled;

4. Control has been established over containment pressure and temperature;

5. An adequate heat transfer path to an ultimate heat sink has been established;

6. Primary system pressure is under control;

7. Any fire, flooding, earthquake or similar initiating events are either under control or have ceased;

8. Releases of radioactive material to the environment are either under control or have ceased;

9. Specified corrective emergency actions have been completed and the Station is in the appropriate operating mode, and notifications are complete.

When transitioning to a recovery phase, the Response Manager and the Site Emergency Director shall perform the following actions:

1. Confer with key ERO managers to determine whether actual/potential conditions warrant entry into a recovery mode.

2. If recovery is appropriate, direct key ERO managers to confer with their respective staffs and determine whether any radiological and/or operational conditions exist which would preclude entry into a recovery mode.

3. Direct key ERO managers to develop a recovery organization and shift schedule. The organizational structure will take into account incident specifics and availability of outside support organizations.

4. Direct key recovery organization members to prepare written prioritized recovery work plans in accordance with the guidance in emergency response procedure ER 6.0.

5. Submit the recovery organization and action plans to the Site Vice President (Recovery Manager) for approval.

Prior to declaring recovery in effect, the Response Manager shall perform the following actions:

1. Review the proposed recovery organization, action plans, and the date and time for entry into the recovery mode with the following:

    a. NRC personnel

    b. Other federal representatives (e.g., DHS, DOE, EPA)

    c. State emergency response officials.

2. Brief key ERO managers on the recovery organization, action plans, and date and time for entry into recovery mode.

3. Direct the Emergency News Manager to issue a news release concerning entry into the recovery mode.

4. Provide recovery assistance to State authorities, as requested.

5. Direct the administrative, financial and legal support necessary for the recovery organization.

When the Site Emergency Director determines that recovery prerequisites have been met and the Response Manager declares recovery in effect, the Site Vice President becomes the Recovery Manager and assumes overall management of Seabrook Station recovery activities. The Response Manager will announce through ERO organizational and communication channels when recovery has been entered. During the recovery transition phase, the Recovery Manager will designate a Response Manager position holder as the EOF Recovery Coordinator who will remain in charge of recovery activities designated for the EOF and who will report to the Recovery Manager. Recovery activities performed at the EOF will be consistent with the principle of minimizing the offsite impact on station recovery operations. These activities may include media relations, financial and insurance related activities, and maintenance of long-term governmental and regulatory affairs. The Recovery Manager will determine when to phase out EOF support activities. This would normally be done upon completion of any required clean-up activities outside of the owner-controlled area. The Recovery Manager will designate a senior plant management position holder as the Onsite Recovery Coordinator who will be in charge of recovery activities directed at restoring the plant, to the extent possible, to pre-emergency conditions. The onsite recovery organization will originate in the TSC and will subsequently operate from a site facility designated by the Recovery Manager. The Recovery Manager will report to the Chief Nuclear Officer who will remain responsible for overall nuclear plant safety. The Chief Nuclear Officer will coordinate corporate support activities and resources with site recovery operations.

1. NOTIFICATION METHODS

LOCATION	NOTIFICATION METHOD
INSIDE THE PROTECTED AREA	GAI-TRONICS ALARM AND PLANT ANNOUNCEMENT – ALARM MAKES A PULSATING SOUND
OUTSIDE THE PROTECTED AREA	SITE SIREN – THE SIREN MAKES AN ALTERNATING HI-LO SOUND
WORKING ON A LAN CONNECTED PC	POP-UP MESSAGE ON THE PC MONITOR SCREEN
SELECTED SITE OFFICE BUILDINGS	SECURITY CALL TO CERTAIN WORK AREAS – CALL RECIPIENT WILL NOTIFY CO-W0RKERS
ANYWHERE ONSITE	WORD-OF-MOUTH FROM ERO PERSONNEL NOTIFIED BY PAGER

2. EXPECTED RESPONSE TO NOTIFICATIONS

NOTIFICATION METHOD	EXPECTED RESPONSE
GAI-TRONICS ALARM/ANNOUNCEMENT	LISTEN TO ANNOUNCEMENT AND FOLLOW INSTRUCTIONS
SITE SIREN	NON-ERO PERSONNEL GO TO VEHICLES AND LEAVE THE SITE AS DIRECTED BY SECURITY
POP-UP MESSAGE ON PC SCREEN	FOLLOW INSTRUCTIONS PROVIDED IN POP-UP MESSAGE ON PC SCREEN
SECURITY CALL TO OFFICE AREAS	FOLLOW INSTRUCTIONS FROM PERSON WHO RECEIVED CALL FROM SECURITY
WORD-OF-MOUTH FROM ERO MEMBER	FOLLOW INSTRUCTIONS PROVIDED BY ERO MEMBER

3. REPORTING INSTRUCTIONS

PERSONNEL/RESPONDER CLASS	REPORTING INSTRUCTIONS
ON-DUTY PRIMARY RESPONDERS*	REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITY**
OFF-DUTY PRIMARY RESPONDERS*	REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITY**
SUBJECT-TO-CALL RESPONDERS	REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITY**
SECONDARY RESPONDERS	REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITY** NORMAL WORKING HOURS: IF FACILITY POSITION HAS BEEN FILLED, GO TO THE ASSEMBLY AREA FOR ASSIGNMENT TO ADDITIONAL SHIFTS
NON-ASSIGNED STATION PERSONNEL	GO HOME OR GO TO REMOTE MONITORING AREA AS DIRECTED**
SITE VISITORS	LEAVE SITE OR GO TO REMOTE MONITORING AREA AS DIRECTED**

* NOT REQUIRED FOR RESPONSE MANAGER, EOF COORDINATOR AND EMERGENCY NEWS MANAGER AT UNUSUAL EVENT

** FOR SECURITY EVENTS, A GAI-TRONICS ANNOUNCEMENT AND ERO PAGER MESSAGE OR CODE MAY INDICATE DIFFERENT REPORTING INSTRUCTIONS.

10.0 EMERGENCY MEASURES

10.1 Radiological Accident Assessment Systems and Techniques

The two monitored effluent pathways for accidental releases of radioactive material at Seabrook Station are the plant vent stack and the main steam lines (through the lifting of the safety relief valves or the throttling of the atmospheric steam dump valves). Each of these effluent pathways contains a monitor. The monitor responses can be correlated to the effluent radioactivity concentration. In addition to these monitored pathways, high-range containment area monitors are capable of measuring the exposure rate within the containment, which can be correlated to the radioactivity concentration within the structure. Each of the above systems may be considered as separate release pathways which can be assessed with its associated monitor. Containment leakage is also considered as a possible effluent pathway for dose assessment.

The containment monitoring system consists of redundant ionization chambers and instrumentation channels with a range of 10^0 to 10^8 R/hr (gamma). The system is Class 1E qualified. A time-dependent conversion factor has been calculated which will enable conversion of the monitor's response (R/hr) to the total noble gas concentration (µCi/cc) in the containment building at a given time after shutdown assuming that the concentration within the containment is uniform. This conversion factor is calculated based on the assumption that a core equilibrium mixture of fission products exists at t=0. It should be noted, however, that the intent of this system is not to correlate this monitor response to core conditions or damage but to estimate the concentration in the containment building. The only relationship that can be readily made from this monitor to core conditions is a minimum core damage level since the amount of diluted or undiluted primary coolant leakage into the containment building may be a major unknown variable. If available, the minimum core damage level indicated by this monitor will be used as an indication of the type of fission product mixture being released through the effluent pathways.

The Wide Range Gas Monitor (WRGM) is used to continuously monitor the gaseous activity released to the environment through the plant vent stack. Its monitoring range is large enough to encompass low level releases using a beta scintillation detector with a range of 4.0E-8 to 1.0E-1 µCi/cc and two mid to high range solid-state beta/gamma detectors of 7.0E-5 to 1.0E+3 µCi/cc and 2.0E-2 to 1.0E+5 µCi/cc, respectively. The WRGM was designed and installed to minimize personnel exposure while obtaining particulate and iodine grab samples. The WRGM also calculates a release activity in µCi/sec in the range of 1.0E+2 to 1.0E+14 µCi/sec.

A backup monitor is available in the event of a WRGM failure. This monitor consists of an ionization chamber type detector, viewing a prescribed geometrical container in which the stack exit gas flows. The detector and associated remote universal digital rate meter are capable of monitoring dose rates from 0.1 mR/hr to 10,000 R/hr.

The main steam line monitors consist of a G-M detector placed adjacent to each of the four (4) main steam lines (several inches) with remote readout modules. This monitor response (mR/hr) is used to estimate offsite doses.

10.1.1 Estimation of Offsite Dose Rates

Seabrook Station maintains a computerized dose projection system, utilized in the Control Room, TSC and EOF, which is capable of providing real time and forecast offsite dose estimates for actual meteorological and radiological accident conditions. The system is referred to as Raddose-V.

Raddose-V uses a variable trajectory, puff advection model of dispersion to predict the position of the radioactive plume. A ground level plume is modeled. The model uses a finite cloud technique to estimate external exposure received from the plume, while the standard concentration χ/Q methodology is used to estimate doses received from inhalation of radioisotopes and external exposure over a four day period from material deposited on the ground. In addition, the model incorporates routines for computing deposition, as well as the current dose rate from radioactive material deposited on the ground, out to 50 miles.

The Raddose-V calculation considers source term and plume decay, as well as the effects of wet and dry deposition of iodines and particulates. The model also includes predefined protective action recommendations to alert users of the program to any exceedances of the EPA-400 Protective Action Guides (PAGs). The EPA-400 PAGs used are 1 Rem TEDE and 5 Rem CDE-Thyroid.

The six main tasks of the Raddose-V program are:

1. Determine the source term (release rates) of airborne radioactive material, based on current, plant-specific accident data.

2. Model the atmospheric transport and diffusion of the released material, based current, local meteorological conditions.

3. To calculate TEDE, estimate the sum of exposure from the plume, inhalation of radioisotopes, and four day exposure from material deposited on the ground.

4. Calculate committed dose equivalent (CDE) to the thyroid.

5. Estimate integrated deposition of radioactive material and corresponding dose rates from deposited material.

6. Provide dose and deposition results for both real-time and forecast periods.

Raddose-V performs all calculations in discrete 15-minute "advection time steps'. The model allows up to 200 advection steps (50 hours) to be modeled. The model requires relevant meteorological and radiological information for each time step. The program data input screens allow for direct entry of Main Plant Computer System (MPCS) meteorological and radiological parameters, or the user can enter this data manually. Raddose-V then calculates plume position, and dose and deposition information, for each step, according to the meteorological and radiological data entered. New real-time calculations are conducted every 15 minutes, based on the new position of the plume at the end of the 15 minute advection step.

Once calculations are completed, users of the program are given the opportunity to print results following each 15 minute step.

For each time step, Raddose-V calculates dose rates and integrated doses at 80 radial-grid positions within the Plume Exposure Pathway Emergency Planning Zone (EPZ). Results are also provided at 77 predetermined receptor locations. Maximum dose rates by distance, based on plume position at the end of each advection time step, are calculated for each reporting location. The model also has the ability to calculate dose rates at any user-defined receptor location by entering the position's distance and bearing from the plant.

Further, the model calculates ground deposition at the 144 radial-grid receptors in the 50 mile Ingestion Pathway EPZ. These receptor locations include the same locations for which dose rates and doses are calculated in the Plume Exposure Pathway EPZ, plus receptors located at 20, 30, 40 and 50 miles at each of the sixteen (16) compass directions. TEDE and CDE-Thyroid doses are also given out to 50 miles.

Raddose-V also provides the ability to project doses (using a standard 4-hour default release duration) for the present incident without affecting the calculation results of real-time doses. Forecast results are based on "avoided" dose consistent with EPA-400 philosophy. Output reports available for real-time dose assessment are also available for the forecast calculations.

10.1.2 Evaluation of Field Environmental Samples

When Seabrook Station monitoring teams have determined the approximate plume centerline (i.e., maximum radiation level) in the field, they will take air samples at various intervals downwind from the station. These samples will be analyzed on a gross (beta, gamma) basis in the field and, if elevated levels are observed, returned to the EOF. At the EOF they will be referred to an appropriate laboratory facility to be analyzed to determine radionuclide concentrations.

Particular attention will be directed to observed iodine concentrations. The air samples will be analyzed in a two-step process. The first step involves a field analysis of the sample which measures the gross radioactivity collected on the silver zeolite cartridge and filter paper samples using a Pancake G-M detector. Field monitoring instrumentation can detect and measure radioidine concentration in the air as low as 10^{-7} Ci/cc. If the sample analysis shows a relatively high amount of radioactivity, a second analysis will be performed at an appropriate laboratory facility. The sample will be delivered to a laboratory facility for gamma spectroscopic analysis with greater sensitivity. Procedure ER 5.2, Site Perimeter and Offsite Monitoring and Environmental Sampling, also describes air sampling methods. Projected thyroid committed dose equivalent (CDE) will be determined from measured I-131 concentrations by multiplying by an estimate of the duration of the exposure and a dose conversion factor.

In addition to the measurement and evaluation of offsite direct dose rates and air samples for radioiodine, the offsite radiological impact assessment will include the identification of all principal radionuclides potentially released from the accident in all potentially significant exposure pathways. This will be accomplished through an offsite monitoring and sampling program in which environmental samples of media (water, air, soil, etc., as appropriate) will be collected and subjected to detailed radionuclide analysis. This analysis can be performed by the GEL Laboratories, Charleston, South Carolina. The radionuclide results of any such analysis would be interpreted in terms of radiation exposure to the public by the use of the comprehensive dose calculation programs available at the EOF. The results of environmental sample analyses will be evaluated in relation to US Environmental Protection Agency dose guidelines for relocation and to the US Food and Drug Administration (FDA) derived intervention levels for the radionuclides identified in FDA guidance for limiting consumption of radioactively contaminated foods.

10.1.3 Evaluation of Post Accident Samples

When an emergency condition results in core damage, an in-station (e.g., containment) source term that could be subsequently released, or a release, station emergency response personnel will obtain and analyze various post accident samples. Potential sampling points include containment atmosphere, gas spaces in other plant areas, and the plant vent stack. Per the Seabrook Station Post Accident Assessment Program, archive samples of the reactor coolant system and containment sump can also be obtained and analyzed. Source-term components, including radioiodine, would be quantified and evaluated in terms of actual or potential impact.

10.1.4 Severe Accident Management Guidance

Guidance for responding to severe accident conditions has been established and appropriate improvements have been implemented in accordance with Chapter 5 of NEI 91-04, Revision 1, Severe Accident Issue Closure Guidelines. Appropriate Severe Accident Management (SAM) references have been incorporated into applicable Seabrook Station emergency response (SSER) procedures. Severe accident management training requirements for TSC personnel are documented in the Emergency Preparedness Training Program Description. The Operations Training Department tracks SAM Implementor Training for Operations personnel.

10.2 Protective Action Recommendation Criteria

Seabrook Station will issue protective action recommendations (PARs) based on the emergency class and several factors which vary with each emergency class. No protective actions will be recommended at the Unusual Event or Alert emergency classes. At a Site Area Emergency, PARs for beach areas may be issued based on the time of year and selected plant status indicators. At a General Emergency, PARs will be issued based on selected plant status indicators, dose projections and field monitoring results.

Protective action recommendations have been developed using the guidance of NUREG-0654, Supplement 3, which provides an acceptable method to comply with 10CFR50, Appendix E, Section IV, paragraph 3 in the use of evacuation time estimates in the formulation of PARs for the plume exposure pathway emergency planning zone, and provides guidance for meeting planning standard 10CFR50.47(b)(10) in the development of a range of protective actions.

The protective action recommendations have been coordinated with responsible State of New Hampshire and Commonwealth of Massachusetts authorities.

For a General Emergency, other than a General Emergency based on a Hostile Action, Seabrook Station will at a minimum recommend (1) evacuation of towns within 2 miles of the Station, (2) evacuation of towns 5 miles downwind of the Station, (3) sheltering of the remaining towns within the EPZ, (4) evacuation of Hampton and Seabrook Beaches and (5) closure of Massachusetts beach areas. For a General Emergency based on a Hostile Action, the initial PAR will be to shelter for all EPZ towns. PARs may be expanded based on further assessments of plant and radiological conditions.

For accidents that result in airborne radioactivity releases, projected dose and dose rate estimates at the site boundary and distances out to 10 miles will be issued to those offsite authorities responsible for protective action decision making. Based on offsite field monitoring results and dose projections, Seabrook Station will recommend protective actions in accordance with the criteria set forth in the EPA Protective Action Guidelines, Table 10.1.

Seabrook Station will also perform ingestion pathway sampling and analysis, and assist offsite authorities in determining protective actions for the ingestion exposure pathway Emergency Planning Zone.

10.3 Radiological Exposure Control

During a Station emergency, abnormally high levels of radiation and/or radioactivity may be encountered. These levels may range from slightly above those experienced during normal station operation to life-endangering levels of several hundred rem in a short period of time. Under all situations, whether it is immediate action to regain control of the emergency or for life-saving purposes, measures will be taken to minimize personnel doses from external and/or internal sources of radiation.

Specific dose guidelines for entry or re-entry into areas in order to (1) remove injured persons, and (2) undertake corrective actions, are defined in Table 10.2 of the plan. The Site Emergency Director will authorize, with Health Physics Coordinator or Radiological Controls Coordinator concurrence, emergency dose guidelines consistent with these or more restrictive guidelines dependent upon emergency conditions. The Radiological Controls Coordinator will discuss the hazards involved in rescue procedures with the members of the response team prior to undertaking any health-threatening mission.

Considerations to be made prior to allowing personnel to accept risks associated with rescue operations are defined in Table 10.2, Emergency Dose Limits.

Dose to individuals providing other emergency functions will be consistent with the limits specified in Table 10.2 with every attempt being made to keep personnel dose as low as reasonably achievable (ALARA).

The Health Physics Coordinator, or a designated alternate, is responsible for maintaining the emergency radiological protection programs developed for station staff and support personnel. A supply of self-reading dosimeters will be stored at the Health Physics Control Point for distribution and assignment to the Technical Support Center. An emergency tote of self-reading dosimeters is stored at the EOF to ensure immediate deployment of offsite monitoring teams with dosimetry and to support entry of offsite personnel to the site. Self-reading dosimetry readers and program software have been added to the EOF inventory to ensure dosimetry activation.

Each emergency response organization member reporting to the site will be provided a Dosimeter of Legal Record (DLR) badge and a self-reading dosimeter. Dose records based upon the results of these dosimeters will be maintained at each center. This information will be cross-referenced with and replaced by DLR badge data when available. Should the station exhaust its supply of DLR badges, the station DLR vendor, Mirion Technologies (GDS) will supply DLR badges. Offsite authorities responding onsite will be provided dosimetry.

10.4 Protective Measures

10.4.1 Personnel Accountability

The determination of station personnel accountability is facilitated by the use of a computer-assisted accountability system. The goal of this system is to generate an initial list of missing individuals within 30 minutes of the declaration of an Alert or higher emergency classification level.

Upon declaration of an emergency and activation of station emergency alarms, station personnel assigned specific emergency responsibilities will proceed to their designated emergency center location. If an Alert or higher emergency classification level is declared, non-assigned personnel (e.g., station visitors, contractor and other station personnel) will return their dosimetry to the designated normal storage racks, if appropriate, and leave the protected area through the Guard Island. There, non-assigned personnel will receive instructions concerning station egress measures. Security will generate computer reports of personnel entering and evacuating through Guard Island. All emergency response personnel reporting to emergency centers will log in on card readers and accountability rosters associated with each center.

Station security personnel will be responsible for reviewing computer results and reporting these results to the Security Shift Supervisor who, in turn, will make the final determination of station personnel accountability and report the results to the STED or Site Emergency Director. Search and rescue procedures will be implemented if any persons have been identified as missing.

10.4.2 Station Access/Egress Control Methods

Under all Station emergency conditions, public address announcements, made by control room personnel, will provide emergency notification and instruction to those personnel within the Protected Area. Individuals in the balance of the owner-controlled area will be alerted by an onsite siren. Visitors or those in transit within the owner-controlled area will be advised by the most appropriate means. The complete warning and advisement process will be accomplished in a rapid manner to ensure personnel safety.

When an Alert, Site Area Emergency or a General Emergency has been declared, all non-assigned station personnel will be directed to proceed to either the remote monitoring area for monitoring and decontamination or directly home (except during outages when the station is in Mode 5 or 6 – see Chapter 3, section 3.2). Unless directed otherwise, non-assigned personnel will use their personal vehicles to leave the site.

In the event that station conditions may produce or have produced a release, traffic control measures will be established to direct unassigned personnel off site via the most appropriate exit (the North Access Road or the South Access Road). The Security Shift Supervisor will be informed by the Short Term Emergency Director or by the Site Emergency Director which access road to use for site evacuation traffic in order to minimize the potential for radiation exposure or contamination by radioactive material.

If a radioactive release has occurred which might result in the contamination of Station evacuees, personnel trained in contamination monitoring techniques will proceed to the remote monitoring area to perform contamination monitoring of evacuated vehicles and personnel. All evacuating personnel will be instructed to report to the remote monitoring area to be surveyed for contamination levels. If contamination is detected, actions will be implemented that appropriately correspond to the type and degree of contamination and that are consistent with the priorities of the emergency actions and conditions underway.

The Health Physics Coordinator will contact the Radiological Assistant at the EOF and report Remote Monitoring Area contamination survey results. Appropriate personnel and vehicle decontamination techniques will be used as necessary.

Upon being released, station evacuees will be advised of area evacuation routes by security. Site evacuation routes are noted in Figure 10.2, Seabrook Station Evacuation Routes. Appendix C provides evacuation time estimates of the public within the plume exposure pathway EPZ and also summarizes the major evacuation routes which will be utilized if necessary.

The Security Coordinator will make arrangements for station badging necessary to support incoming emergency response personnel. All incoming responders will be directed to report to the EOF where they will be briefed and provided with the necessary equipment.

10.4.3 Protective Measures for Hostile Action Based Events

Operations Department Abnormal Operating Procedures (AOPs) contain specific instructions for onsite personnel within the Protected Area for hostile action based events. The AOPs are referenced in Appendix G, Section VII. The content of the instructions are specific to land based or airborne events. The protective measures prescribed by the AOPs conform to the requirements of 10 CFR 50 Appendix E, Section IV, 1.

10.4.4 Decontamination Capability

Station decontamination facilities are located in the Operational Support Center, specifically at the Radiologically Controlled Area HP Control Point. The RCA shower is available for personnel decontamination purposes. Soap, brushes, etc., are available to aid in decontamination efforts. Survey instrumentation for personnel monitoring is available here. If necessary, internal contamination can be assessed with the use of whole body count equipment (FASTSCAN) or its backup. All waste generated through the use of the decontamination facilities is collected and processed by the station liquid radwaste system.

Decontamination capability exists at the EOF and at the remote monitoring area. At the remote monitoring area, initial decontamination methods will involve the use mild soap and water in conjunction with a soft brush. All radwaste generated as a result of this procedure will be disposed of by normal radwaste procedures. All personnel with detectable skin contamination will be detained for decontamination purposes; otherwise, they will be released. Radiation Protection Department procedures for personnel surveys and decontamination techniques prescribe progressive techniques for skin decontamination, including techniques applicable to removal of radioiodine contamination. The procedures and supplies for implementing them are maintained at the EOF and remote monitoring area. At both locations, personnel decontamination can be accomplished with the use of a shower station, with wash water collected into a tank and pumped to 55-gallon drums that shall be transferred for processing onsite. If required, vehicle decontamination will be accomplished via dry decontamination methods.

10.4.5 Use of Onsite Protective Equipment and Supplies

The station supplies of personnel radiation protection equipment will be used as necessary to support the emergency response effort. Respiratory protection equipment, protective clothing, and potassium iodide will be assigned to the onsite emergency response organization members in accordance with Procedure ER 4.3, Radiation Protection During Emergency Conditions. Respiratory protection qualifications for personnel assigned to OSC positions, Offsite Monitoring Team positions, On-shift Electricians, On-shift Mechanics, and On-shift I&C Technicians will be tracked by Emergency Preparedness. Respiratory protection qualifications for Plant Engineering engineers who could be assigned to corrective action teams will be tracked by Plant Engineering. Radiological monitoring equipment will be stocked and available for use at established emergency centers. Seabrook Station documents containing detailed lists of dedicated equipment available to support radiological emergency response efforts are referenced in Appendix F.

10.4.6 Radiation Guideline Action Levels

Radiation guideline action levels for emergency center habitability are shown on Tables 10.1 and 10.3. These tables describe the actions of station staff in response to a range of station radiological conditions.

10.5 Aid to Affected Personnel

10.5.1 Medical Treatment

Station medical facilities are provided in the first aid station located in proximity to the Radiologically Controlled Area HP Control Point. Seabrook Station also maintains a site medical office located in the Operations Support Building. The first aid station and medical office are equipped and supplied to implement the requirements of the Medical Program. (Protected: Ref. NRC IR 85-32[10])

Specific station personnel have been trained as Emergency Medical Technicians (EMTs). One Emergency Medical Technician, supplemented by at least one additional individual trained in first aid and cardio-pulmonary resuscitation, will be on site at any one time to provide 24-hour emergency response coverage.

10.5.2 Medical Transportation

Arrangements have been made with Exeter Hospital to provide care for contaminated injured patients. In addition, Wentworth-Douglass Hospital located in Dover, NH, will provide care for these individuals on a backup basis. Both hospitals participate in medical emergency drills as a portion of emergency plan training.

The Seabrook Fire Department ambulance will be used for medical transportation of injured and contaminated personnel. The ambulance is capable of radio communications with the hospital while en route with a patient. (Protected: Ref. NRC IR 85-32[12])

Ambulance personnel are provided with specific training by Seabrook Station staff on the radiation protection considerations associated with radiologically contaminated personnel.

Table 10.1
EPA Protective Action Guidelines

Applicable to Seabrook Station Protective Action Recommendation Procedures

PAG	PROTECTIVE ACTION	COMMENTS
1 rem TEDE[a]	Evacuation	Evacuation of the general public should be initiated at 1 rem.
5 rem CDE[b] - thyroid	Evacuation	Evacuation of the general public should be initiated at 5 rem.

Potential State Considerations

PAG	PROTECTIVE ACTION	COMMENTS
5 rem TEDE	Evacuation	Special situations include severe weather, competing disasters, evacuation impediments or institutionalized persons not readily mobile.
25 rem CDE - thyroid	Evacuation	Special situations include severe weather, competing disasters, evacuation impediments or institutionalized persons not readily mobile.
>25 rem CDE - thyroid	Administer KI	Offsite Emergency workers and institutionalized persons.

[a] Total Effective Dose Equivalent - see Definitions

[b] Committed Dose Equivalent - see Definitions

Table 10.2
Emergency Dose Limits

Dose Limit[a] [b] (rem)	Activity	Condition
5	All activities	
10	Protecting valuable property	Lower dose not practicable
25	Lifesaving or protection of large populations	Lower dose not practicable
>25	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved.

[a] TEDE to non-pregnant emergency workers.

[b] Emergency dose limits for the lens of the eye and for any other organ (including skin and extremities) are three and ten times listed values, respectively.

Table 10.3
Emergency Center Protection

1. Center habitability actions shall be as indicated on Figure 10.1.

2. The need to dispense potassium iodide (KI) tablets to emergency response personnel is based upon a projected or actual thyroid committed dose equivalent (CDE) $\geq$ 5 rem[1]. Administering KI after an uptake may limit thyroid CDE depending on time after exposure.

3. Protective clothing (lab coats, shoe covers, cotton gloves) will be required when indicated by RP survey results.

[1] Based on most limiting FDA recommended threshold for pregnant and lactating women per "Guidance, Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies," U.S. Department of Health and Human Services, Food and Drug Administration, Center for Drug Evaluation and Research (CDER), November 2001.

11.0 EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

11.1 Emergency Notification

Upon classification of accident conditions at the Station, the Short Term Emergency Director ensures that the New Hampshire State Police and Massachusetts Emergency Management Agency are notified. This notification is initiated within 15 minutes of emergency classification and is the initial link to the offsite governmental emergency network for the activation of offsite emergency response plans, including emergency public notification if the emergency condition warrants it. The format and contents of the initial message between the Station and the offsite warning point dispatchers are specified in notification procedures that are reviewed and agreed upon by state authorities.

Having been notified through State channels, the Massachusetts Department of Public Health and the New Hampshire Division of Public Health Services will call Seabrook Station and request the following information:

- Verification of the information provided during initial notifications
- A brief description of events and any prognosis

When requested, additional follow-up information will be provided to State agencies. This information includes

- prevailing weather conditions (e.g., wind velocity, direction, atmospheric stability, precipitation, etc.),
- release magnitude, duration and impact,
- actual or projected dose rates at the Station boundary; projected dose rates at various distances from the Station (2, 5, and 10 miles), and
- emergency response actions underway.

Follow-up reports will be provided to the state personnel when requested.

11.2 Public Notification

Public alerting and notification within the Seabrook Station plume exposure pathway EPZ will be accomplished through the use of the equipment and systems described in Appendix E.

11.3 Public Information

Any emergency will generate a continuous and intensive demand for up-to-date public information. This is best accomplished if each organization involved is aware of what the others are saying. Consequently, Seabrook Station has planned for the establishment of a Joint Information Center for the purpose of providing coordinated dissemination of information to the media.

At an Unusual Event declaration, the Seabrook Station News Service staff will coordinate public information inquiries in accordance with Procedure ER 3.4, Seabrook Station News Services Operations. However, under an Alert, Site Area Emergency or General Emergency, the Joint Information Center, co-located with the EOF in Portsmouth, New Hampshire, will be activated. It will be staffed and operated by designated public information personnel from Seabrook Station in accordance with Procedure ER 3.5, Joint Information Center Operations. Personnel with nuclear expertise will be responsible for media contact and interfacing with public information representatives for the States of New Hampshire and Massachusetts, the NRC and other Federal agencies. JIC support will also be supplied by NextEra Corporate Communications, based out of Florida. The Corporate JIC Manager and Emergency Communications Team (ECT) will work together with the JIC personnel located at the EOF. The Corporate JIC team will provide support remotely or travel to the JIC, dependent on the severity of the emergency.

The Corporate JIC Manager and the Emergency News Manager from Seabrook Station will manage the Joint Information Center and coordinate Joint Information Center activities with representatives from state and federal agencies at the Joint Information Center. The Emergency News Manager will be supported by technical advisors and other Joint Information Center support staff. The Joint Information Center Technical Advisor will obtain emergency information in the EOF and communicate this information to the Emergency News Manager and the Corporate JIC Manager. The Emergency News Manager and the Corporate JIC Manager will designate support staff to draft news statements, to staff record approved information on public and media information telephone lines, to monitor news media broadcasts, and to assist news media representatives present in the Joint Information Center briefing area. The Emergency News Manager and/or the Corporate JIC Manager will coordinate joint news conferences conducted by utility, state and federal personnel at the Joint Information Center.

The Corporate JIC Manager and the Emergency News Manager are the primary spokespeople for the Seabrook Station ERO at the Joint Information Center. A senior company official, designated in accordance with Seabrook Station Communications policies, may support the Emergency News Manager and/or Corporate JIC Manager as a spokesperson for the company.

State and federal public information personnel are provided work space and communications equipment in the Joint Information Center. Emergency information obtained from the Seabrook Station EOF and the State Emergency Operations Centers will be coordinated by utility and state personnel at the Joint Information Center. Public inquiries will be dealt with by rumor control personnel who staff designated toll-free telephone lines at the New Hampshire and the Massachusetts Emergency Operations Centers. Utility and state staff at the Joint Information Center will coordinate addressing rumor trends identified by state rumor control personnel and utility media monitoring personnel.

Public information materials are available at the Joint Information Center. The materials include information on radiation, Seabrook Station operations, the Seabrook Station emergency planning zone, the emergency classification system, and other general emergency plan information.

Communications staff provide public information materials to the general public upon request.

Public information materials specific to emergency plans of New Hampshire and Massachusetts have been developed. The materials have been distributed to residents and made available to transients in New Hampshire and Massachusetts who are located within the plume exposure pathway Emergency Planning Zone (EPZ). Materials distributed include the following:

- Resident population: emergency information and special needs survey cards are distributed yearly to plume exposure pathway EPZ households.

- Beach/Transient population: signs posted at beaches, parks and state forest recreation areas

- Commercial establishments (restaurants, businesses, health care facilities, etc.) and schools: emergency information.

- Farmers, farm workers, food processors and food distributors: a brochure containing information on protection of the food chain. This brochure is made available to farmers and food processors within the ingestion exposure pathway EPZ.

These materials contain facts about the emergency plans, information on potential protective actions (such as sheltering and evacuation), listings of EAS radio stations, emergency bus routes and evacuation routes, considerations for school children and persons with special needs, names and locations of reception centers and host facilities, contacts for additional information and educational material on radiation.

In addition to the printed emergency plan public information materials, the states have developed broadcast messages consistent with Seabrook Station's emergency classification and protective action recommendation schemes. The messages are intended to be used as part of the Emergency Alert System to provide information to the public when needed.

Communications personnel are in contact with local and regional media, respond to media inquiries, and annually coordinate a program to acquaint the news media with information concerning radiation, emergency public information procedures, general Station characteristics, the emergency classification system and other pertinent facts.

12.0 MAINTAINING EMERGENCY PREPAREDNESS

12.1 Drills and Exercises

Emergency exercises and drills shall be conducted to test and evaluate the adequacy of emergency facilities, equipment, procedures, communication channels, actions of emergency response personnel, and coordination between Seabrook Station and offsite agencies. A summary of exercises and drills, and associated elements are presented below.

As used for emergency preparedness drills and exercises, "annual" means that the event shall be conducted once within a calendar year. For "semi-annual," the event shall be conducted once within the first 6 calendar months of a year and once again within the second 6 calendar months. "Biennial" means the event will be conducted within a two-year period.

12.1.1 Radiological Emergency Plan Exercises

An exercise tests the execution of the overall Station emergency response and its integration with responding offsite organizations. In order to test and evaluate the Station emergency response, an exercise shall be conducted every two years. Consistent with the regulatory requirements for offsite exercise participation, Federal, State and local agencies shall be notified of intended exercises and their conduct shall be coordinated with offsite authorities as appropriate.

12.1.2 Emergency Plan Drills

A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular emergency response function. The frequency of drills is dependent upon the function to be tested.

1. Combined Functional Drills

To ensure that adequate emergency response capabilities are maintained during the interval between biennial exercises, at least one annual drill will be conducted involving a combination of some of the principal functional areas of the onsite emergency response capabilities. The principal functional areas of emergency response include activities such as management and coordination of emergency response, accident assessment, protective action decision making, and plant system repair and corrective actions. Activation of all of the emergency response facilities will not be necessary during these drills. State and local governments within the plume exposure pathway EPZ may participate in these drills at their request.

2. Communication Drills

To ensure that emergency communications equipment is operable, communication drills shall be conducted as outlined below. Included in the scope of these drills is the aspect of understanding message content. Paragraphs c, d, and g below may be performed as part of annual combined functional drills and the required biennial exercise.

a. Communication channels with State governments within the plume exposure pathway shall be tested monthly;

b. The pager system for the notification of the Primary Responders of the Emergency Response Organization (ERO) shall be tested weekly;

c. Data transmission capability between Station emergency centers shall be tested annually;

d. EOF communications to State Emergency Operation Centers and to Station field assessment teams shall be conducted annually;

e. Communications between the Control Room and the NRC Headquarters Operations Center shall be tested weekly or as otherwise directed by the NRC;

f. Communications between the EOF, TSC and the NRC Headquarters Operations Center shall be tested monthly or as otherwise directed by the NRC; and

g. Notification of the Secondary Responders of the ERO via the automated telephone notification service shall be tested at least annually.

3. Fire Drills

To evaluate the response and training of the Station fire brigade and coordination of same with offsite fire support, a number of fire drills are conducted annually. The Town of Seabrook Fire Department shall be requested to participate in at least one drill annually. The drills shall be conducted in accordance with the Seabrook Station Fire Protection Manual (SSFP).

4. Medical Drills

To evaluate the response and training of the Station medical response and offsite hospital personnel, a medical drill shall be conducted annually involving a simulated contaminated individual. Although the Station medical response may be tested more frequently, the offsite response portion of medical drills may be performed as part of the biennial exercise.

5. Radiological Monitoring Drills

Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually. These drills shall include collection and analysis of airborne sample media, communications, recordkeeping and, if feasible, interface with other offsite monitoring efforts. In addition, a drill will be conducted on the collection of other sample media (e.g., soil, water and vegetation). Radiological monitoring drills may be performed as part of a training activity, another drill or the biennial exercise.

6. Health Physics Drills

Health Physics drills shall be conducted semiannually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements. These drills may be performed as part of a training activity, another drill or the biennial exercise. Additionally, Chemistry personnel shall be drilled annually on obtaining and analyzing post-accident samples.

12.1.3 Drill and Exercise Scenarios

The Emergency Preparedness Manager is responsible for coordinating preparation for and implementation of drills and exercises with the exception of fire and medical emergency drills. Operations Support staff are responsible for coordinating preparation for and implementation of fire and medical emergency drills. For exercises that include offsite participation, the scenario shall be submitted to FEMA for agency review in accordance with regulatory guidance. All exercise scenarios shall be submitted to the NRC prior to implementation.

Within an eight-year period (beginning 1/1/2014), drill and exercise scenario content shall be varied to test all the major elements of the emergency preparedness program. These major elements correspond to the objectives presented in applicable fleet and site procedures. Within an eight-year period, one scenario shall include the states' response within the ingestion pathway EPZ. In general, the scenario shall simulate a sequence of emergency conditions that would call for the mobilization of the offsite authorities, require recommendations of offsite protective measures, and allow for evaluation of offsite plans and their integration with the Station response. The scenario shall include, as a minimum, the following:

1. Date, time period, locations and participating organizations;

2. Basic objectives and specific elements that are to be tested;

3. Guidelines and extent of play;

4. Controller instructions, and a list of controllers and evaluators;

5. A narrative summary of the exercise scenario and expected responses; and

6. Time schedule of real and simulated events.

Seabrook Station cannot commit other organizations to conduct an exercise during off-hour times. Outside organizations shall be encouraged to participate in exercises, but starting times and pre-notification for exercises have to be agreed upon by participating offsite organizations. Exercises will be conducted in different seasons of the year, to the extent practicable, depending on circumstances such as scheduled refueling outages and exercise schedules for other sites affecting the availability of NRC and FEMA evaluators.

The exercise shall be structured with sufficient flexibility to allow free play for decision-making processes. The exercise scenario package shall describe a specific accident sequence, contain a set of input messages, and list anticipated response actions which parallel the accident sequence. The exercise controller organization shall receive instructions to recognize areas where ERO responses may deviate from anticipated responses. The exercise controller organization may (1) restrict player action if the response threatens the approved time sequence; (2) restrict player action if the response circumvents a required exercise objective; and (3) introduce "free play" items to the scenario sequence if player actions become stagnant.

Exercise elements which may allow free play in the decision-making process include the following:

1. Exposure control actions;

2. Manpower augmentation actions;

3. Emergency classification actions, particularly the de-escalation process;

4. Recommendation of protective actions; and

5. Coordination and communication with offsite authorities.

12.1.4 Evaluation of Exercises

To evaluate the performance of participating facility personnel and the adequacy of emergency facilities, equipment and procedures used during an exercise, the Exercise Manager shall arrange for qualified controllers and evaluators to evaluate and critique the exercise.

A critique shall be conducted as soon as feasible following the conclusion of the exercise with player personnel as designated by the Exercise Manager. After the critique, the controllers and evaluators shall provide drill/exercise-related documentation and performance reports to the Drill/Exercise Manager. The Drill/Exercise Manager shall use this information to determine whether, and to what extent, drill/exercise objectives were demonstrated.

The exercise documentation shall be submitted to the Emergency Preparedness Manager who shall assign responsibility and deadlines for corrective actions. Individuals assigned this responsibility shall be required to document actions taken to improve the Station's emergency preparedness.

12.1.5 Credit for Response to an Actual Emergency

Demonstration of exercise or drill objectives scheduled for evaluation in accordance with Fleet EP Drill and Exercise procedures may be satisfied by the effective response and documentation of designated key ERO staff to an actual emergency. Credit will be given for this objective when the following provisions are met in response to an actual emergency.

1. The emergency required a prompt and timely response and mobilization of key ERO staff responsible for the implementation of RERP emergency functions;

2. The emergency resulted in the establishment of communications links among responding organizations;

3. The following documentation, describing the level of response and involvement of key ERO staff to the emergency, is available:

   Type of emergency;
   Period of response;
   Arrival times of responders;
   Communications logs;
   Emergency decisions made and implemented;
   Emergency plan resources used; and
   List of staff involved.

4. The event is evaluated in accordance with Emergency Preparedness Department procedures for Post Event Reviews and Evaluations to determine if the actions taken were appropriate or the response warrants implementation of future corrective measures.

12.2 Emergency Plan Training

The following sections describe the various types of Emergency Plan Training.

12.2.1 Emergency Response Organization (ERO)

Training for ERO personnel is conducted in accordance with the ERO Training Program Description. Changes to this document shall be reviewed to ensure that (1) they do not decrease the effectiveness of the SSREP, the SSER or Seabrook Station emergency response capabilities, and (2) when implemented, the emergency preparedness program will continue to meet the applicable standards of 10 CFR 50.47(b) and the requirements of 10 CFR 50, Appendix E. (Protected: Ref. NRC Inspection Report 50-443/93-03)

Major elements of the program are discussed below.

Seabrook Station personnel with specific positions in the ERO shall receive training to initially qualify them for a response position. ERO assignments shall, as much as possible, parallel normal job knowledge, skills and abilities.

Initial training shall consist of an overview course and other courses that are appropriate to the individual's response position. The required initial courses are specified in the ERO Training Program Description.

Selected ERO members shall receive annual re-qualification training to maintain their level of emergency response knowledge. The required re-qualification training courses are also specified in the ERO Training Program Description. Re-qualification training courses are conducted throughout the year. The ERO Training Program Description contains a generic annual schedule which is used to ensure that re-qualification training occurs at about the same time period each year. Re-qualification courses may be scheduled up to three months away from the generic schedule to accommodate plant events such as outages.

Annual re-qualification training courses shall be completed within 15 months. Training requirements are discussed in the ERO Training Program Description.

Training other than that shown in the ERO Emergency Preparedness Training Program Description may be given to address specific needs.

12.2.2 Support Groups

Personnel from support groups who report to Seabrook Station shall be offered training designed to aid them in performing their emergency response function, including the Town of Seabrook Fire Department. This training shall be offered annually.

Support groups that do not report to Seabrook Station shall also be offered training designed to aid them in performing their emergency response function. These personnel include NH Homeland Security & Emergency Management, NH Department of Health and Human Services, Massachusetts Emergency Management Agency, Massachusetts Department of Public Health, Maine Emergency Management Agency, Wentworth-Douglass Hospital and Exeter Hospital. (Protected: Ref. NRC IR 86-18[03]) This training shall be offered annually.

12.2.3 Station Personnel with No ERO Assignment

Station personnel with no ERO assignment shall be trained in their proper response to an emergency during Plant Access Training. This training shall be given on an annual basis.

12.2.4 Emergency Preparedness Department Personnel

Emergency Preparedness Department personnel receive plant access training and training specific to their individual ERO assignments. In addition, the Emergency Preparedness Manager schedules personnel participation in specialized emergency planning training, participation in EP related conferences, and as technical specialists for EP audits at other sites.

12.2.5 Records

Documentation of training conducted in support of emergency planning is maintained in accordance with appropriate nuclear training procedures.

12.3 Review and Updating of Plan and Procedures

Independent reviews of the Seabrook Station emergency preparedness program shall be conducted every 12 months. The reviews shall include the emergency plan, its implementing procedures, training, equipment, readiness testing and State and local government planning interfaces. Management controls shall be implemented for evaluation and correction of review findings. The result of the review, along with recommendations for improvements, shall be documented and retained for a period of five years.

Intent revisions to the SSREP and to SSER emergency plan implementing procedures ER 1.1, Classification of Emergencies; ER 1.2, Emergency Plan Activation; and ER 5.4, Protective Action Recommendations, shall be submitted to the On-Site Review Group (ORG) for review and approval before implementation. Intent revisions of other emergency plan implementing procedures contained in the SSER shall be reviewed by a station qualified reviewer per the Station Qualified Reviewer program and approved by the Emergency Preparedness Manager prior to implementation. On an annual basis, written agreements with outside support organizations and government agencies shall be evaluated to determine if such agreements are still valid. (Protected: Ref. FPL Common Letter L-2005-214)

If not, then these agreements shall be renewed and updated; otherwise, the agreements shall be considered current. Telephone number listings associated with the Station emergency response facilities shall be reviewed quarterly and updated if necessary. Revisions shall be made in accordance with current regulations and guidelines on a continuing basis, as applicable. Revisions and changes to the plan and procedures shall be forwarded to all document control list recipients. (Protected: Ref. NRC IR 86-18[31])

12.4 Maintenance and Inventory of Emergency Equipment and Supplies

Emergency equipment and supplies are maintained as indicated in the Emergency Preparedness Facility Inventory Manual. Emergency portable survey instruments and dosimetry will be calibrated in accordance with applicable health physics programs and procedures. Along with requirements for calibration, the instruments shall be source-checked before each use. There are sufficient reserve instruments and equipment to replace those that are removed from emergency kits for calibration purposes. An inventory of the emergency storage locations shall be made, and discrepancies shall be noted and corrected.

12.5 Emergency Preparedness Manager

The Emergency Preparedness Manager is the emergency planning coordinator with overall authority for radiological emergency response planning for Seabrook Station. The Emergency Preparedness Manager has the following responsibilities:

1. Maintain the Seabrook Station Radiological Emergency Plan (SSREP).

2. Maintain the Emergency Response Manual (SSER).

3. Ensure the conduct of drills and exercises.

4. Track identified drill and exercise deficiencies, and associated corrective action.

5. Maintain Emergency Response Organization staffing.

6. Maintain Emergency Response Organization pager assignments and publish schedules.

7. Maintain the Emergency Response Organization notification system data base.

8. Maintain the emergency response facilities as described in the Seabrook Station Radiological Emergency Plan and Emergency Response Manual.

9. Obtain and track the availability of facilities and equipment required to maintain the Seabrook Station emergency response in a continuous state of readiness.

10. Ensure implementation of the communications and equipment test program.

12.6 Technical Training Supervisor

Ensures the conduct and documentation of emergency preparedness training.

12.7 Operations Support Manager

1. Maintains Operations Department fire response and medical emergency response procedures.

2. Ensures the conduct of fire and medical emergency response drills.

13.0 SUMMARY OF CHANGES

Rev. 77: (PCR 02355399 January 2021)

Section 2 & Figure 9.1 – Removed reference to Red and White teams.

Figure 6.1 - Corrected location of Emergency Operations Facility.

Section 6.2.5 – Removed High Pressure Ion Chamber from the list of EOF equipment.

Section 7.5.1 – Removed requirement that the mobile communications with the offsite survey teams be push-to-talk.

Figure 8.16 – Revised the location of the Seabrook Station News Services from the Science and Nature Center to the Joint Information Center or as directed by the Emergency New Manager. Revised number of Technical Advisors to "as needed".

Section 9.2.1 – Revised to allow the Response Manager to obtain a briefing from either the Site Emergency Director or the Control Room.

Section 11.3 – Replaced title of Science and Nature Center staff to Communications staff. Revised description of contact between the Seabrook Station Communications personnel with the media.

Section 12.1.2.3 – Revised to request the Town of Seabrook Fire Department to participate in a drill annually.

Section 12.3 – Editorial title change from SORC to ORG.

Rev. 75: (PCR 02308922 and PCR 02330818 December 2019)

Figure 8.9, Section 1-06.1.5, Section 1-08.3, Section 1-11.3 Revised for implementation of the Joint Information System. Reduction of JIC Technical Advisor position to 1 per shift. Reduction of JIC Support Staff to 3 per shift.

Section 1-11.3 replaced the term calendar with brochure for emergency information distribution to the public**.**

Rev. 74: (PCR 2291007 March 2019)

12.1.2.2.g replaced "RapidNotify emergency notification service" with "automated telephone notification service."

Rev. 73: (PCR 02276102 September 2018)

Revised sections 2 and 10 to support relocating remote monitoring area from Portsmouth to onsite.

Rev. 72: (PCR 2217534 August 2017)

Section 5 – Corrected footers on EAL charts. Corrected typographical error on Figure 5.7 (Category A to Category R) (AR 2217534).

Section 12 – Replaced validation, exemption, and deferral are discussed in the ERO Training Program Description with training requirements are discussed in the ERO Training Program Description (AR 2194476).

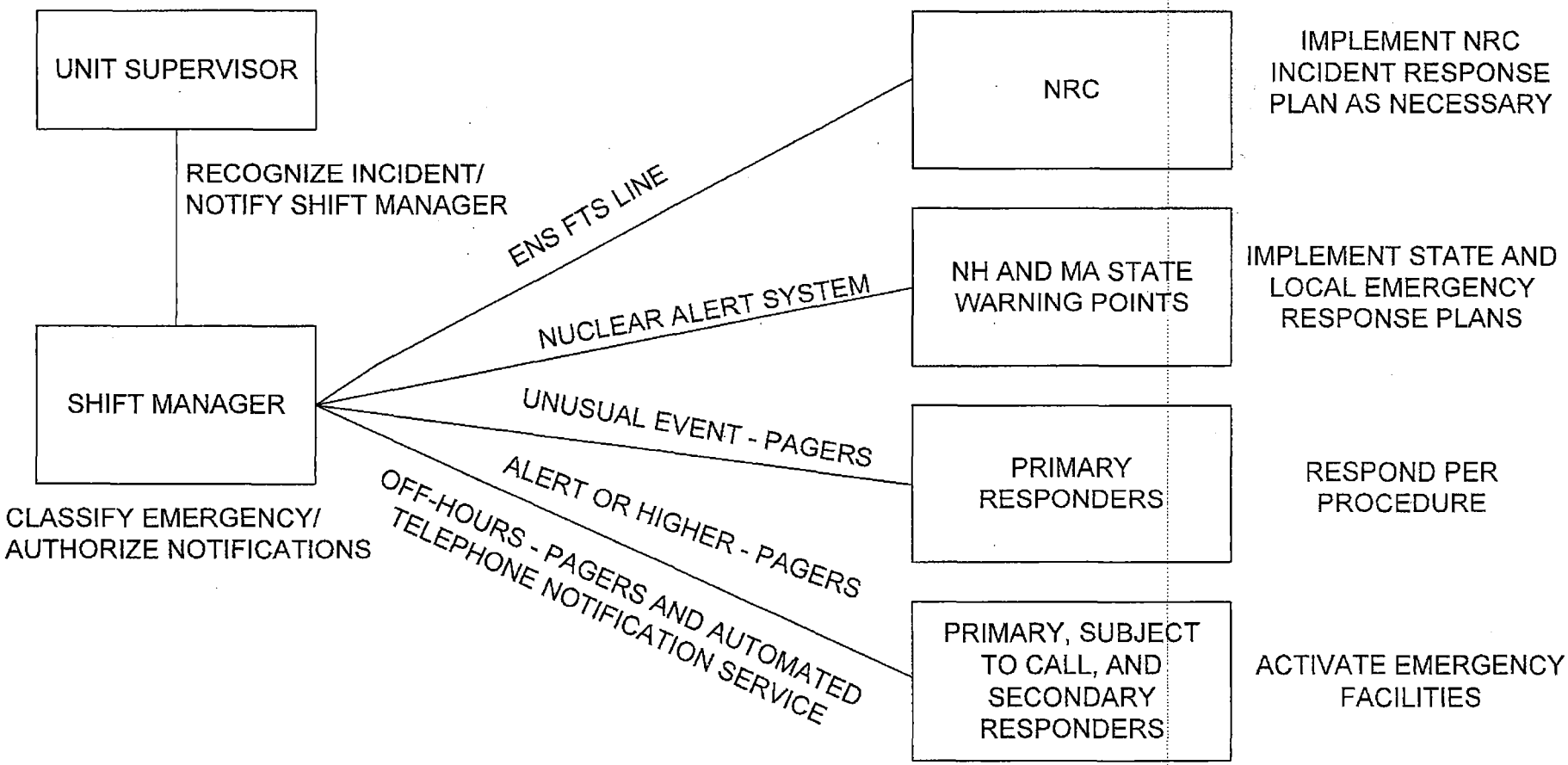
Appendix D – Updated Letter of Agreement with the State of New Hampshire and Commonwealth of Massachusetts.

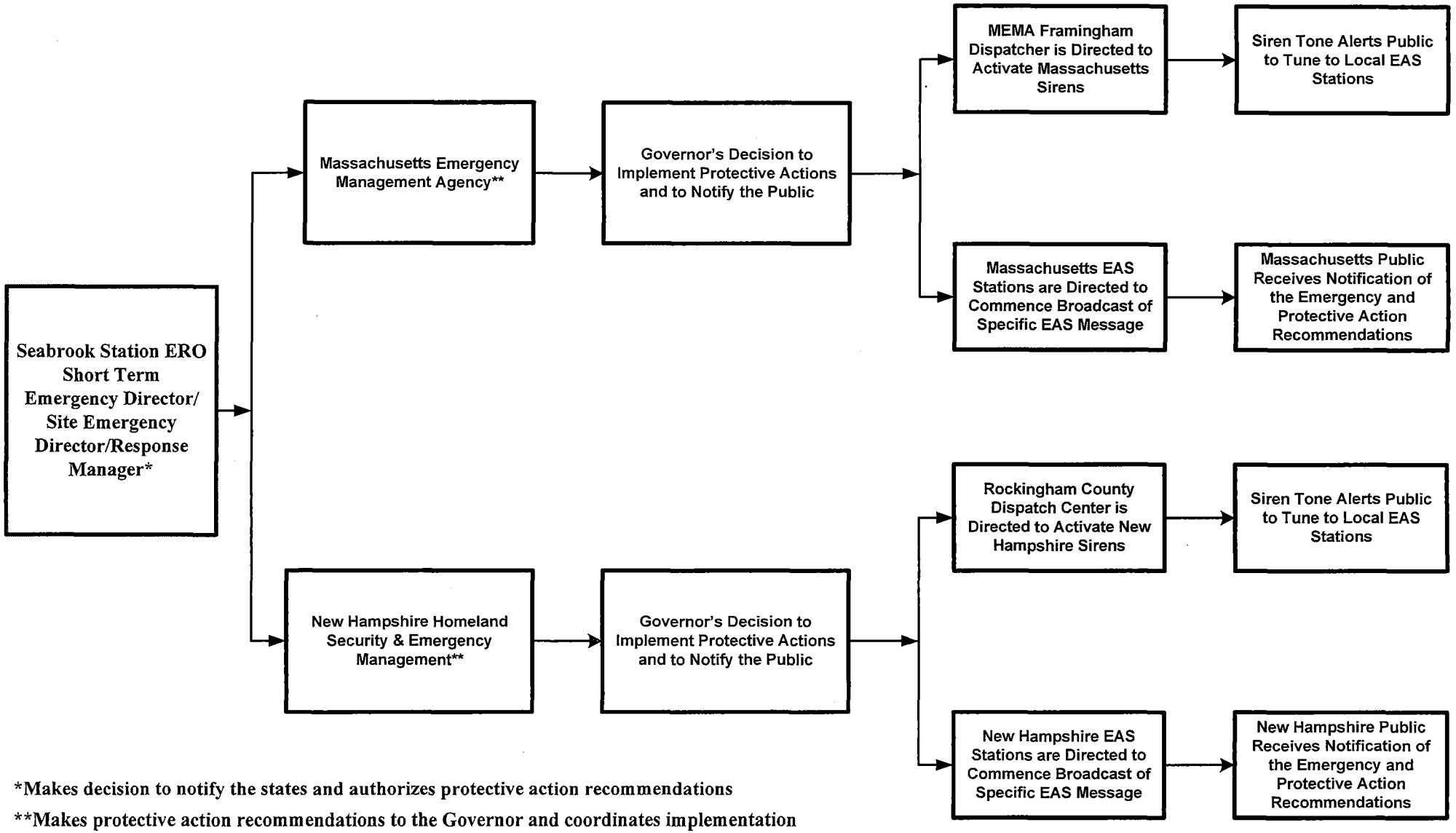
Rev. 71: (PCR 2191568 and PCR 2211605 July 2017)

Section 5 – Editorial Change to correct footer in Figures 5.6, 5.7, and 5.8.

Section 9 – Replaced Site Vice President title with Plant General Manager. Corrected typographical errors in Figure 9.1.

Section 5 – Revised EAL description to match new NRC approved EAL scheme (AR 2101091). Editorial change to replace reference from NARC to LI-AA-102-1001 with regard to regulatory reporting.


UNIT SUPERVISOR
RECOGNIZE INCIDENT/
NOTIFY SHIFT MANAGER
SHIFT MANAGER
CLASSIFY EMERGENCY/
AUTHORIZE NOTIFICATIONS
ENS FTS LINE
NUCLEAR ALERT SYSTEM
UNUSUAL EVENT - PAGERS
ALERT OR HIGHER - PAGERS
OFF-HOURS - PAGERS AND AUTOMATED
TELEPHONE NOTIFICATION SERVICE
NRC
NH AND MA STATE
WARNING POINTS
PRIMARY
RESPONDERS
PRIMARY, SUBJECT
TO CALL, AND
SECONDARY
RESPONDERS
IMPLEMENT NRC
INCIDENT RESPONSE
PLAN AS NECESSARY
IMPLEMENT STATE AND
LOCAL EMERGENCY
RESPONSE PLANS
RESPOND PER
PROCEDURE
ACTIVATE EMERGENCY
FACILITIES

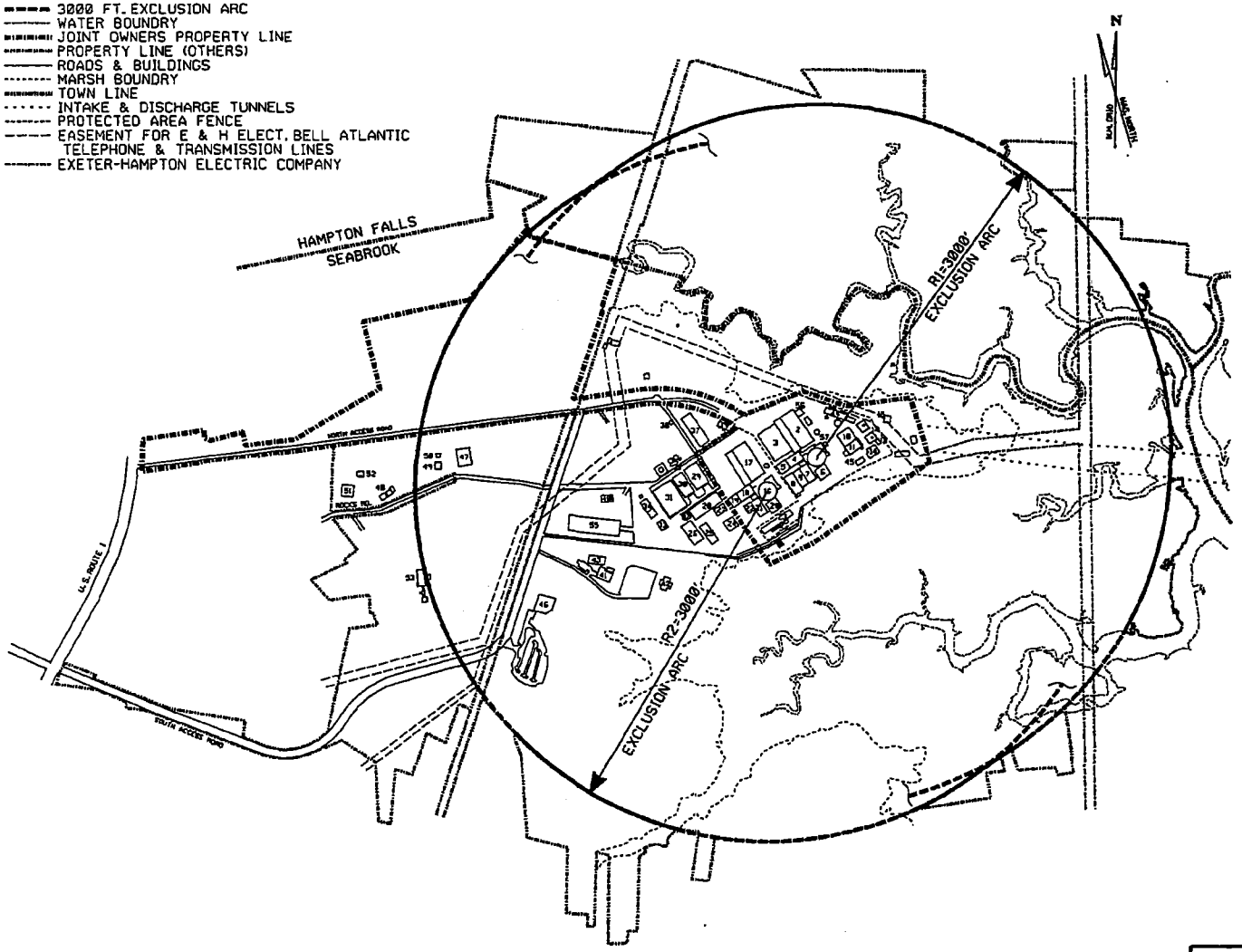


*Makes decision to notify the states and authorizes protective action recommendations

**Makes protective action recommendations to the Governor and coordinates implementation

LEGEND

- 3000 FT. EXCLUSION ARC
- WATER BOUNDRY
- JOINT OWNERS PROPERTY LINE
- PROPERTY LINE (OTHERS)
- ROADS & BUILDINGS
- MARSH BOUNDRY
- TOWN LINE
- INTAKE & DISCHARGE TUNNELS
- PROTECTED AREA FENCE
- EASEMENT FOR E & H ELECT. BELL ATLANTIC TELEPHONE & TRANSMISSION LINES
- EXETER-HAMPTON ELECTRIC COMPANY

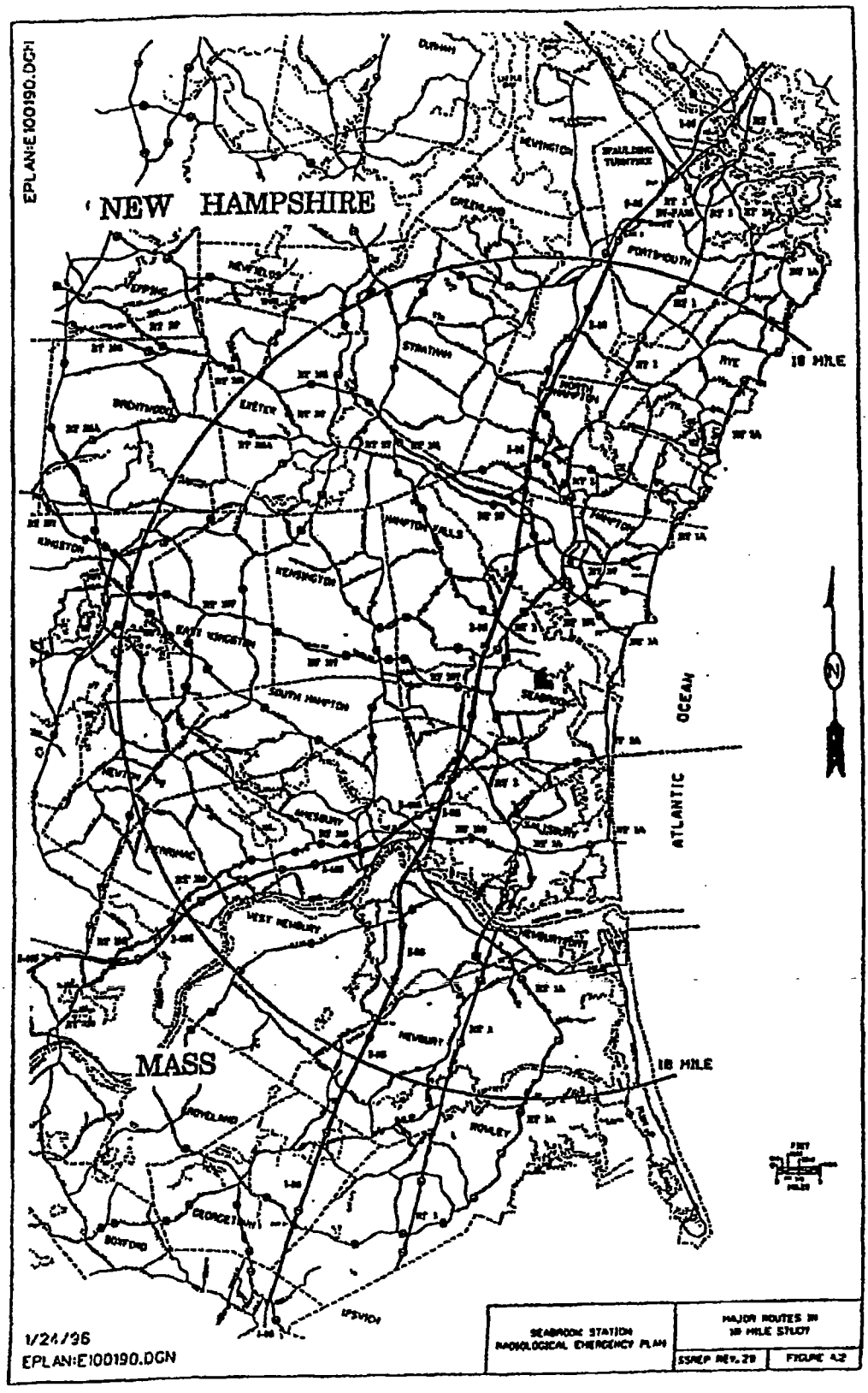


1. UNIT #1 CONTAINMENT BUILDING
2. UNIT #1 TURBINE BUILDING
3. ADMINISTRATION BUILDING
4. UNIT #1 CONTROL BUILDING
5. UNIT #1 DIESEL GENERATOR BUILDING
6. UNIT #1 FUEL STORAGE BUILDING
7. UNIT #1 PRIMARY AUX BUILDING
8. UNIT #1 WASTE PROCESSING BUILDING
9. UNIT #1 RAD. WASTE STORAGE TANK
10. CIRC. WATER PUMP HOUSE
11. SERVICE WATER PUMP HOUSE
12. DISCHARGE STRUCTURE
13. CALIBRATION BUILDING
14. CHLORINATION BUILDING
15. OMB
16. UNIT #2 CONTAINMENT BUILDING
17. UNIT #2 TURBINE BUILDING
18. UNIT #2 CONTROL BUILDING
19. UNIT #2 DIESEL GENERATOR BUILDING
20. UNIT #2 FUEL STORAGE BUILDING
21. UNIT #2 PRIMARY AUX. BUILDING
22. UNIT #2 RAD. WASTE STORAGE TANK
23. COOLING TOWER
24. SF-6 TEST FACILITY
25. TECHNICAL TRAINING CENTER
26. HI RISE
27. WELD TEST SHOP
28. FABRICATION FACILITY
29. WAREHOUSE #1
30. WAREHOUSE #2
31. WAREHOUSE #3
32. FIRE DEPT. / PTL TESING LAB.
33. SIREN MAINT. SHOP
34. EQUIPMENT MAINT. SHOP
35. FIRE PUMP HOUSE
36. DELETED
37. OPERATIONAL SUPPORT BUILDING
38. WPC TIME OFFICE
39. GUARD HOUSE
40. CARPENTRY SHOP
41. TRAINING CENTER (SIMULATOR BUILDING)
42. SCIENCE & NATURE CENTER
43. FITNESS CENTER
44. MAINTENANCE SUPPORT BUILDING & SHOP
45. RCA STORAGE FACILITY
46. GENERAL OFFICE BUILDING
47. PRODUCTION WAREHOUSE & CSA
48. PAINT SHOP
49. BLDG. "B"
50. BLDG. "D"
51. SHEET METAL SHOP
52. FURNITURE STORAGE
53. UNIT 2 EQUIP/ VLV STORAGE
54. SEPS DIESELS & COMPONENTS
55. DRY FUEL STORAGE FACILITY
56. CONDENSATE POLISHER BUILDING
57. ALTERNATE RP CHECK POINT BLDG

EPLAN:E010276.DGN

SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	SITE BOUNDARIES	
	SSREP REV. 56	FIGURE 4.1

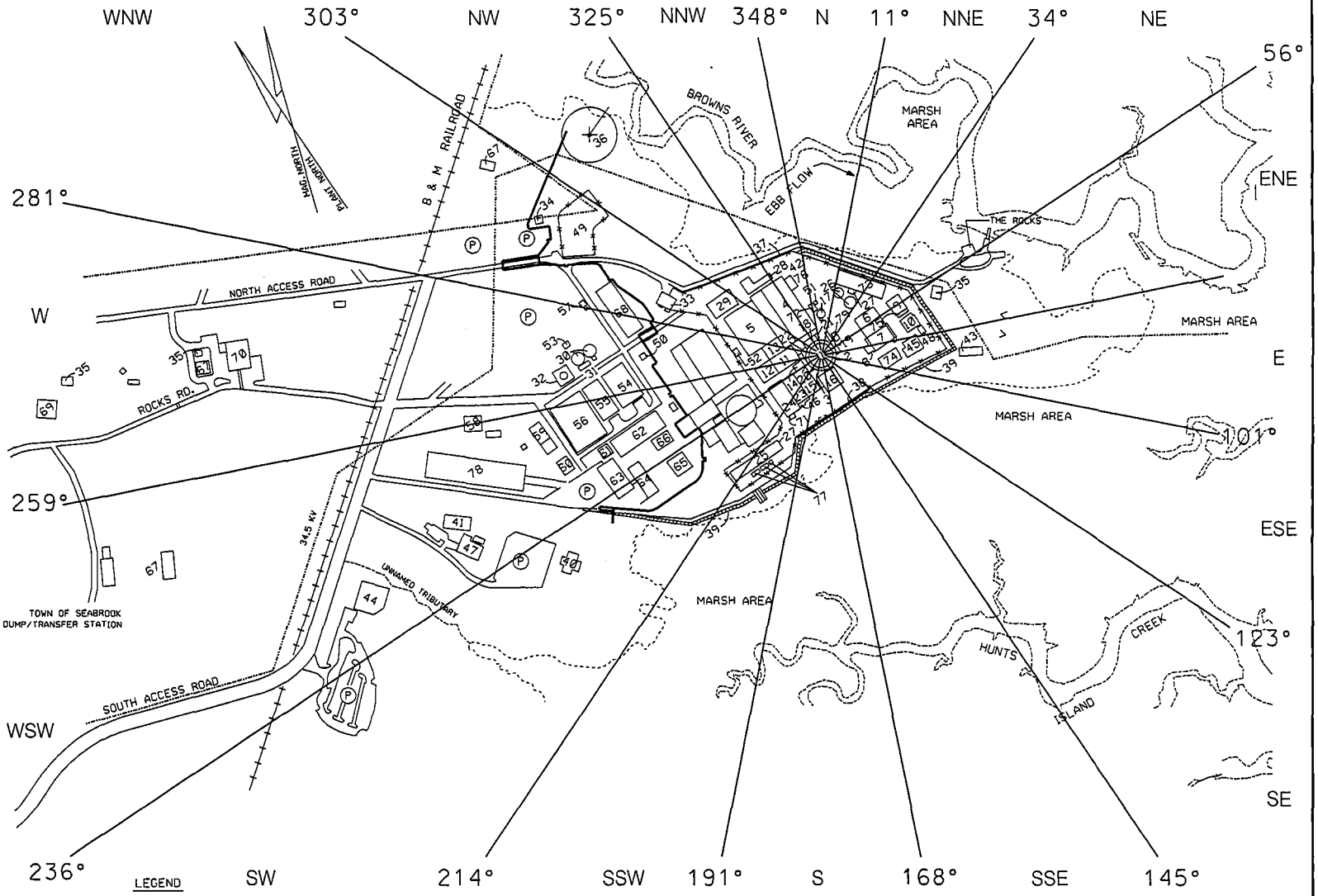
05/26/08


EPLAN:E100190.DGN
NEW HAMPSHIRE
MASS
ATLANTIC OCEAN
10 MILE
10 MILE
1/24/96
EPLAN:E100190.DGN
SEABROOK STATION
RADIOLOGICAL EMERGENCY PLAN
MAJOR ROUTES IN
10 MILE STUDY
SSREP REV. 29
FIGURE 4.2

PRINCIPLE STATION STRUCTURES

1. UNIT 1 CONTAINMENT STRUCTURE
2. CONTAINMENT ENCLOSURE AREA
3. CONTAINMENT ENCLOSURE VENTILATION AREA
4. TURBINE BUILDING AND HEATER BAY
5. ADMINISTRATION AND SERVICE BUILDING
6. CIRCULATING WATER PUMPHOUSE
7. SERVICE WATER PUMPHOUSE
8. ELECTRICAL CONTROL ROOM
9. INTAKE TRANSITION STRUCTURE
10. DISCHARGE TRANSITION STRUCTURE
11. CONTROL BUILDING
12. DIESEL GENERATOR BUILDING
13. NON-ESSENTIAL SWITCHGEAR ROOM
14. RHR SPRAY EQUIPMENT VAULT
15. PRIMARY AUXILIARY BUILDING
16. FUEL STORAGE BUILDING
17. CONDENSATE STORAGE TANK
18. EMERGENCY FEEDWATER PUMPHOUSE
19. STEAM & FEEDWATER PIPE CHASE (EAST)
20. STEAM & FEEDWATER PIPE CHASE (WEST)
21. PRE-ACTION VALVE BUILDING
22. PERSONNEL HATCH AREA
23. TANK FARM AREA
24. WASTE PROCESSING BUILDING
25. SERVICE WATER COOLING TOWER
26. DEMINERALIZED WATER STORAGE TANK
27. CONTROL BUILDING MAKE-UP AIR INTAKE
28. TRANSFORMER AREA
29. SWITCHING STATION (SUBSTATION)
30. FIRE PROTECTION TANKS
31. FIRE PUMP HOUSE
32. FUEL OIL STORAGE TANK
33. GUARD HOUSE
34. ABANDONED SEWAGE TREATMENT BUILDING
35. MISCELLANEOUS NON-OPERATIONAL BUILDINGS
36. METEORLOGICAL TOWER
37. RETAINING WALL
38. SEAWALL
39. RIPRAP
40. SCIENCE & NATURE CENTER
41. FITNESS CENTER
42. PERMANENT SECURITY FENCE
43. STAGING STORAGE FACILITY
44. GENERAL OFFICE BUILDING
45. CHLORINATION BUILDING
46. STEAM GENERATOR BLOWDOWN
47. OPS TRAINING CENTER
48. RADIATION CALIBRATION FACILITY
49. 345KV TERMINATION AREA
50. HYDROGEN STORAGE AREA
51. OIL/WATER SEPARATOR VAULT NO. 1
52. OIL/WATER SEPARATOR VAULT NO. 2
53. OIL/WATER SEPARATOR VAULT NO. 3
54. WAREHOUSE NO. 1/M&TE CALIBRATION FACILITY/CONFERENCE CENTER
55. WAREHOUSE NO. 2
56. WAREHOUSE NO. 3
57. EMPLOYEE ALLEGATION RESOLUTION OFFICE
58. LUMBER MILL FACILITY
59. EQUIPMENT MAINTENANCE FACILITY
60. SIREN MAINTENANCE FACILITY
61. FIRE PROTECTION FACILITY
62. FABRICATION FACILITY
63. HIGH RISE BUILDING
64. TECHNICAL TRAINING CENTER
65. SF6 REFURBISHMENT & TEST FACILITY
66. WELD TRAINING CENTER
67. UNIT 2 STORAGE BUILDINGS
68. OPERATIONAL SUPPORT BUILDING
69. OFFICE EQUIPMENT STORAGE BUILDING
70. PRODUCTION WAREHOUSE
71. ASPHALT BUILDING
72. LUBE OIL STORAGE BUILDING
73. MAINTENANCE FACILITY
74. RCA STORAGE FACILITY
75. GAS BOTTLE STORAGE FACILITY
76. CONDENSATE POLISHER FACILITY
77. SUPPLEMENTAL EMERGENCY POWER SYSTEM ENCLOSURES
78. DRY FUEL STORAGE FACILITY
79. ALTERNATE RP CHECK POINT

9/18/09 EPLAN:E010489.DGN



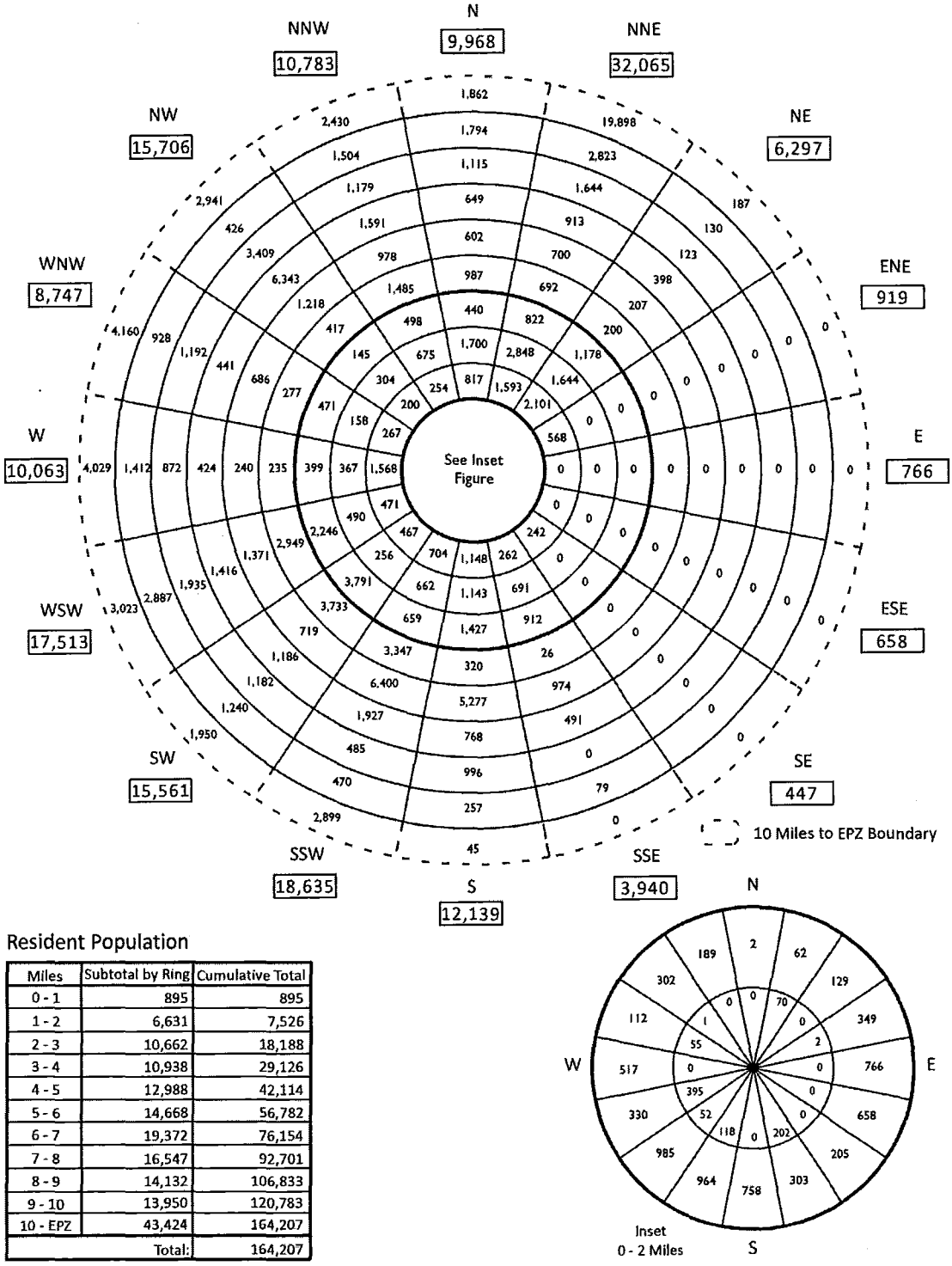
LEGEND
- WATER BOUNDARY
- ROADS & BUILDINGS
- MARSH BOUNDARY
- POWER LINES
- PERMANENT SECURITY FENCE
- (P) PARKING
- VEHICLE BARRIER SYSTEM (VBS)

SCALE
0 500
(IN FEET)

SEABROOK STATION
RADIOLOGICAL EMERGENCY PLAN

SITE LAYOUT

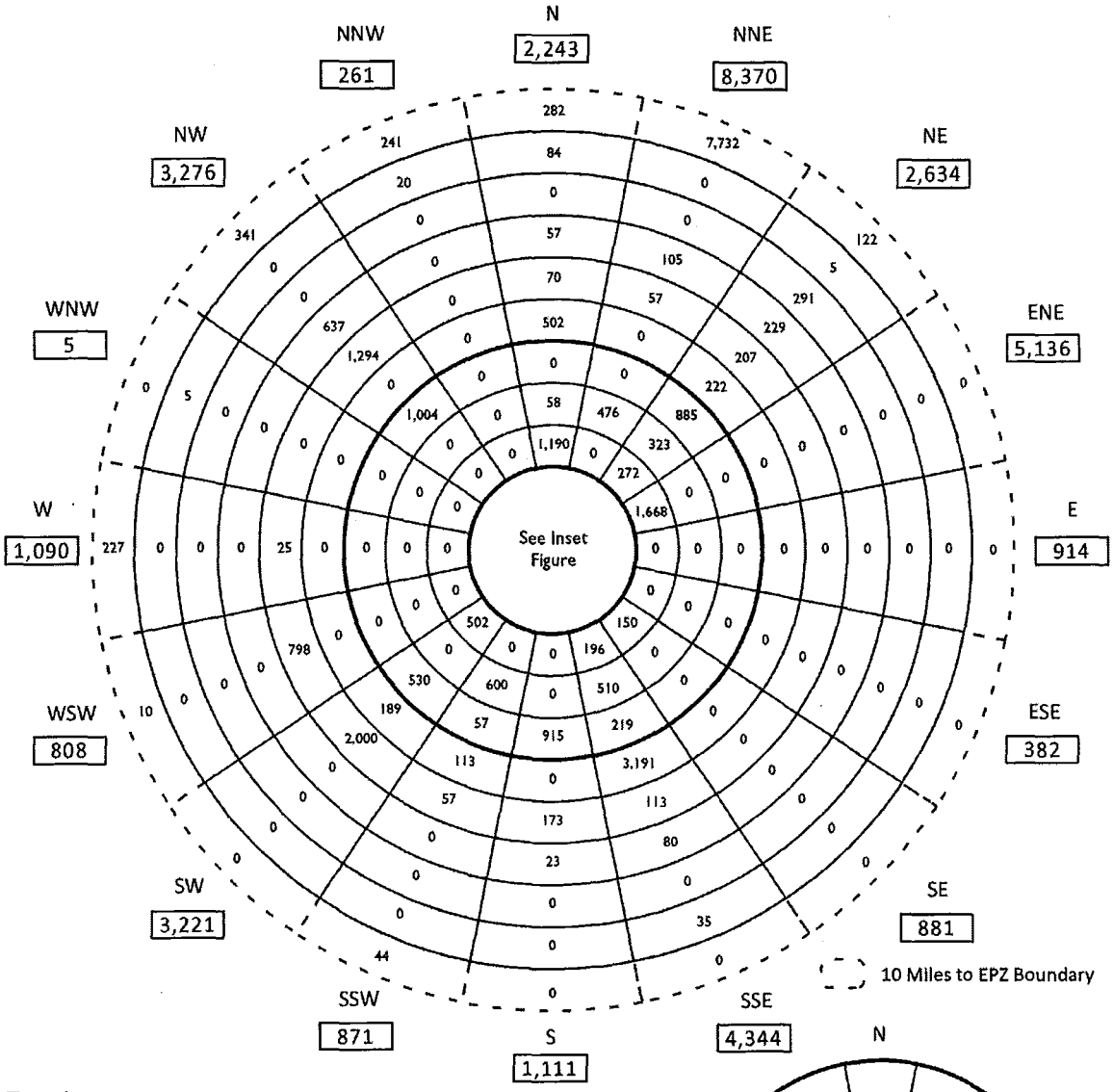
SSREP REV. 58 | FIGURE 4.3



Resident Population

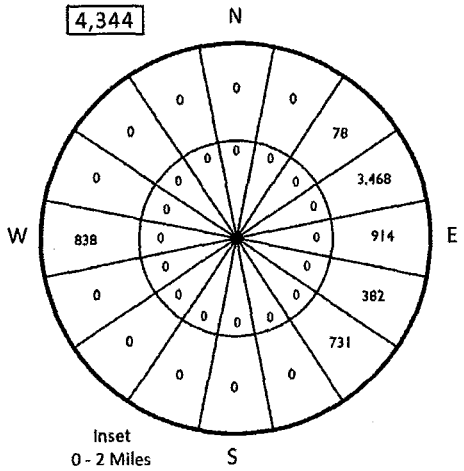
Miles	Subtotal by Ring	Cumulative Total
0 - 1	895	895
1 - 2	6,631	7,526
2 - 3	10,662	18,188
3 - 4	10,938	29,126
4 - 5	12,988	42,114
5 - 6	14,668	56,782
6 - 7	19,372	76,154
7 - 8	16,547	92,701
8 - 9	14,132	106,833
9 - 10	13,950	120,783
10 - EPZ	43,424	164,207
	Total:	164,207

SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	2010 RESIDENT POPULATION WITHIN A 0-10 MILE RADIUS OF SEABROOK STATION	
	SSREP REV. 66	FIGURE 4.4

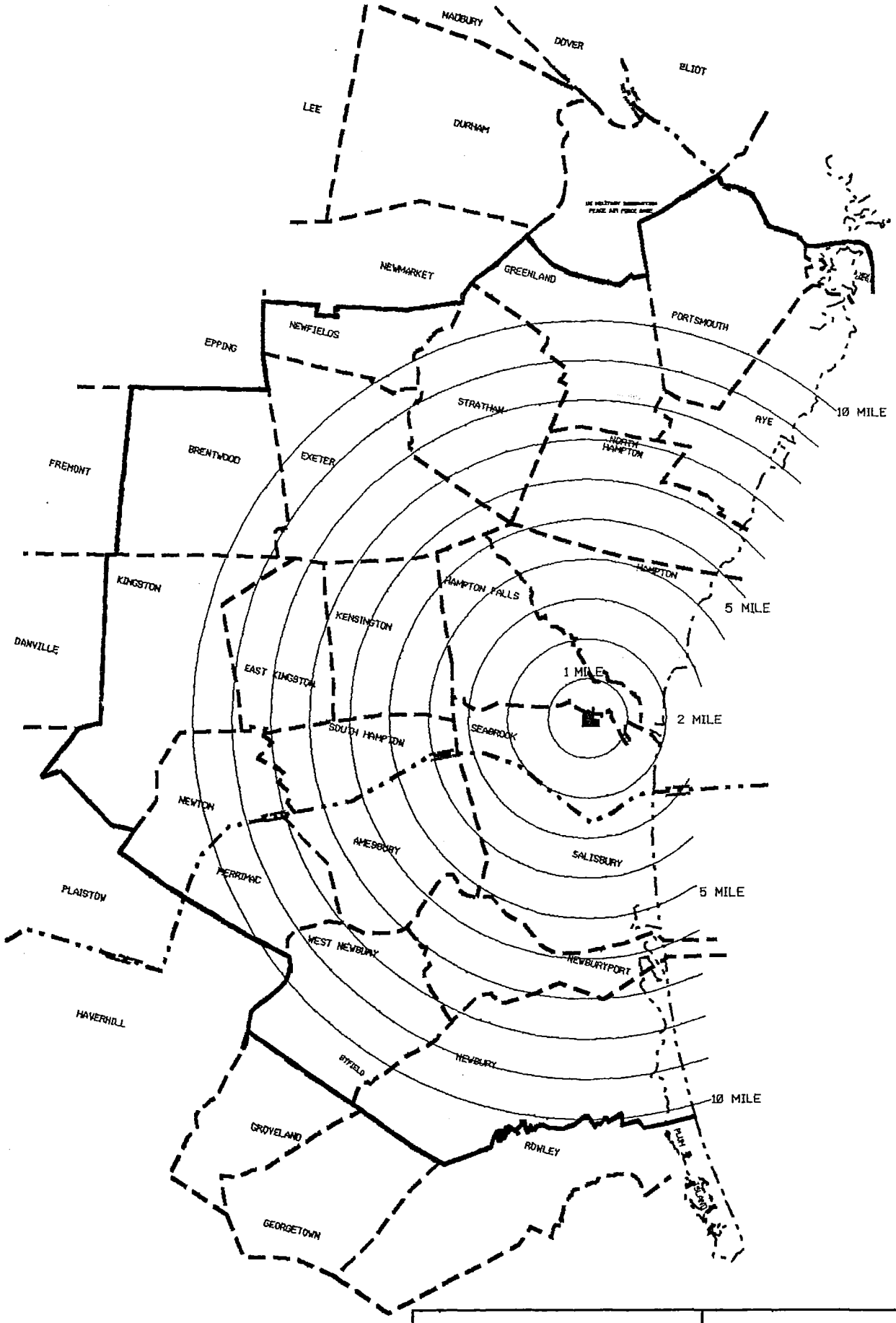


Transients

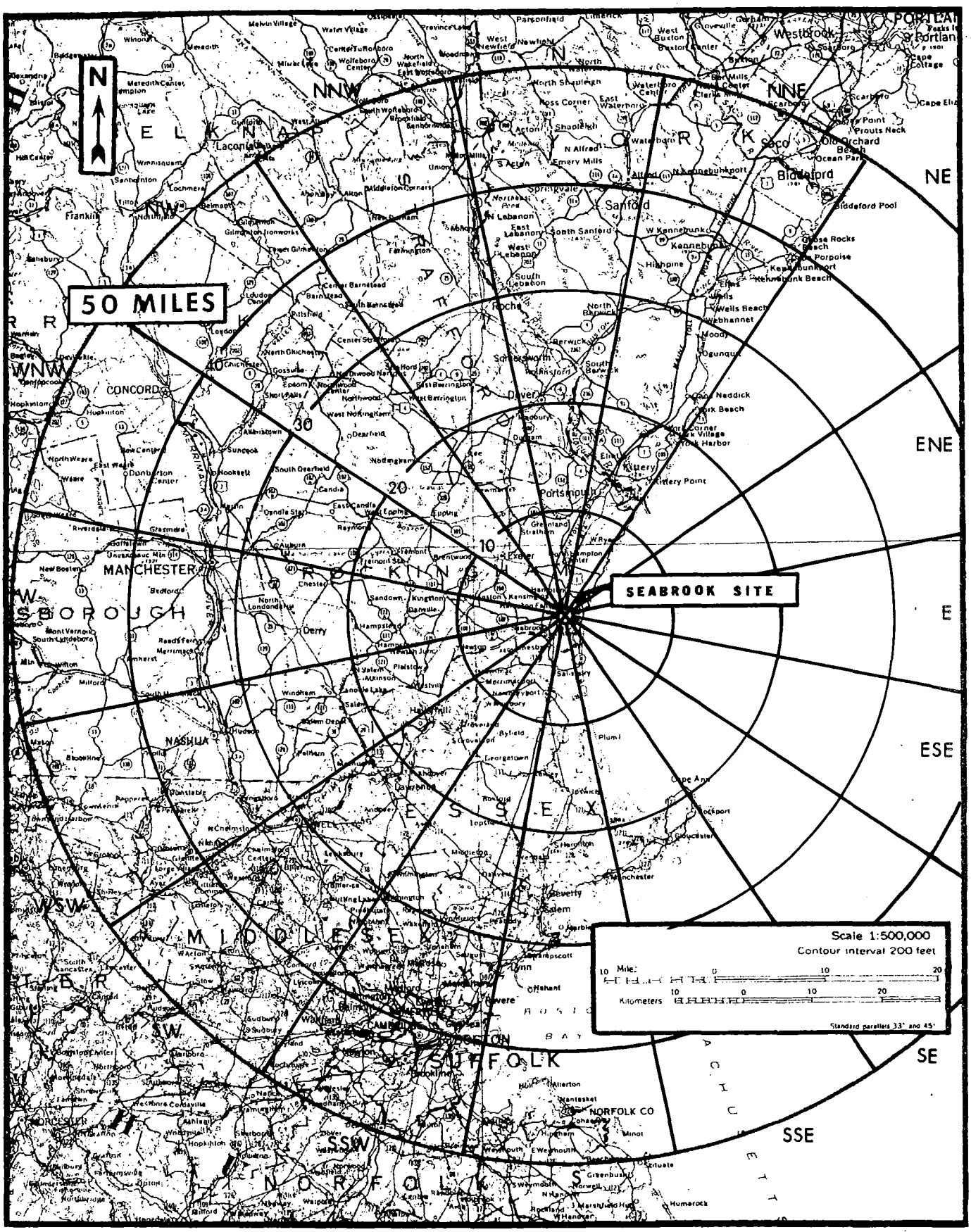
Miles	Subtotal by Ring	Cumulative Total
0 - 1	0	0
1 - 2	6,411	6,411
2 - 3	3,978	10,389
3 - 4	1,967	12,356
4 - 5	3,610	15,966
5 - 6	4,217	20,183
6 - 7	4,794	24,977
7 - 8	1,131	26,108
8 - 9	291	26,399
9 - 10	149	26,548
10 - EPZ	8,999	35,547
	Total:	35,547



SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	ESTIMATED PEAK TRANSIENT POPULATION (0-10) MILES	
	SSREP REV. 66	FIGURE 4.6



NEW HAMPSHIRE YANKEE SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	SEABROOK STATION "PLUME EXPOSURE" EMERGENCY PLANNING ZONE
	SSREP REV 5 | FIGURE 4.7



PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE SEABROOK STATION - UNITS 1 & 2 FINAL SAFETY ANALYSIS REPORT RADIOLOGICAL EMERGENCY PLAN	SEABROOK STATION "INGESTION EXPOSURE" EMERGENCY PLANNING ZONE (COUNTY DESIGNATIONS)
	FIGURE 4.8

FISSION PRODUCT BARRIER DEGRADATION MATRIX
Modes 1, 2, 3, and 4

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		UNUSUAL EVENT	
Category R- Abnormal Rad Levels/Radiological Effluent							
RG1	Release of gaseous radioactivity resulting in offsite dose > 1,000 mrem TEDE or 5,000 mrem thyroid CDE *Op. Modes: All*	**RS1**	Release of gaseous radioactivity resulting in offsite dose > 100 mrem TEDE or 500 mrem thyroid CDE *Op. Modes: All*	**RA1**	Release of gaseous or liquid radioactivity resulting in offsite dose > 10 mrem TEDE or 50 mrem thyroid CDE *Op. Modes: All*	**RU1**	Release of gaseous or liquid radioactivity > 2 times the ODCM limits for ≥ 60 minutes *Op. Modes: All*
RG2	Spent fuel pool level cannot be restored to at least 1.5 ft. (Level 3) for 60 minutes or longer. *Op. Modes: All*	**RS2**	Spent fuel pool level at 1.5 ft. (Level 3) *Op. Modes: All*	**RA2**	Significant lowering of water level above, or damage to, irradiated fuel. *Op. Modes: All*	**RU2**	UNPLANNED loss of water level above irradiated fuel *Op. Modes: All*
				RA3	Radiation levels that IMPEDE access to equipment necessary for normal plant operations, shutdown or cooldown. *Op. Modes: All*		
Category E - Events Related to ISFSI Malfunction							
						EU1	Damage to a loaded cask CONFINEMENT BOUNDARY *Op. Mode: All*
Category H - Hazards and Other Conditions Affecting Plant Safety							
		HS1	HOSTILE ACTION within the PROTECTED AREA. *Op. Modes: All*	**HA1**	HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes *Op. Modes: All*	**HU1**	Confirmed SECURITY CONDITION or threat. *Op. Modes: All*
						HU2	Seismic event greater than OBE levels. *Op. Modes: All*
						HU3	Hazardous event. *Op. Modes: All*
						HU4	FIRE potentially degrading the level of safety of the plant. *Op. Modes: All*
				HA5	Gaseous release impeding access to equipment necessary for normal plant operations, shutdown or cooldown *Op. Modes: All*		
		HS6	Inability to control a key safety function from outside the Control Room *Op. Modes: All*	**HA6**	Control Room evacuation resulting in transfer of plant control to alternate locations *Op. Modes: All*		
HG7	Other conditions exist which in the judgment of the STED/SED warrant declaration of a General Emergency *Op. Modes: All*	**HS7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of a Site Area Emergency *Op. Modes: All*	**HA7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of an Alert *Op. Modes: All*	**HU7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of an Unusual Event *Op. Modes: All*
Category M - System Malfunction							
MG1	Prolonged loss of all offsite and all onsite AC power to emergency buses **AND** • Restoration of at least one AC emergency bus in less than 4 hours is not likely. **OR** • Core Cooling (C) CSF RED entry conditions met *Op. Modes: 1, 2, 3, 4*	**MS1**	Loss of all offsite and all onsite AC power to emergency buses for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*	**MA1**	Loss of all but one AC power source to emergency buses for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*	**MU1**	Loss of all offsite AC power capability to emergency buses for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*
				MA2	UNPLANNED loss of Control Room indications for 15 minutes or longer with a significant transient in progress. *Op. Modes: 1, 2, 3, 4*	**MU2**	UNPLANNED loss of Control Room indications for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*
						MU3	Reactor coolant activity greater than Technical Specification allowable limits *Op. Modes: 1, 2, 3, 4*
						MU4	RCS leakage for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*
		MS5	Inability to shutdown the reactor causing a challenge to core cooling or RCS heat removal *Op. Modes: 1*	**MA5**	Automatic or manual trip fails to shutdown the reactor, and subsequent manual actions taken at the Main Control Board are not successful in shutting down the reactor *Op. Modes: 1*	**MU5**	Automatic or manual trip fails to shutdown the reactor *Op. Modes: 1*
						MU6	Loss of all onsite or offsite communications capabilities *Op. Modes: 1, 2, 3, 4*
						MU7	Failure to isolate containment or loss of containment pressure control *Op Modes: 1, 2, 3, 4*
MG8	Loss of all AC and Vital DC power sources for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*	**MS8**	Loss of all Vital DC power for 15 minutes or longer *Op. Modes: 1, 2, 3, 4*				
				MA9	Hazardous event affecting a SAFETY SYSTEM needed for the current *Op. Modes: 1, 2, 3, 4*		

Modes 1, 2, 3 and 4

EMERGENCY INITIATING CONDITION MATRIX
Modes 5, 6, and Defueled

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		UNUSUAL EVENT	
Category R - Abnormal Rad Levels/Radiological Effluent							
RG1	Release of gaseous radioactivity resulting in offsite dose > 1,000 mrem TEDE or 5,000 mrem thyroid CDE *Op. Modes: All*	**RS1**	Release of gaseous radioactivity resulting in offsite dose > 100 mrem TEDE or 500 mrem thyroid CDE *Op. Modes: All*	**RA1**	Release of gaseous or liquid radioactivity resulting in offsite dose > 10 mrem TEDE or 50 mrem thyroid CDE *Op. Modes: All*	**RU1**	Release of gaseous or liquid radioactivity > 2 times the ODCM limits for ≥ 60 minutes *Op. Modes: All*
RG2	Spent fuel pool level cannot be restored to at least 1.5 ft. (Level 3) for 60 minutes or longer. *Op. Modes: All*	**RS2**	Spent fuel pool level at 1.5 ft. (Level 3) *Op. Modes: All*	**RA2**	Significant lowering of water level above, or damage to, irradiated fuel. *Op. Modes: All*	**RU2**	UNPLANNED loss of water level above irradiated fuel *Op. Modes: All*
				RA3	Radiation levels that IMPEDE access to equipment necessary for normal plant operations, shutdown or cooldown. *Op. Modes: All*		
Category E - Events Related to ISFSI Malfunction							
						EU1	Damage to a loaded cask CONFINEMENT BOUNDARY *Op. Mode: All*
Category H - Hazards and Other Conditions Affecting Plant Safety							
		HS1	HOSTILE ACTION within the PROTECTED AREA *Op. Modes: All*	**HA1**	HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes *Op. Modes: All*	**HU1**	Confirmed SECURITY CONDITION or threat *Op. Modes: All*
						HU2	Seismic event greater than OBE levels. *Op. Modes: All*
						HU3	Hazardous event. *Op. Modes: All*
						HU4	FIRE potentially degrading the level of safety of the plant. *Op. Modes: All*
				HA5	Gaseous release impeding access to equipment necessary for normal plant operations, shutdown or cooldown *Op. Modes: All*		
		HS6	Inability to control a key safety function from outside the Control Room *Op. Modes: All*	**HA6**	Control Room evacuation resulting in transfer of plant control to alternate locations *Op. Modes: All*		
HG7	Other conditions exist which in the judgment of the STED/SED warrant declaration of a General Emergency *Op. Modes: All*	**HS7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of a Site Area Emergency *Op. Modes: All*	**HA7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of an Alert *Op. Modes: All*	**HU7**	Other conditions exist which in the judgment of the STED/SED warrant declaration of an Unusual Event *Op. Modes: All*
Category C - Cold Shutdown/Refueling System Malfunction							
CG1	Loss of reactor vessel/RCS inventory affecting fuel clad integrity with containment challenged *Op. Modes: 5, 6*	**CS1**	Loss of reactor vessel/RCS inventory affecting core decay heat removal capability *Op. Modes: 5, 6*	**CA1**	Loss of reactor vessel/RCS inventory *Op. Modes: 5, 6*	**CU1**	UNPLANNED loss of reactor vessel/RCS inventory for 15 minutes or longer *Op. Modes: 5, 6*
				CA2	Loss of all offsite and all onsite AC power to emergency buses for 15 minutes or longer *Op. Modes: 5, 6, Defueled*	**CU2**	Loss of all but one AC power source to emergency buses for 15 minutes or longer *Op. Modes: 5, 6, Defueled*
				CA3	Inability to maintain the plant in cold shutdown *Op. Modes: 5, 6*	**CU3**	UNPLANNED increase in RCS temperature. **OR** Loss of ALL RCS temperature and reactor vessel/RCS level indication for 15 minutes or longer *Op. Modes: 5, 6*
						CU4	Loss of Vital DC power for 15 minutes or longer *Op. Modes: 5, 6*
						CU5	Loss of all onsite or offsite communications capabilities *Op. Modes: 5, 6, Defueled*
				CA6	Hazardous event affecting a SAFETY SYSTEM needed for the current operating mode *Op. Modes: 5, 6*		

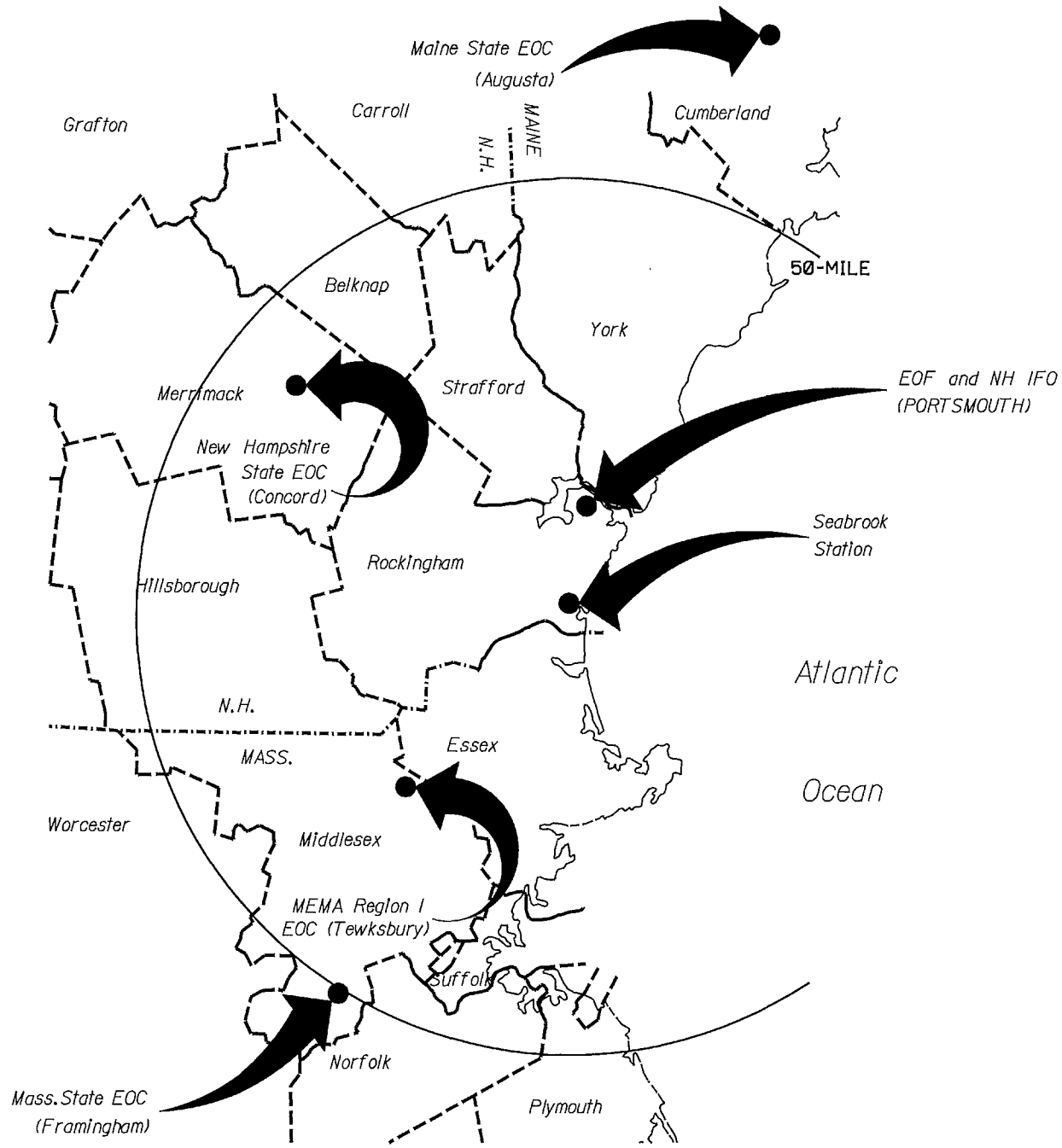
Modes 5, 6, and Defueled

FISSION PRODUCT BARRIER DEGRADATION MATRIX
Modes 1, 2, 3, and 4

	Fuel Clad Barrier		Reactor Coolant System Barrier		Containment Barrier	
Sub-Category	**Loss**	**Potential Loss**	**Loss**	**Potential Loss**	**Loss**	**Potential Loss**
1. CSF Status	Core Cooling (C) RED entry conditions met. (Note 1)	Core Cooling (C) ORANGE entry conditions met **OR** Heat Sink (H) RED entry conditions met. (Note 1)		RCS Integrity (P) RED entry conditions met with RCS press > 300 psig. **OR** Heat Sink (H) RED entry conditions met. (Note 1)		Core Cooling (C) RED entry conditions met for 15 minutes or longer OR Containment (Z) CSF – RED entry conditions met. (Note 1)
2. RCS Activity	RCS activity > 300 uCi/gm Dose Equivalent I-131 (as determined per Procedure CS0925.01, Reactor Coolant Post Accident Sampling)					
3. RCS Leakage			An automatic or manual SI actuation is required by EITHER of the following: 1. UNISOLABLE RCS leakage OR 2. SG tube RUPTURE	Operation of a second charging pump in the normal charging mode is required by EITHER of the following: 1. UNISOLABLE RCS leakage OR 2. SG tube leakage.	Indications of RCS leakage outside of containment.	
4. S/G Rupture or Fault					A leaking or RUPTURED SG is FAULTED outside of containment.	
5. Containment Integrity					Containment isolation is required AND EITHER of the following: 1. Containment integrity has been lost based on STED/SED judgment. OR 2. UNISOLABLE pathway from the containment to the environment exists.	Containment H2 concentration ≥ 6% OR 1. Containment pressure > 18 psig AND 2. Less than one full train of Containment Building Spray (CBS) is operating per design for 15 minutes or longer
6. Containment Radiation Monitor	Post-LOCA Radiation Monitors RM-6576A-1 or RM-6576B-1 ≥ 95 R/hr		Post-LOCA Radiation Monitors RM-6576A-1 or RM-6576B-1 ≥ 16 R/hr			Post-LOCA Radiation Monitors RM-6576A-1 or RM-6576B-1 ≥ 1,305 R/hr
7. STED/SED Judgment	Any condition in the opinion of the STED/SED that indicates a Loss of the Fuel Clad Barrier.	Any condition in the opinion of the STED/SED that indicates a Potential Loss of the Fuel Clad Barrier.	Any condition in the opinion of the STED/SED that indicates a Loss of the RCS Barrier.	Any condition in the opinion of the STED/SED that indicates a Potential Loss of the RCS Barrier.	Any condition in the opinion of the STED/SED that indicates a Loss of the Containment Barrier.	Any condition in the opinion of the STED/SED that indicates a Potential Loss of the Containment Barrier.

Barrier Status		**General Emergency** **FG1** - Loss of ANY Two Barriers AND Loss or Potential Loss of Third Barrier				**Site Area Emergency** **FS1** - Loss or Potential Loss of ANY Two Barriers											**Alert** **FA1** - ANY Loss or Potential Loss of EITHER Fuel Clad or RCS Barriers			
Fuel Clad Loss	Enter ✓➜																			
Fuel Clad Potential Loss	Enter ✓➜																			
RCS Loss	Enter ✓➜																			
RCS Potential Loss	Enter ✓➜																			
Containment Loss	Enter ✓➜																			
Containment Potential Loss	Enter ✓➜																			
Emergency Classification ➜		GE	GE	GE	GE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	SAE	ALERT	ALERT	ALERT	ALERT

NOTE 1: Refer to ER 1.1, Section 1.1, Discussion concerning the proper use of CSFSTs as EALs



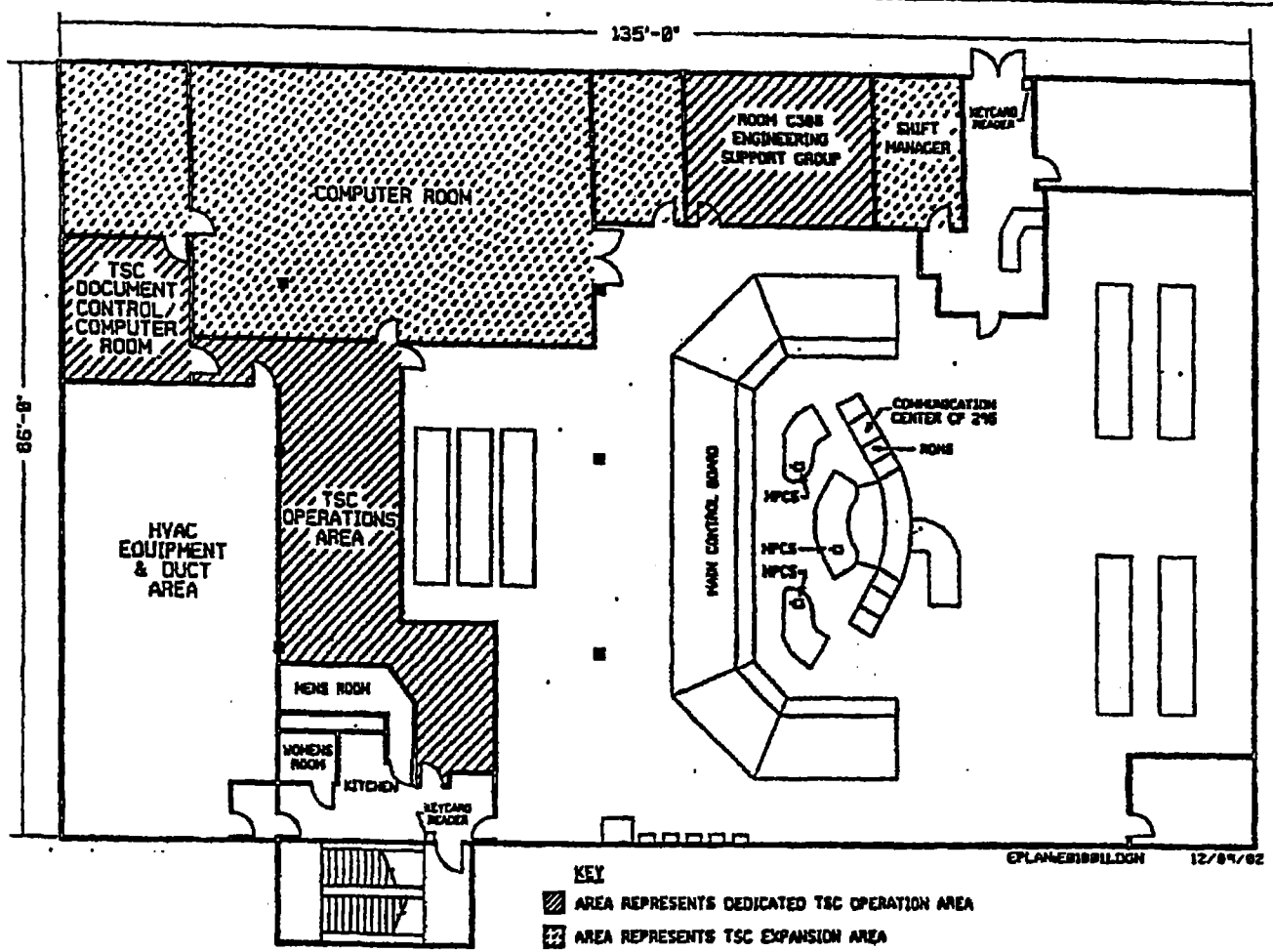
Note: Areas designated by County Title

EPLAN:E010163.DGN

SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	LOCATION OF EMERGENCY OPERATION CENTERS AROUND THE SEABROOK STATION SITE	
	SSREP REV. 57	FIGURE 6.1

EPLAN:E010011.DGN

7/25/01



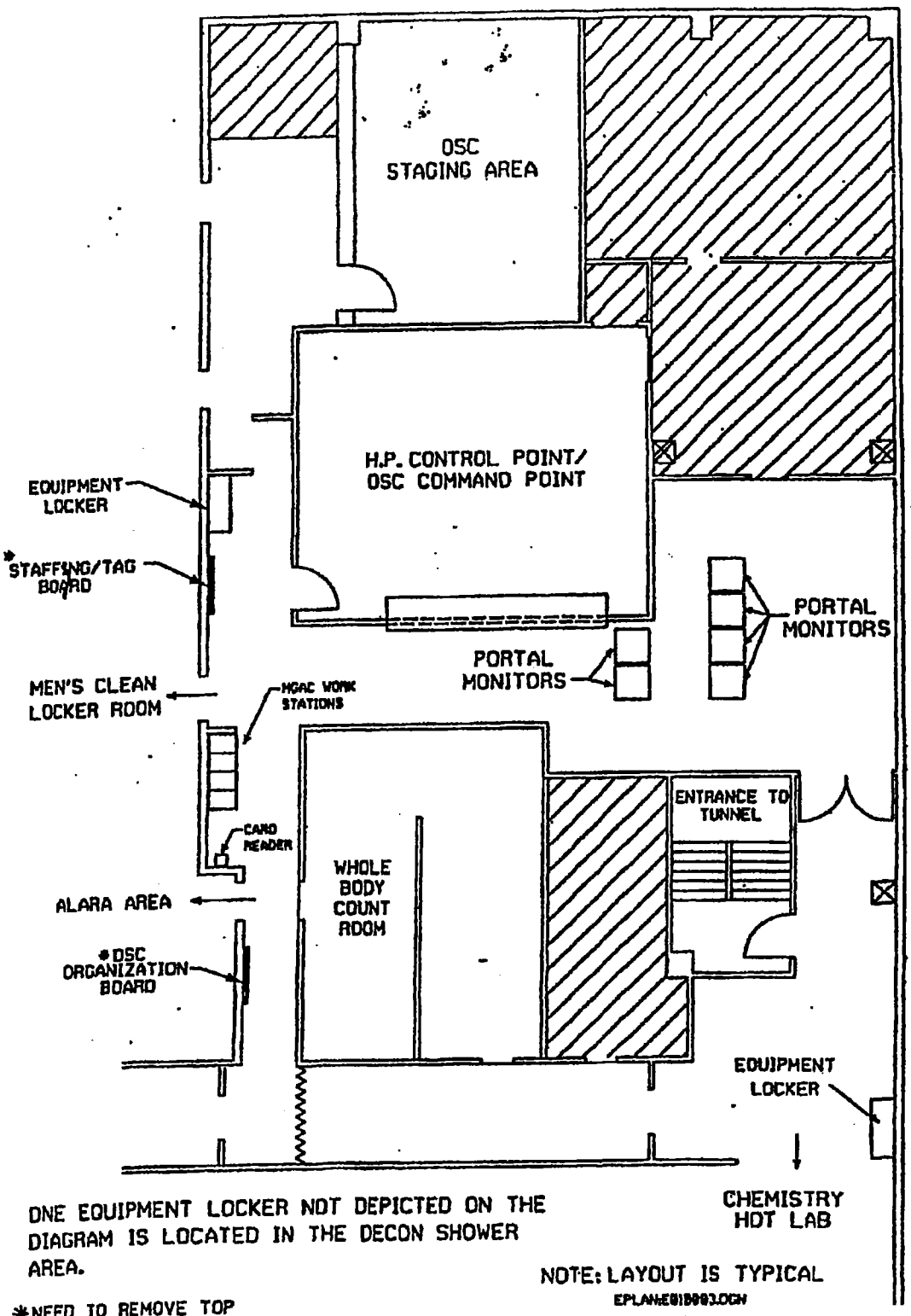
KEY

AREA REPRESENTS DEDICATED TSC OPERATION AREA

AREA REPRESENTS TSC EXPANSION AREA

SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	RELATIVE LOCATION OF TECHNICAL SUPPORT WITHIN THE 75' ELEVATION LEVEL OF THE CONTROL BUILDING
	SSREP REV. 42 FIGURE 6.2

11 X 17



ONE EQUIPMENT LOCKER NOT DEPICTED ON THE DIAGRAM IS LOCATED IN THE DECON SHOWER AREA.

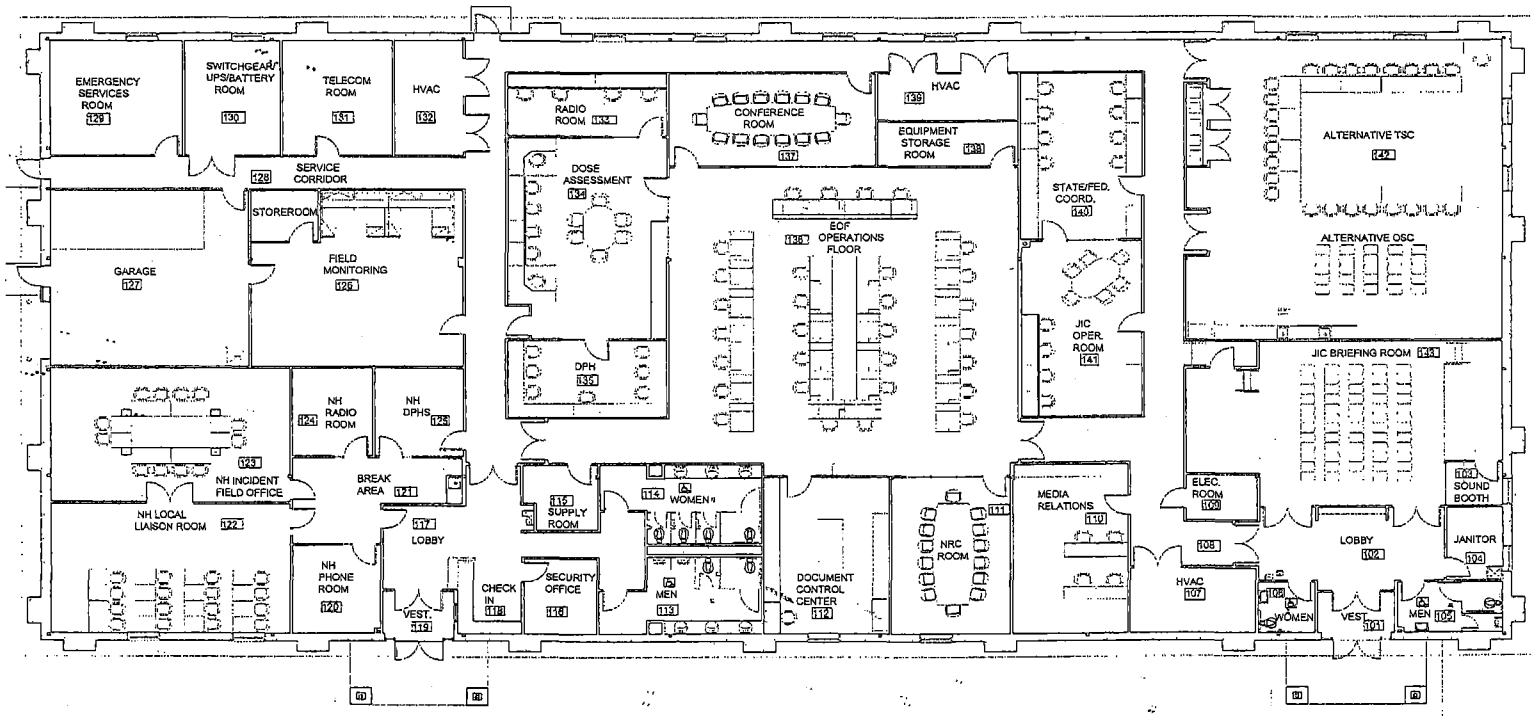
NOTE: LAYOUT IS TYPICAL

EPLAN\E010003.DGN

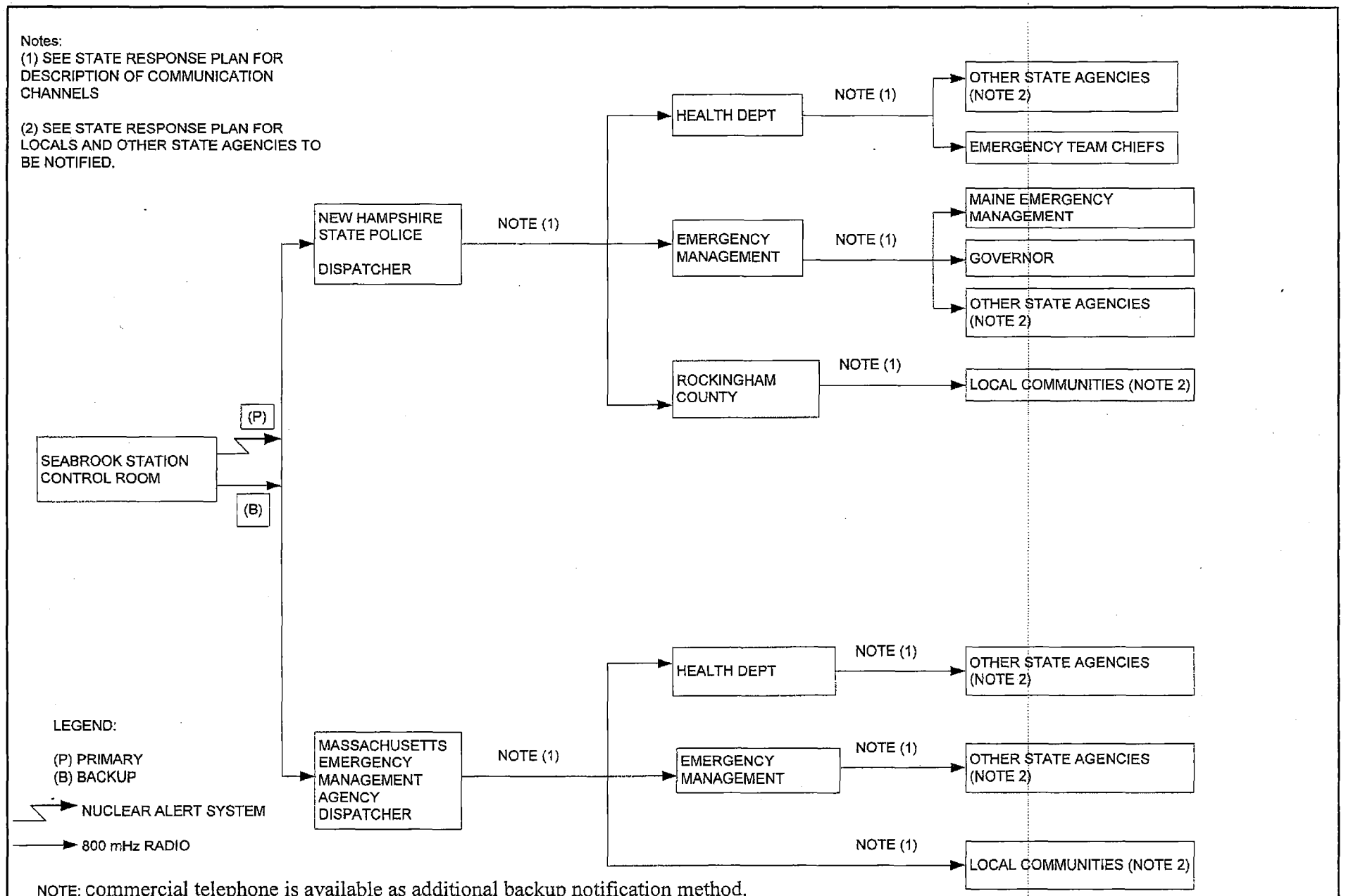
*NEED TO REMOVE TOP COVER BOARD

EPLAN\E010003.DGN
5/4/04

SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	OPERATIONAL SUPPORT CENTER LAYOUT	
	SSREP REV. 47	FIGURE 6.5



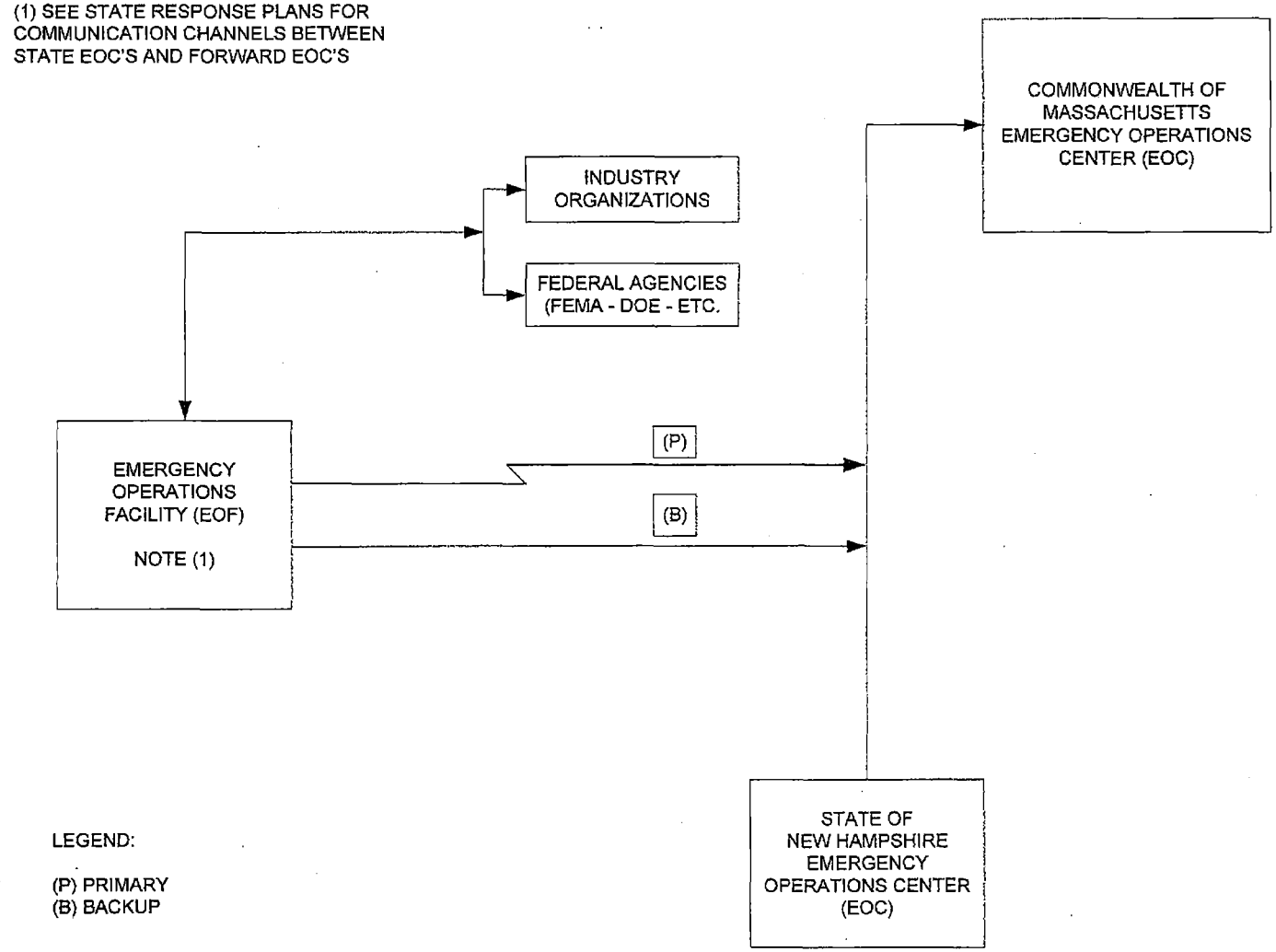
Seabrook Station Radiological Emergency Plan	EOF LAYOUT	
	SSREP Rev. 64	Figure 6.6



NOTE: commercial telephone is available as additional backup notification method.

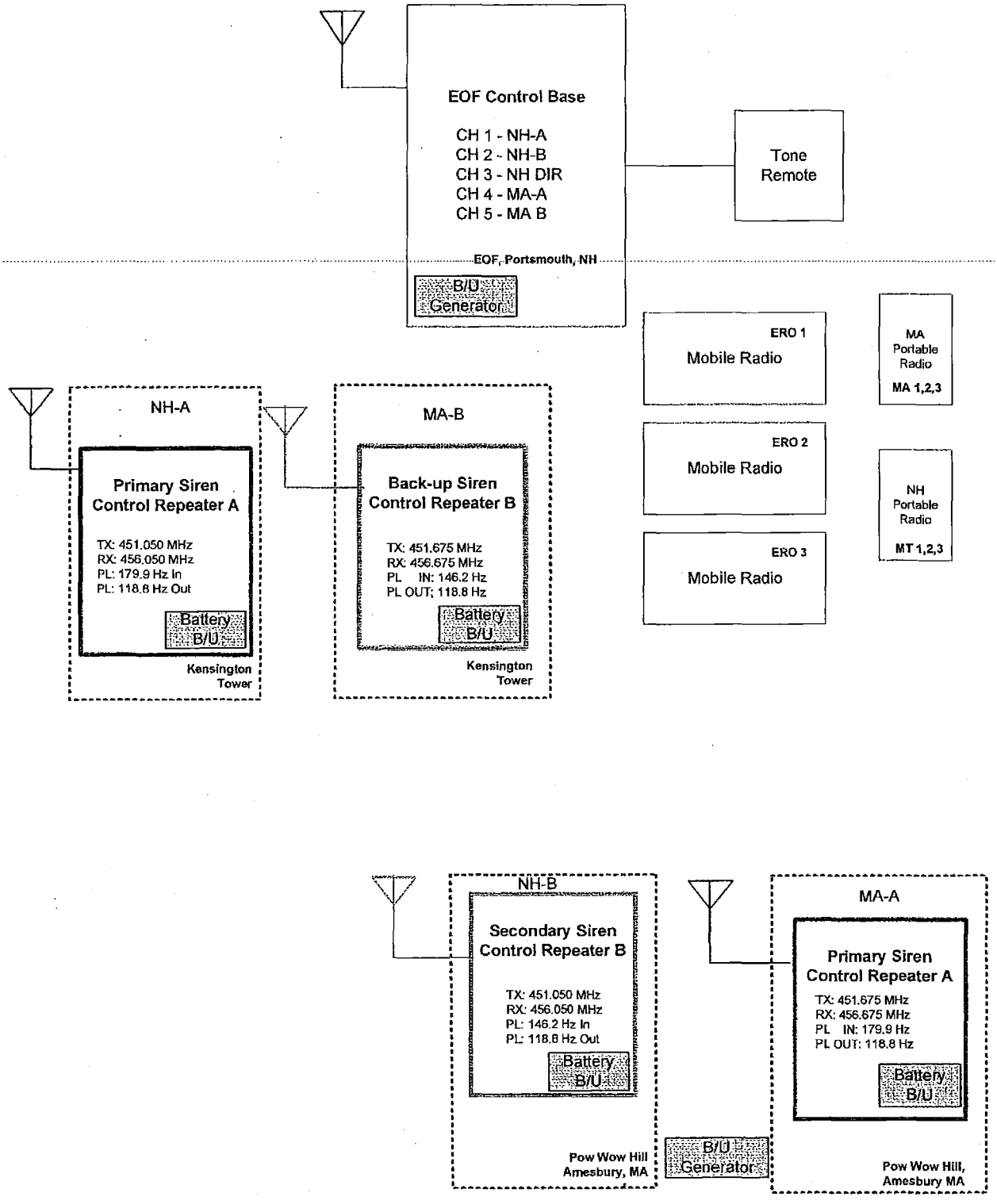
Seabrook Station Radiological Emergency Plan	EMERGENCY NOTIFICATION	
	SSREP Rev. 64	Figure 7.1

Notes:
(1) SEE STATE RESPONSE PLANS FOR COMMUNICATION CHANNELS BETWEEN STATE EOC'S AND FORWARD EOC'S

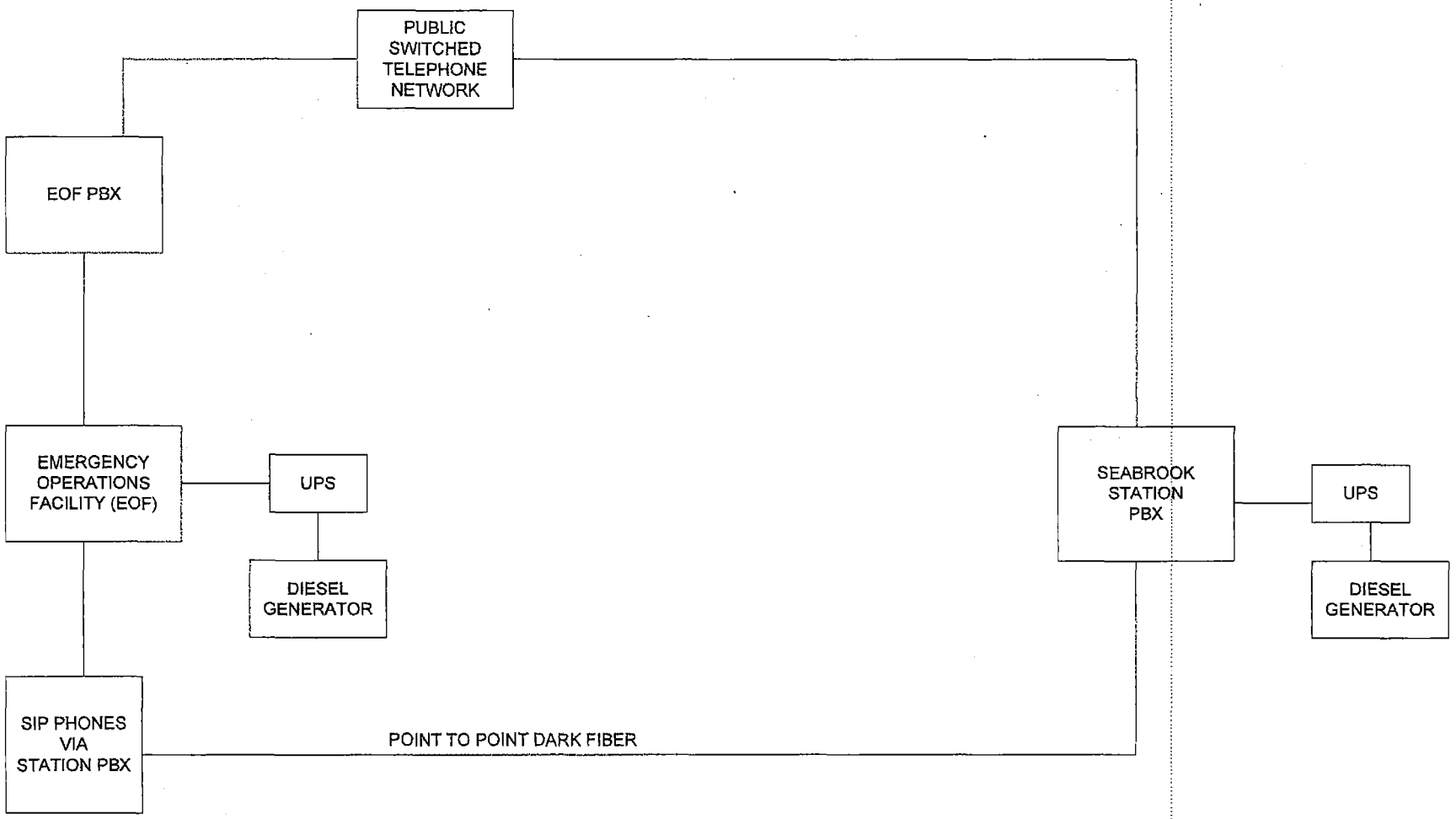


NOTE: commercial telephone is available as additional backup notification method.

Seabrook Station Radiological Emergency Plan	COORDINATION CHANNELS WITH STATES	
	SSREP Rev. 64	Figure 7.2

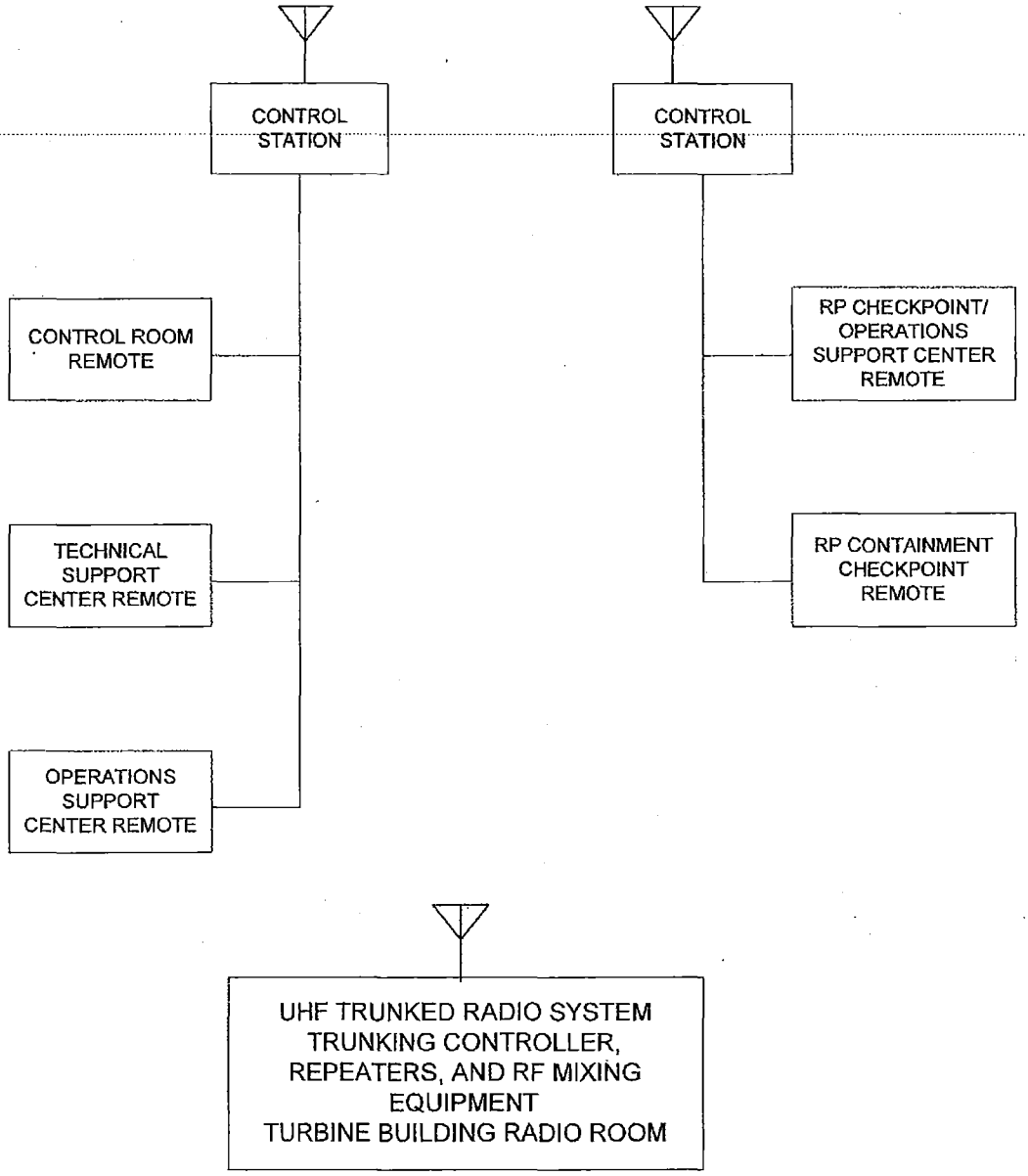


Seabrook Station Radiological Emergency Plan	Offsite Monitoring Team Radio Communications	
	SSREP Rev 64	Figure 7.3

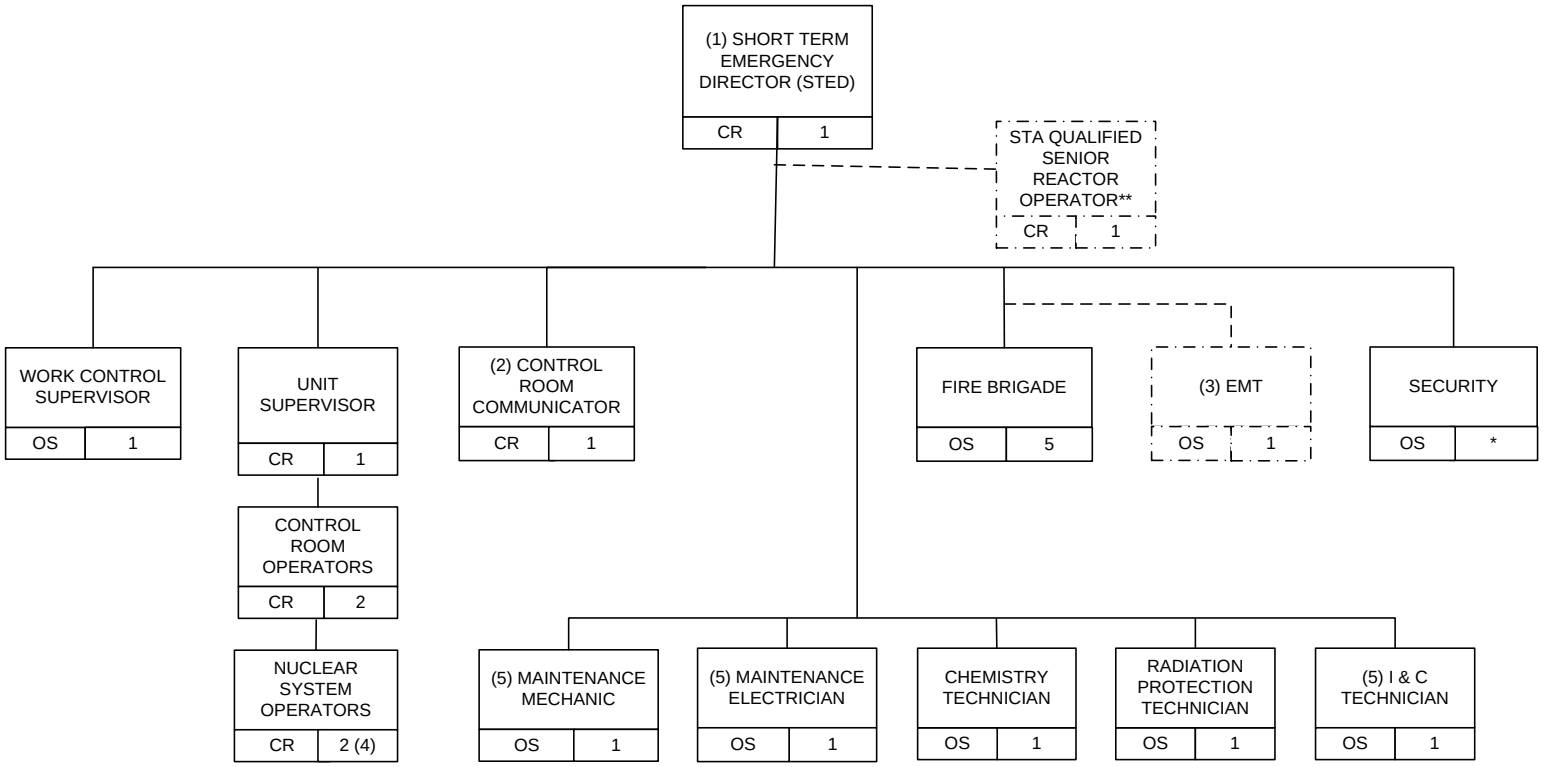


Seabrook Station Radiological Emergency Plan	TELEPHONE COMMUNICATION SYSTEMS OVERVIEW	
	SSREP Rev. 64	Figure 7.4

UHF RADIO SYSTEM



Seabrook Station Radiological Emergency Plan	UHF Radio Communication Systems Overview	
	SSREP Rev 64	Figure 7.5

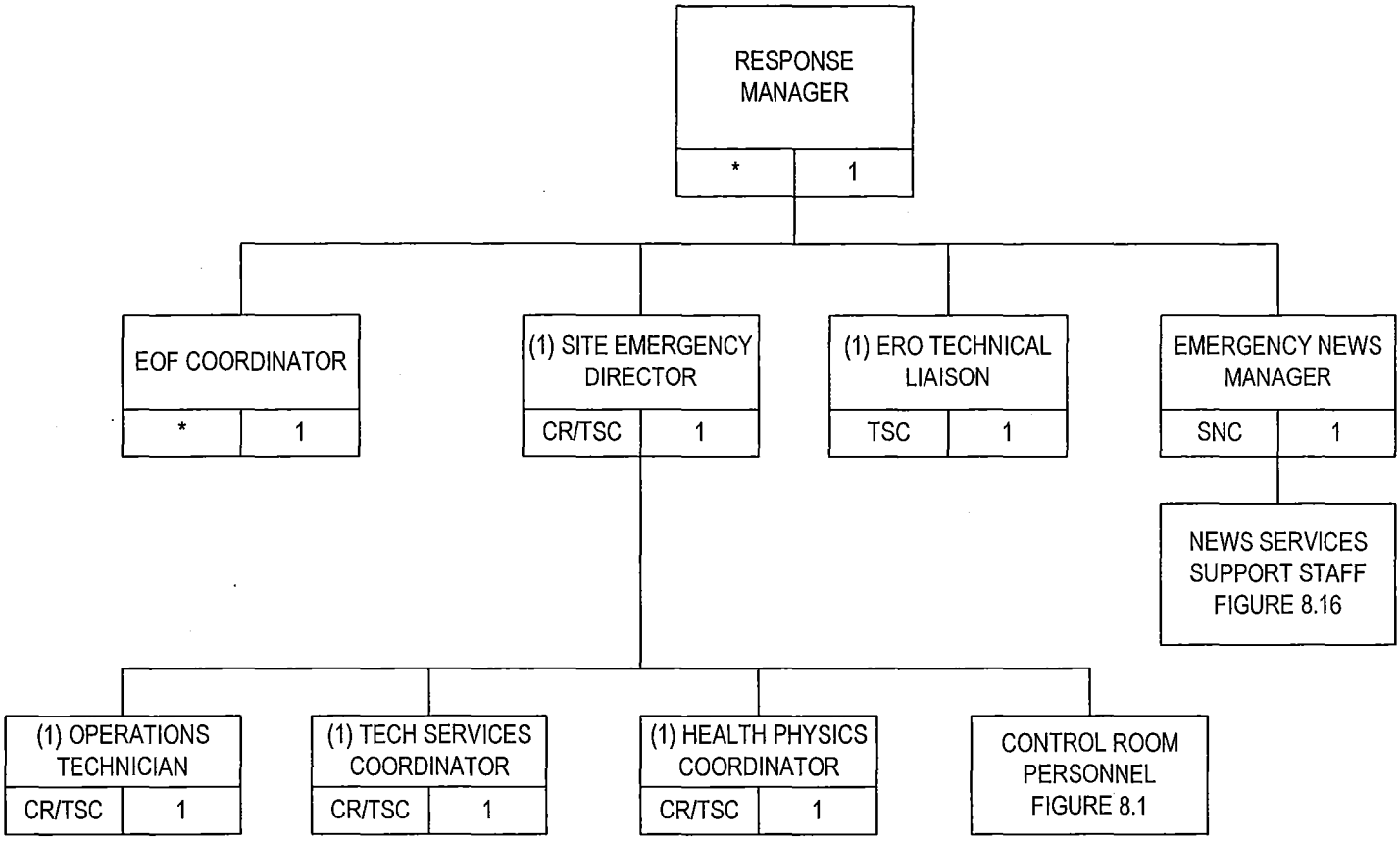


(1) Shift Manager or Unit Supervisor
(2) Fire Brigade Leader or Work Control Supervisor
(3) EMT may be staffed by a Fire Brigade Member
(4) Per Technical Specifications and the OPMM
(5) as available; not included in minimum staffing per Figure 8.15

CR - CONTROL ROOM
OS - ON-SITE
* - STAFFING PER SECURITY PLAN
** - IF THE STED IS NOT STA QUALIFIED

NOTE: On-shift staffing analysis shows that the on-shift ERO is not assigned responsibilities that would prevent the timely performance of its assigned functions as specified in the SSREP.

SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	ON-SHIFT EMERGENCY RESPONSE ORGANIZATION	
	SSREP Rev. 70	Figure 8.1



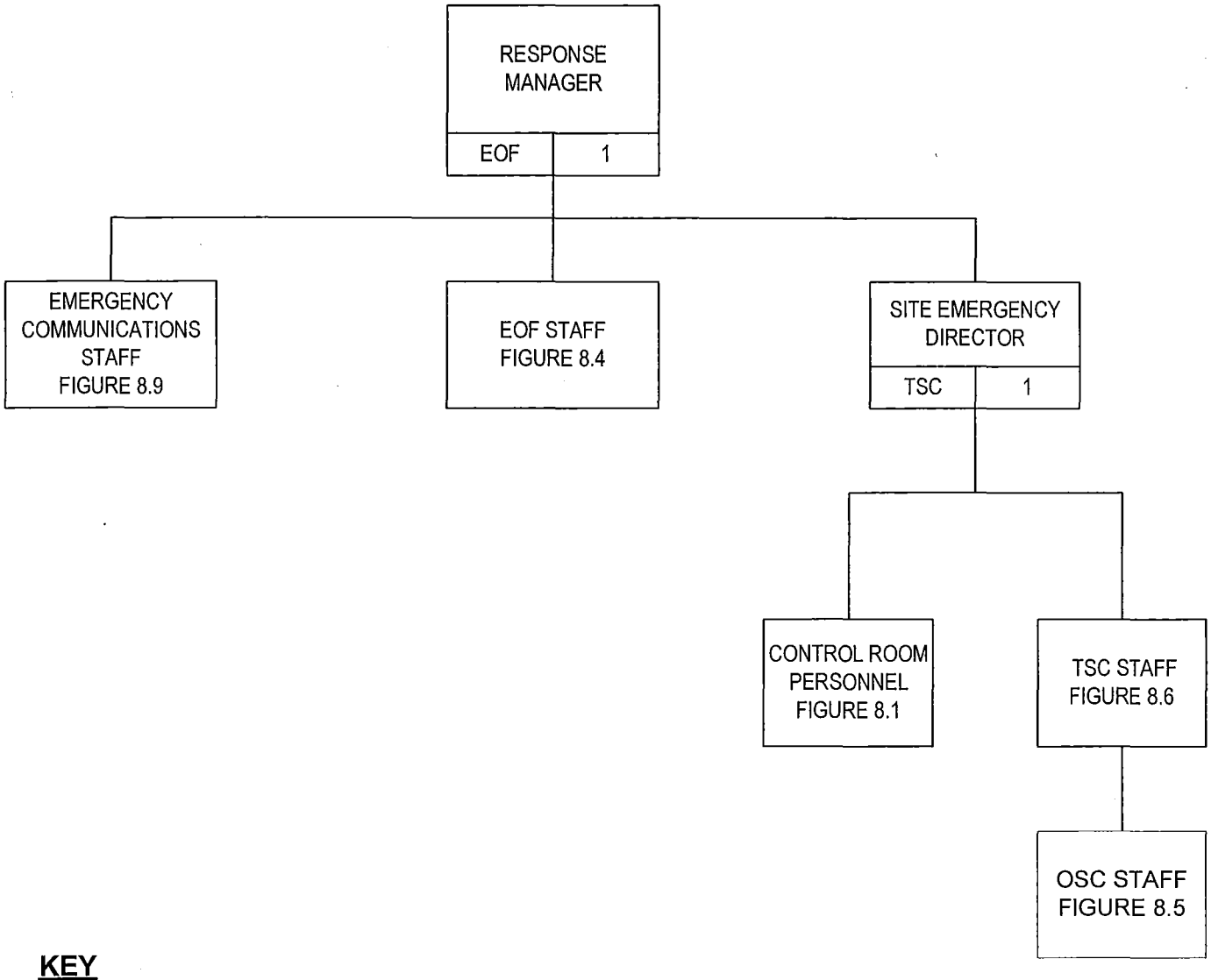
KEY

POSITION TITLE	
LOCATION	NUMBER

CR - CONTROL ROOM
TSC - TECHNICAL SUPPORT CENTER
SNC - SCIENCE & NATURE CENTER
* - MAY ELECT TO REPORT TO THE SITE, EOF or REMAIN AT CURRENT LOCATION

NOTE (1):

IF THE CONDITIONS THAT CAUSED THE UNUSUAL EVENT COMPLETELY CLEARS PRIOR TO PRIMARY RESPONDER NOTIFICATION, THE STED MAY DETERMINE WHICH IF ANY OF THESE INDIVIDUALS NEED TO REPORT TO THE SITE.

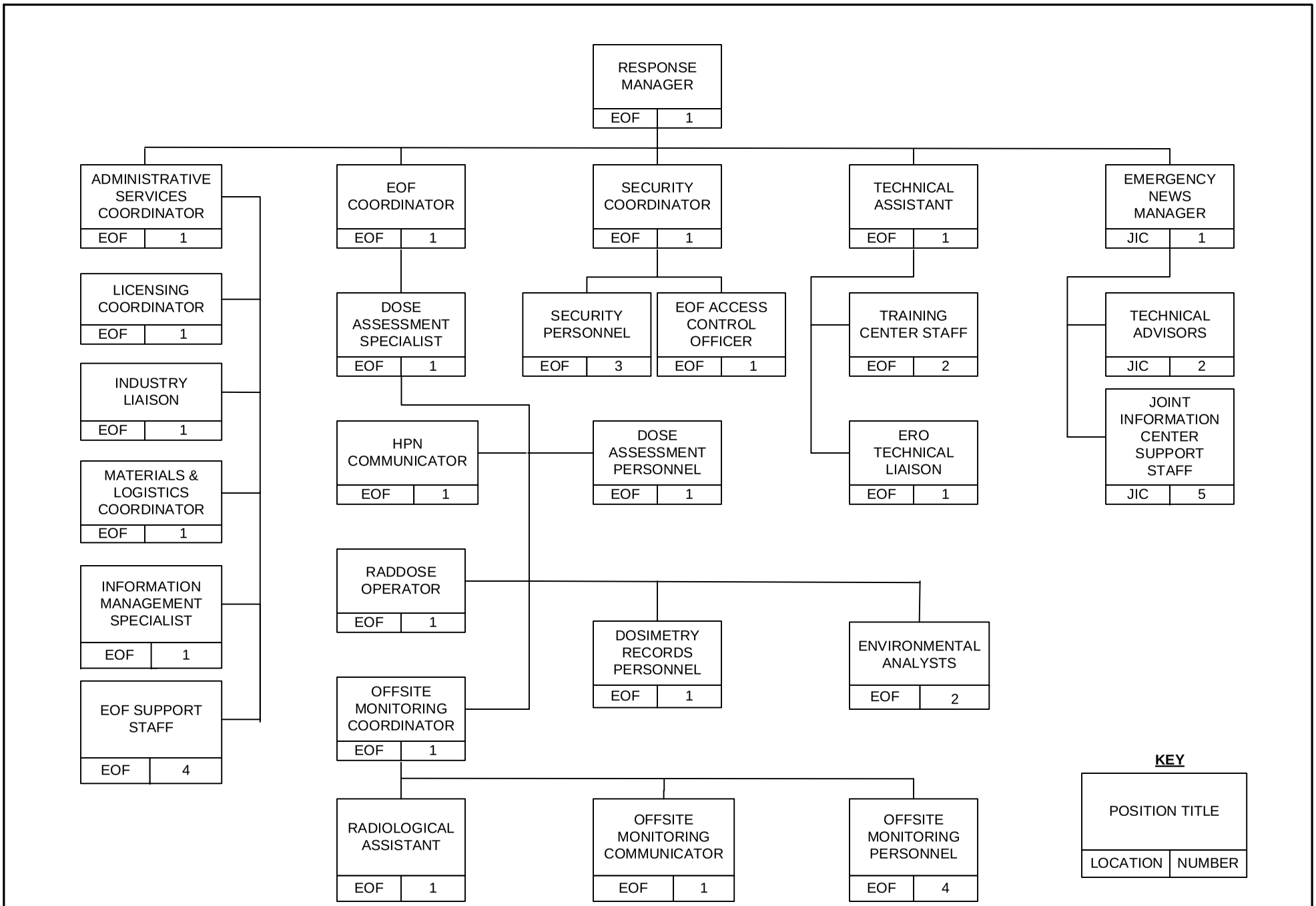


KEY

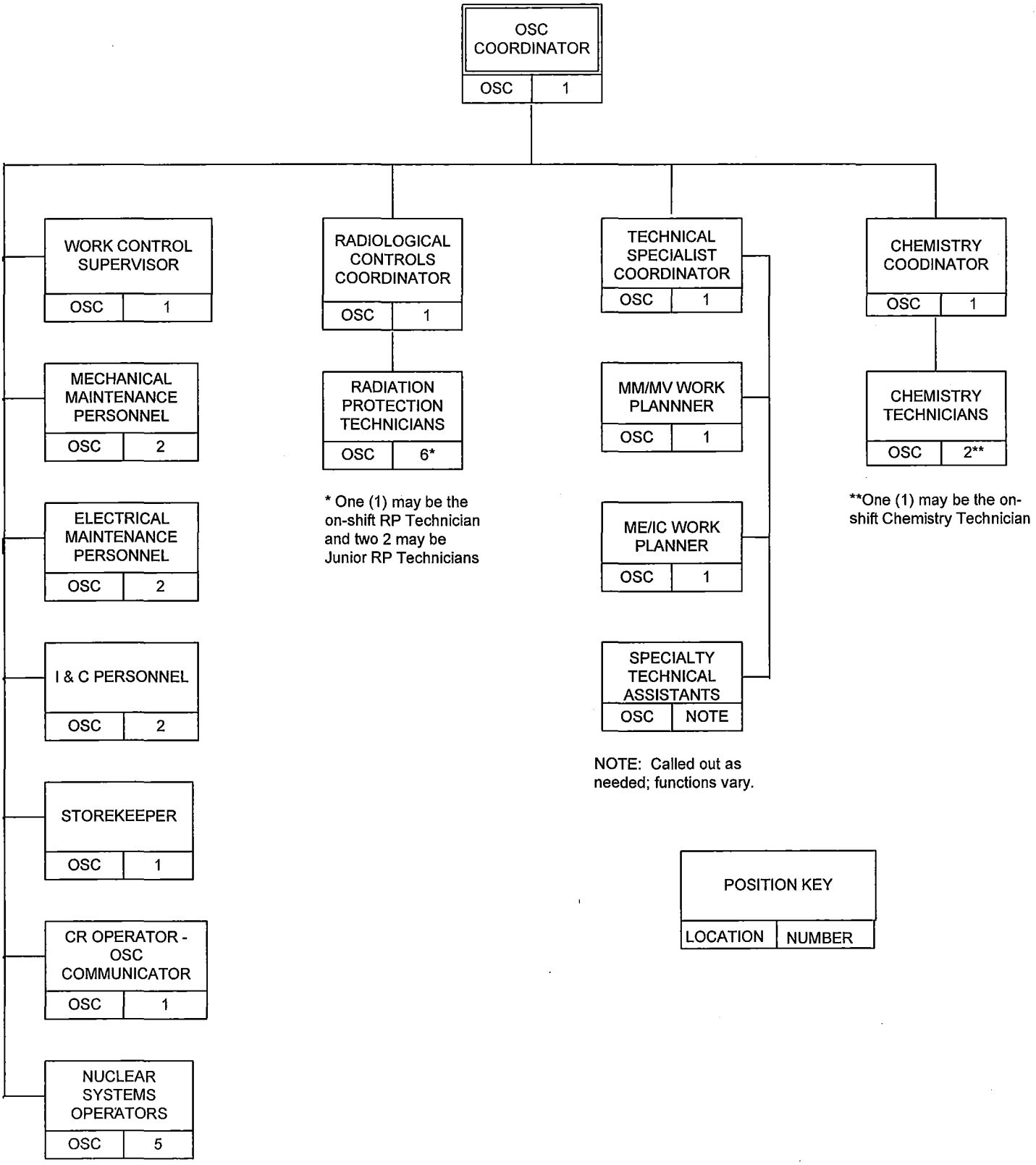
POSITION TITLE	
LOCATION	NUMBER

EOF - EMERGENCY OPERATIONS FACILITY

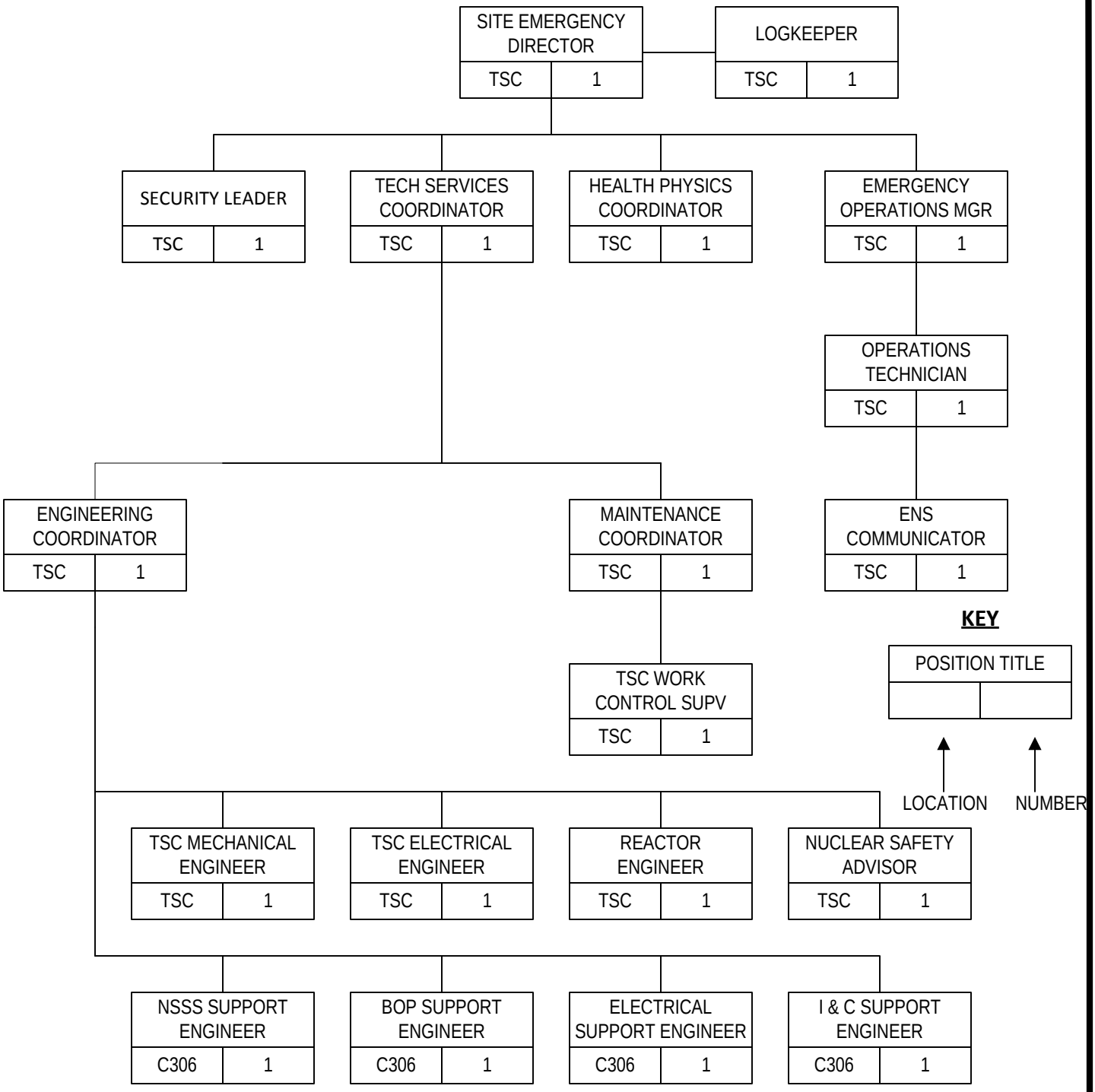
TSC - TECHNICAL SUPPORT CENTER



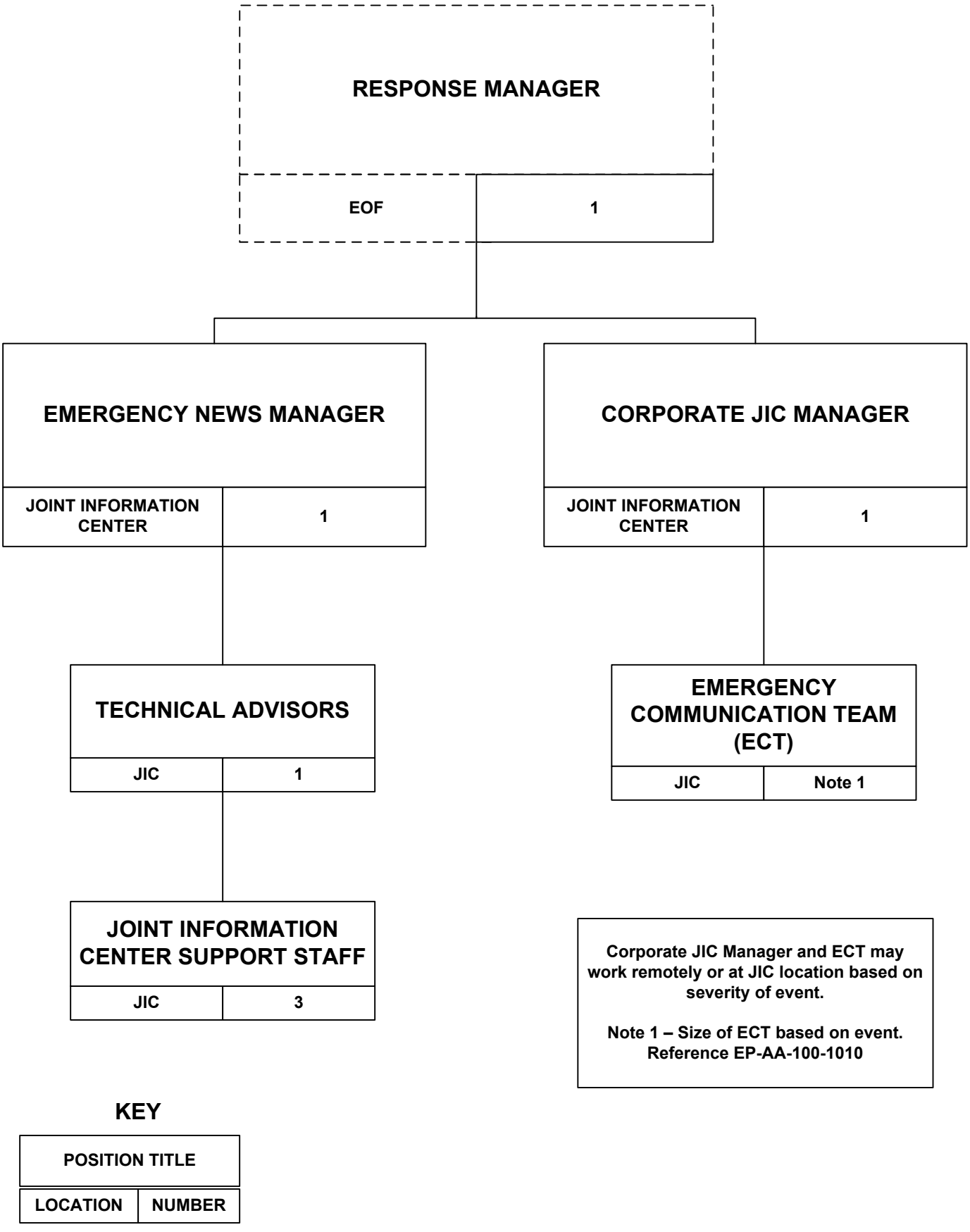
Seabrook Station Radiological Emergency Plan	Emergency Operations Facility Staff	
	SSREP Rev. 67	Figure 8.4



SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	OPERATIONAL SUPPORT CENTER STAFF	
	SSREP REV. 59	FIGURE 8.5



SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	TECHNICAL SUPPORT CENTER (TSC) STAFF	
	SSREP REV. 59	FIGURE 8.6



Seabrook Station Radiological Emergency Plan	Joint Information Center Staff	
	SSREP Rev. 66	Figure 8.9

Figure 8.12
On-Shift Emergency Response Organization Actions

SHIFT MANAGER
(Short Term Emergency Director)

1. Review Station conditions and define emergency classification.
2. Notify Station personnel by Station announcement.
3. Request additional assistance, as required.
4. Project consequences of potential or actual airborne radioactivity releases, when applicable.
5. Notify State and NRC authorities of accident.
6. Evaluate system failures and recommend interim operating procedures/Station modifications.

UNIT SUPERVISOR

1. Recognize accident conditions and notify Shift Manager.
2. Command activities of Control Room staff to restore Station to a safe operating condition.

CONTROL ROOM OPERATORS

1. Implement appropriate procedures and actions to maintain reactor safety.
2. Monitor operational parameter trends.
3. Advise Unit Supervisor of operating conditions.

NUCLEAR SYSTEMS OPERATORS

1. Perform operational activities required to maintain Station safety.
2. Perform immediate mechanical and electrical corrective actions.

RADIATION PROTECTION TECHNICIAN (respond to OSC)

1. Provide radiological monitoring capability.
2. Assist STED with in-plant radiological advice.

SECURITY PERSONNEL

1. Activate ERO notification scheme.
2. Monitor personnel accountability.
3. Provide Station access and egress control measures.

FIRE BRIGADE LEADER

1. Assume role of CR Communicator.
2. Implement CR Communicator Checklist responsibilities.

WORK CONTROL SUPERVISOR

1. Provide plan implementation assistance to the STED.
2. Make initial notification to offsite authorities.
3. May assume role of CR Communicator if Fire Brigade Leader is not available.

MAINTENANCE PERSONNEL (respond to OSC)

1. As available, perform corrective action activities.

CHEMISTRY TECHNICIAN (respond to OSC)

1. Obtain and analyze samples, as appropriate.
2. Assist in radiological monitoring actions.

KEY

P = PRIMARY
S = SUPPORT

AGENCY		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
	EMERGENCY MANAGEMENT	S	P	P	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		S			S	S	P					P			S
	HIGHWAY DEPARTMENT		S							S								
	MASS. NATIONAL GUARD		S						S	S		S			S			
	DEPT. ENV. QUALITY ENGINEERING						S				S							
	DEPT. ENVIRONMENTAL MANAGEMENT				S			S	S									
	DEPT. FOOD AND AGRICULTURE						S				S							
	DEPT. FISH, WILDLIFE & P.C. VEHICLES										S							
	NUCLEAR INCIDENT ADVISORY TEAM						S											
LOCAL	CHIEF EXECUTIVE	P			P	P		P	P									P
	EMERGENCY MANAGEMENT	S	S	S	S	S		S	S	S		P						S
	EMERGENCY RESPONSE ORGANIZATION		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								
	FEDERAL EMERGENCY MGT AGENCY	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S

EPLAN:E070089.DGN

SEABROOK STATION
RADIOLOGICAL EMERGENCY PLAN

SUMMARY OF THE
RADIOLOGICAL EMERGENCY
RESPONSIBILITIES AND FUNCTIONS OF
MASSACHUSETTS STATE AUTHORITIES

SSREP REV. 13 | FIGURE 8.13

KEY

P = PRIMARY

S = SECONDARY

RESPONSIBILITY \ AGENCY	GOVERNOR'S OFFICE	NEW HAMPSHIRE DIVISION OF HOMELAND SECURITY AND EMERGENCY MANAGEMENT	PUBLIC HEALTH (DPHS)	STATE POLICE	TRANSPORTATION	PUPIL TRANSPORTATION SAFETY	DIVISION OF HUMAN SERVICES	NATIONAL GUARD	CIVIL AIR PATROL	RESOURCES AND ECONOMIC DEVELOPMENT	DEPARTMENT OF AGRICULTURE	ENVIRONMENTAL SERVICES	MARINE PATROL	FISH AND GAME DEPARTMENT	U. S. COAST GUARD	FEDERAL AVIATION ADMINISTRATION	RED CROSS	EDUCATION	PUBLIC UTILITIES COMMISSION	EMERGENCY MEDICAL SERVICES
COMMAND AND CONTROL	P	S																		
NOTIFICATION PROCEDURES		S	S	P														S		
EMERGENCY COMMUNICATIONS		P		S					S					S						
PUBLIC ALERT		P		P				S		S	S	S	S	S	S	S				
PUBLIC INFORMATION	P	S																		
EMERGENCY FACILITIES		P	S															S		
ACCIDENT ASSESSMENT		S	P								S	S							S	
PROTECTIVE RESPONSE	P	S	S	S	S	S	S	S	S		S	S					S	S		S
RADIOLOG. EXP. CONTROL		S	P					S												
TRANSPORTATION		P	S		S	S		S												
RECEPTION CENTERS		S	S				P													
MASS CARE FACILITIES		S				S	S										P	S		
MEDICAL SERVICES			P																	S
SOCIAL SERVICES							P										S			
TRAFFIC & ACCESS CONTROL				P	S			S		S				S	S	S				
LAW ENFORCEMENT SUPPORT				P				S												
RESCUE SUPPORT								S												P
RECOVERY AND RE-ENTRY	P	S	S								S	S								
TRAINING		P	S																	
EXERCISES AND DRILLS		P	S																	
PROGRAM MAINTENANCE		P	S																	
COORD. WITH OTHER STATES	P	S	S	S																

EPLAN:E070001.DGN

Figure 8.15
Comparison of NUREG-0654 Emergency Response Staffing Goals with the Seabrook Station On-Shift Emergency Response Organization (ERO)

(Sheet 1 of 6)

Major Functional Area	NUREG-0654 Table B-1 Major Tasks	Position Title or Expertise	On Shift*	SS On-Shift Number	On-Shift ERO Title
Plant Operations and Assessment of Operational Aspects		Shift Supervisor (SRO)	1	1	Shift Manager
		Shift Foreman (SRO)	1	1	Unit Supervisor
		Control Room Operators	2	2	Control Room Operators
		Auxiliary Operators	2	2	Nuclear Systems Operators
Emergency Direction and Control (Emergency Coordinator)***		Shift Technical Advisor, Shift Supervisor or designated facility manager	1**	1**	Shift Manager
Notification/ Communication****	Notify licensee, State, local and Federal personnel and maintain communication		1	3	Control Room Communicator, Security Officer, Work Control Supervisor
Radiological Accident Assessment & Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Senior Manager	--	--	
	Offsite Dose Assessment	Senior Health Physics (HP) Expertise			
	Offsite Surveys		--	--	
	Onsite (out-of-plant)		--	--	
	In-plant surveys	HP Technicians	1	1	Radiation Protection Technician
	Chemistry/Radiochemistry	Rad/Chem Technicians	1	1	Chemistry Technician
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor	1	1**	Shift Manager or SRO qualified to stand shift as STA (STA required in Modes 1 through 4 only per Tech. Specs.)
		Core/Thermal Hydraulics	--	--	
		Electrical	--	--	
		Mechanical	--	--	
	Repair & Corrective Actions	Mechanical Maintenance/ Rad Waste Operator	1**	1**	Nuclear Systems Operator
		Electrical Maintenance/ Instrument & Control (I&C) Technician	1**	1**	Nuclear Systems Operator
			--	--	

Figure 8.15
Comparison of NUREG-0654 Emergency Response Staffing Goals with the Seabrook Station On-Shift Emergency Response Organization (ERO)

(Sheet 2 of 6)

Major Functional Area	NUREG-0654 Table B-1 Major Tasks	Position Title or Expertise	On Shift*	SS On-Shift Number	On-Shift ERO Title
Protective Actions (In-Plant)	Radiation Protection a. Access Control b. HP Coverage for repair, corrective actions, search and rescue, first-aid & firefighting c. Personnel monitoring d. Dosimetry	HP Technicians	2**	1**	Radiation Protection Technician NOTE: Functions a, c and d do not require an RP Technician. Function b can be performed by other onshift personnel including NSOs, Firefighter/EMTs, and Chemistry Technician.
Firefighting	--	--	Fire Brigade per Technical Specifications	Per Operations Management Manual	
Rescue Operations and First-Aid	--	--	2**	2**	
Site Access Control and Personnel Accountability	Security, firefighting communications, personnel accountability	Security Personnel	All per Security Plan	Per Security Plan	
		Total	10	11	

Notes:

* For each unaffected nuclear unit in operation, maintain at least one shift foreman, one control room operator and one auxiliary operator except that units sharing a control room may share a shift foreman if all functions are covered.

** May be provided by shift personnel assigned other functions.

*** Overall direction of facility response to be assumed by EOF director when all centers are fully manned. Director of minute-to-minute facility operations remain with senior manager in technical support center or control room.

**** May be performed by engineering aide to shift supervisor.

Figure 8.15
Comparison of NUREG-0654 Emergency Response Staffing Goals with the Seabrook Station Augmented Emergency Response Organization (ERO)

(Sheet 3 of 6)

Major Functional Area	NUREG-0654 Table B-1 Major Tasks	Position Title or Expertise	NUREG-0654 Capability for Additions 30 min	ERO Capability for Additions 30 min	On-Shift ERO Title Performing Task
Plant Operations and Assessment of Operational Aspects		Shift Supervisor (SRO)	--	--	
		Shift Foreman (SRO)	--	--	
		Control Room Operators	--	--	
		Auxiliary Operators	--	--	
Emergency Direction and Control (Emergency Coordinator)***		Shift Technical Advisor, Shift Supervisor or designated facility manager	--	--	
Notification/ Communication****	Notify licensee, State, local and Federal personnel and maintain communication		1	0	Control Room Communicator, Security Personnel, STED and Work Control Supervisor
Radiological Accident Assessment & Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Senior Manager	0	0	N/A
	Offsite Dose Assessment	Senior Health Physics (HP) Expertise	1	0	STED or Work Control Supervisor
	Offsite Surveys		2	0	None
	Onsite (out-of-plant)	HP Technicians	1	0	Radiation Protection Technician, NSO Firefighter/EMT or Chemistry Technician
	In-plant surveys	HP Technicians	1	0	Same as above
	Chemistry/Radiochemistry	Rad/Chem Technicians	0	0	None
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor	--	--	
		Core/Thermal Hydraulics	1	0	Shift Technical Advisor
		Electrical	0	0	N/A
		Mechanical	0	0	N/A
	Repair & Corrective Actions	Mechanical Maintenance/ Rad Waste Operator	0 --	0 --	N/A
		Electrical Maintenance/ Instrument & Control (I&C) Technician	1 1	0 0	None None

Figure 8.15
Comparison of NUREG-0654 Emergency Response Staffing Goals with the Seabrook Station Augmented Emergency Response Organization (ERO)

(Sheet 4 of 6)

Major Functional Area	NUREG-0654 Table B-1 Major Tasks	Position Title or Expertise	NUREG-0654 Capability for Additions 30 min	ERO Capability for Additions 30 min	On-Shift ERO Title Performing Task
Protective Actions (In-Plant)	Radiation Protection a. Access Control b. HP Coverage for repair, corrective actions, search and rescue, first-aid & firefighting c. Personnel monitoring d. Dosimetry	HP Technicians	2	0	Radiation Protection Technician, NSO, Firefighter/EMT, or Chemistry Technician
Firefighting	--	--	Local Support		
Rescue Operations and First-Aid	--	--	Local Support		
Site Access Control and Personnel Accountability	Security, firefighting communications, personnel accountability	Security Personnel			
		Total	11	0	

Notes:

* For each unaffected nuclear unit in operation, maintain at least one shift foreman, one control room operator and one auxiliary operator except that units sharing a control room may share a shift foreman if all functions are covered.

** May be provided by shift personnel assigned other functions.

*** Overall direction of facility response to be assumed by EOF director when all centers are fully manned. Director of minute-to-minute facility operations remain with senior manager in technical support center or control room.

**** May be performed by engineering aide to shift supervisor.

Figure 8.15
Comparison of NUREG-0654 Emergency Response Staffing Goals with the Seabrook Station Augmented Emergency Response Organization (ERO)

(Sheet 5 of 6)

Major Functional Area	NUREG-0654 Table B-1 Major Tasks	Position Title or Expertise	NUREG-0654 Capability for Additions 60 min	ERO Capability for Additions 60 min	Augmented ERO Title
Plant Operations and Assessment of Operational Aspects		Shift Supervisor (SRO)	--	--	
		Shift Foreman (SRO)	--	--	
		Control Room Operators	--	--	
		Auxiliary Operators	--	--	
Emergency Direction and Control (Emergency Coordinator)***		Shift Technical Advisor, Shift Supervisor or designated facility manager	--	--	
Notification/ Communication****	Notify licensee, State, local and Federal personnel and maintain communication		3	3	Site Emergency Director, Operations Technician, ERO Technical Liaison
Radiological Accident Assessment & Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Senior Manager	1	1	Response Manager
	Offsite Dose Assessment	Senior Health Physics (HP) Expertise	1	1	EOF Coordinator
	Offsite Surveys		4	4	Offsite Monitoring Sampling Personnel (2 Monitors/2 Drivers)
	Onsite (out-of-plant) +		2	2	Radiation Protection (RP) Technician /Junior RP Technician
	In-plant surveys +	HP Technicians	2	2	RP Technician/ Junior RP Technician
	Chemistry/Radiochemistry	Rad/Chem Technicians	1	1	Chemistry Technician
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor	--	--	
		Core/Thermal Hydraulics	1	1	Reactor Engineer
		Electrical	1	1	TSC Electrical Engineer
		Mechanical	1	1	TSC Mechanical Engineer
	Repair & Corrective Actions	Mechanical Maintenance/	2	2	Mech. Maintenance Personnel
		Rad Waste Operator	--	--	
		Electrical Maintenance/	2	2	Elec. Maintenance Personnel
		Instrument & Control (I&C) Technician	1	1	I&C Personnel

Figure 8.15
Comparison of NUREG-0654 Emergency Response Staffing Goals with the Seabrook Station Augmented Emergency Response Organization (ERO)

(Sheet 6 of 6)

Major Functional Area	NUREG-0654 Table B-1 Major Tasks	Position Title or Expertise	NUREG-0654 Capability for Additions 60 min	ERO Capability for Additions 60 min	Augmented ERO Title
Protective Actions (In-Plant)	Radiation Protection + a. Access Control b. HP Coverage for repair, corrective actions, search and rescue, first-aid & firefighting c. Personnel monitoring d. Dosimetry	HP Technicians	4	3	Health Physics Coordinator, Radiological Controls Coordinator, RP Technicians Junior RP Technician
Firefighting	..	..	Local Support		
Rescue Operations and First-Aid	..	..	Local Support		
Site Access Control and Personnel Accountability	Security, firefighting communications, personnel accountability	Security Personnel			
		Total	26	25	

Notes:

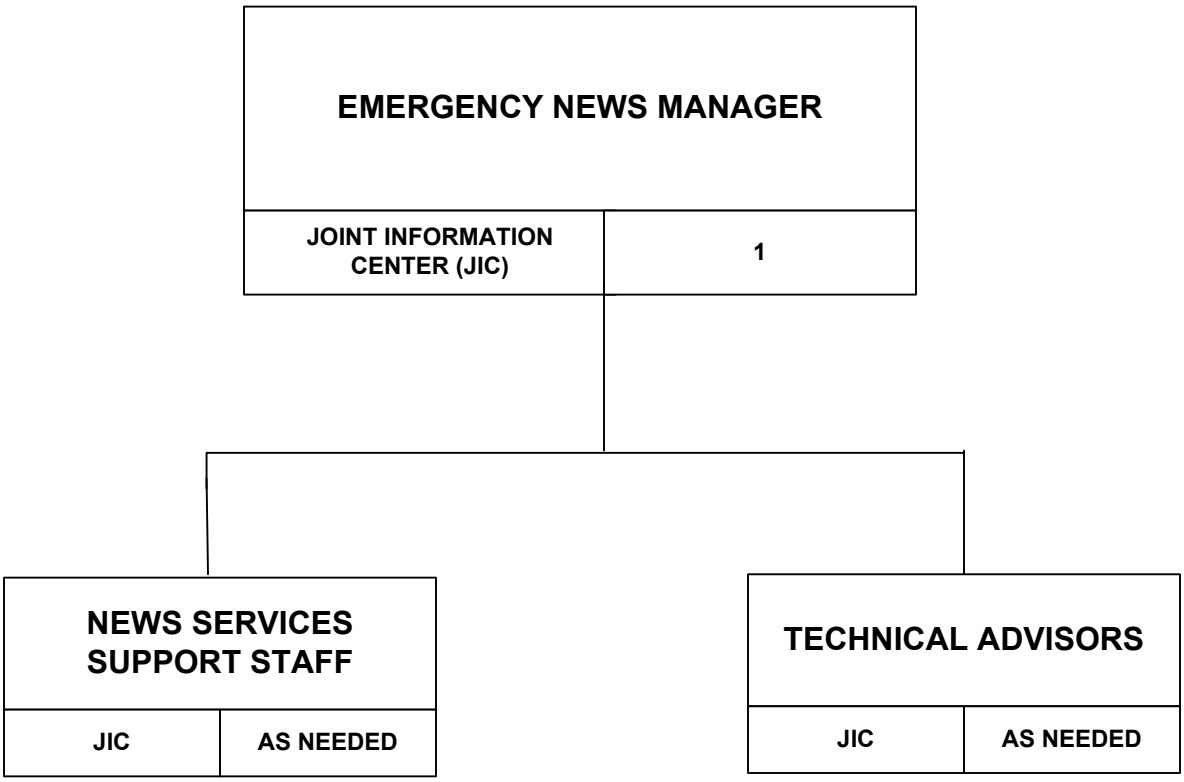
* For each unaffected nuclear unit in operation, maintain at least one shift foreman, one control room operator and one auxiliary operator except that units sharing a control room may share a shift foreman if all functions are covered.

** May be provided by shift personnel assigned other functions.

*** Overall direction of facility response to be assumed by EOF director when all centers are fully manned. Director of minute-to-minute facility operations remain with senior manager in technical support center or control room.

**** May be performed by engineering aide to shift supervisor.

\+ Tasks may be performed by Junior Radiation Protection Technicians as directed by the Radiological Controls Coordinator.



Response may be to the Joint Information Center or as directed by the Emergency News Manager

KEY

POSITION TITLE	
LOCATION	NUMBER

1. NOTIFICATION METHODS

LOCATION	NOTIFICATION METHOD
INSIDE THE PROTECTED AREA	GAI-TRONICS ALARM AND PLANT ANNOUNCEMENT – ALARM MAKES A PULSATING SOUND
OUTSIDE THE PROTECTED AREA	SITE SIREN – THE SIREN MAKES AN ALTERNATING HI-LO SOUND
WORKING ON A LAN CONNECTED PC	POP-UP MESSAGE ON THE PC MONITOR SCREEN
SELECTED SITE OFFICE BUILDINGS	SECURITY CALL TO CERTAIN WORK AREAS – CALL RECIPIENT WILL NOTIFY CO-W0RKERS
ANYWHERE ONSITE	WORD-OF-MOUTH FROM ERO PERSONNEL NOTIFIED BY PAGER

2. EXPECTED RESPONSE TO NOTIFICATIONS

NOTIFICATION METHOD	EXPECTED RESPONSE
GAI-TRONICS ALARM/ANNOUNCEMENT	LISTEN TO ANNOUNCEMENT AND FOLLOW INSTRUCTIONS
SITE SIREN	NON-ERO PERSONNEL GO TO VEHICLES AND LEAVE THE SITE AS DIRECTED BY SECURITY
POP-UP MESSAGE ON PC SCREEN	FOLLOW INSTRUCTIONS PROVIDED IN POP-UP MESSAGE ON PC SCREEN
SECURITY CALL TO OFFICE AREAS	FOLLOW INSTRUCTIONS FROM PERSON WHO RECEIVED CALL FROM SECURITY
WORD-OF-MOUTH FROM ERO MEMBER	FOLLOW INSTRUCTIONS PROVIDED BY ERO MEMBER

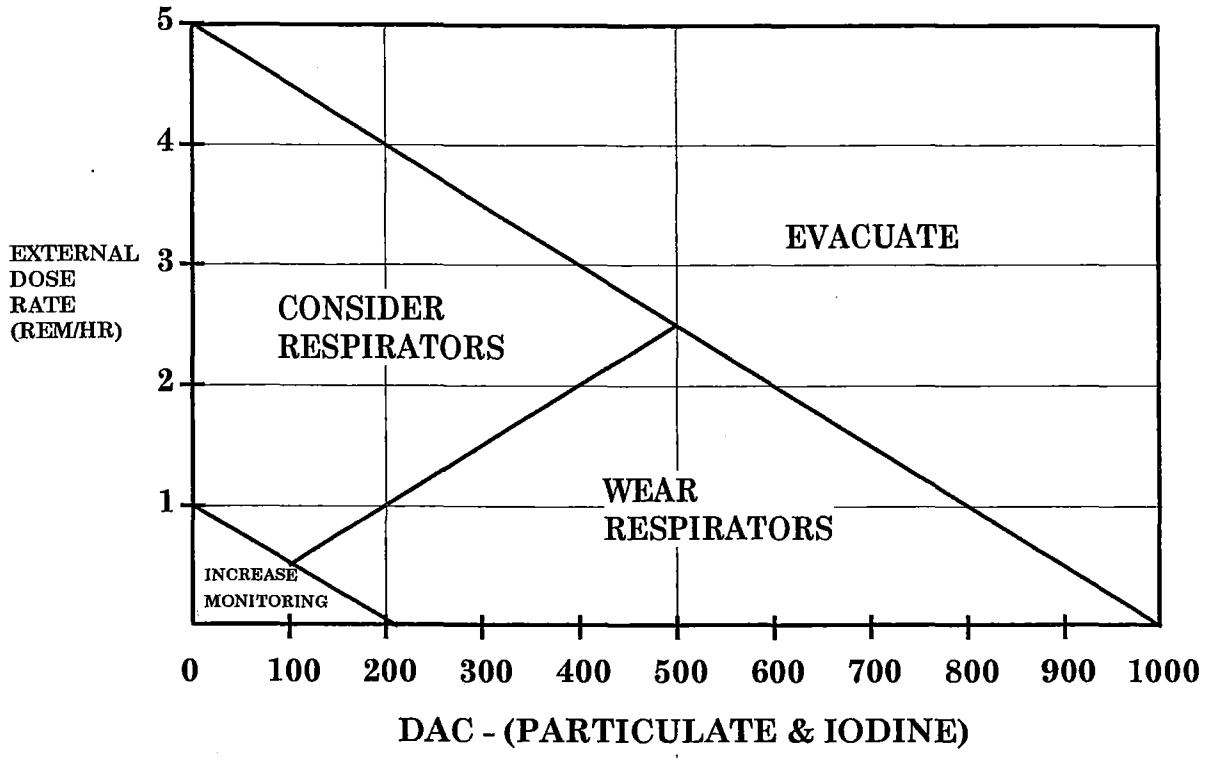
3. REPORTING INSTRUCTIONS

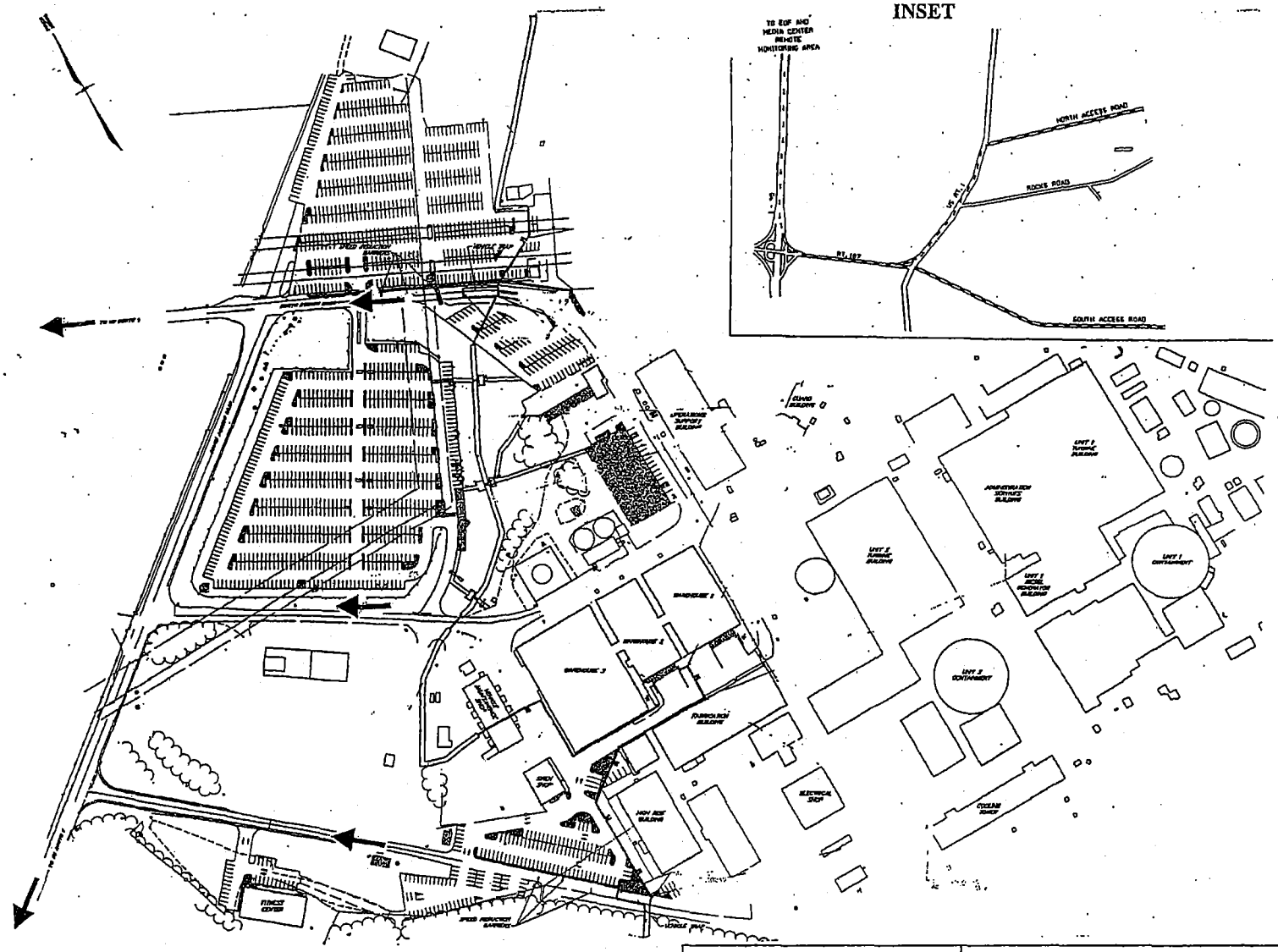
PERSONNEL/RESPONDER CLASS	REPORTING INSTRUCTIONS
ON-DUTY PRIMARY RESPONDERS*	REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITY**
OFF-DUTY PRIMARY RESPONDERS*	REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITY**
SUBJECT-TO-CALL RESPONDERS	REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITY**
SECONDARY RESPONDERS	REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITY** NORMAL WORKING HOURS: IF FACILITY POSITION HAS BEEN FILLED, GO TO THE ASSEMBLY AREA FOR ASSIGNMENT TO ADDITIONAL SHIFTS
NON-ASSIGNED STATION PERSONNEL	GO HOME OR GO TO REMOTE MONITORING AREA AS DIRECTED**
SITE VISITORS	LEAVE SITE OR GO TO REMOTE MONITORING AREA AS DIRECTED**

* NOT REQUIRED FOR RESPONSE MANAGER, EOF COORDINATOR AND EMERGENCY NEWS MANAGER AT UNUSUAL EVENT

** FOR SECURITY EVENTS, A GAI-TRONICS ANNOUNCEMENT AND ERO PAGER MESSAGE OR CODE MAY INDICATE DIFFERENT REPORTING INSTRUCTIONS.

Figure 10.1
Emergency Center Protection





SEABROOK STATION RADIOLOGICAL EMERGENCY PLAN	SEABROOK STATION EVACUATION ROUTES	
	SSREP REV. 48	FIGURE 10.2

APPENDIX A

EMERGENCY RESPONSE ORGANIZATION POSITION DEFINITIONS

(Protected: Ref. NRC IR 85-32[15b])

APPENDIX A

INDEX

NOTE

The prerequisites and backgrounds prescribed for ERO positions in Table 1 will apply to position holders assigned to the ERO. Under extraordinary conditions, the Emergency Preparedness Manager may make exceptions to Table 1 requirements to ensure that an emergency response organization is maintained. Exceptions to training requirements shall be processed in accordance with the requirements of the Training and Qualification Manual (NAQM).

TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
Administrative Services Coordinator	No specific position prerequisites.	Appropriate management or supervisory experience as determined by EP management.
Assembly Area Coordinator	No specific position prerequisites.	No specific background requirement.
BOP Support Engineer	Engineering background or degree. Applicable Radiation Worker qualification.	Routinely engaged in engineering-related activities.
Chemistry Coordinator	Applicable Radiation Worker qualification, Respiratory Protection qualification.	Chemistry Department personnel.
Chemistry Technician	Completed appropriate department qualification program. Applicable Radiation Worker qualification GT1070I/GT5004C (Protected: Ref. SEP911077), Respiratory Protection qualification, GT1074J.	Chemistry Technician.
Control Room Communicator	Applicable Radiation Worker qualification.	Fire Brigade Leader.
Control Room Operators	Licensed Reactor Operator. Applicable Radiation Worker qualification, Respiratory Protection qualification.	Individuals assigned by Operations.
Dose Assessment Personnel	No specific position prerequisites.	No specific background requirement.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
Dose Assessment Specialist	Assigned from the Health Physics Department or working knowledge of Station HP programs (e.g., dosimetry, access controls) and of radiological consequence assessment (e.g., core damage, effluent pathways, release components). (Protected: Ref. NRC IR 98-03 and CR 98-1743).	Personnel with appropriate technical skills and experience as determined by HP management.
Electrical Maintenance Personnel	Completed appropriate department qualification program. Applicable Radiation Worker qualification, Respiratory Protection qualification.	Electrical Maintenance Department personnel or Training Department personnel for this discipline.
Electrical Support Engineer	Engineering background or degree. Applicable Radiation Worker qualification.	Routinely engaged in engineering related activities.
Electricians	Applicable Radiation Worker qualification, Respiratory Protection qualification.	Station Electricians.
Emergency News Manager	Personnel assignments must receive concurrence from the Seabrook Station Communications Department.	Personnel with appropriate knowledge of communications activities as determined by the Communications Dept. management.
Emergency Operations Manager	Currently licensed SRO, supervisor or higher (Protected: Ref. NRC IR 98-03 and CR 98-1743). Applicable Radiation Worker qualification TS1003C – Mitigation of Core Damage (Protected: Ref. NRC IR 86-18 (4) and ISEG # R8905-003).	Shift Managers or Assistant Operations Managers jointly assigned by Operations and Emergency Preparedness.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
Engineering Coordinator	Engineering background or degree, principal engineer or past or current supervisor or higher. Applicable Radiation Worker qualification, TS8072I-TS8081I (Protected: Ref. NRC IR 98-03/CR 98-1743).	Routinely engaged in engineering-related activities.
ENS Communicator	Applicable Radiation Worker qualification.	Current or past experience in Operations, Operations Training, Engineering, or Licensing.
Environmental Analyst	No specific position prerequisites.	Background in Chemistry or Radiation Protection.
EOF Access Control Personnel	No specific position prerequisites.	Routinely engaged in inprocessing access control activities.
EOF Coordinator	Knowledge of Station HP programs (e.g., dosimetry, access controls) and radiological consequence assessment (e.g., core damage, effluent pathways, release components).	Personnel with appropriate technical skills and experience as determined by Emergency Preparedness Department management.
EOF Support Staff	No specific position prerequisites.	No specific background requirement.
ERO Technical Liaison	Working knowledge of Seabrook Station (construction and system features).	No specific background requirement.
Health Physics Coordinator	HP experience. Applicable Radiation Worker qualification.	Present or past experience with Radiation Protection-related duties.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
HPN Communicator	No specific position prerequisites.	Personnel with appropriate knowledge of nuclear power plant operations as determined by EP Department management.
I&C Personnel	Completed appropriate department qualification program. Applicable Radiation Worker qualification, Respiratory Protection qualification.	I&C Department personnel or Training Department personnel for this discipline.
I&C Support Engineer	Engineering background or degree. Applicable Radiation Worker qualification.	Routinely engaged in engineering related activities.
I&C Technicians	Applicable Radiation Worker qualification, Respiratory Protection qualification.	Station I&C Technicians.
Industry Liaison	No specific position prerequisites.	No specific background requirement.
Information Management (IM) Specialist	No specific position prerequisites	Routinely engaged in IM related activities.
Joint Information Center Support Staff	No specific position prerequisites.	No specific background requirement.
Joint Information Center Technical Advisors	Working knowledge of Seabrook Station (construction and system features).	No specific background requirement.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
Junior Radiation Protection Technician	Applicable Radiation Worker qualification, Respiratory Protection qualification, HP1066Z, HP1067Z, or equivalent training on RP Fundamentals.	Experienced with or trained on Radiation Protection related duties.
Licensing Coordinator	No specific position prerequisites.	Routinely engaged in licensing-related activities.
Maintenance Coordinator	Applicable Radiation Worker qualification.	Appropriate management or supervisory experience as determined by Maintenance Group management.
Material and Logistic Coordinator	Ability to use the current corporate purchasing system.	Routinely engaged in purchasing and procurement-related activities.
Mechanical Maintenance Personnel	Completed appropriate department qualification program. Applicable Radiation Worker qualification, Respiratory Protection qualification.	Mechanical Maintenance Department personnel or Training Department personnel for this discipline.
Mechanics	Applicable Radiation Worker qualification, Respiratory Protection qualification.	Station Mechanics.
NSSS Support Engineer	Engineering background or degree. Applicable Radiation Worker qualification.	Routinely engaged in engineering related activities.
Nuclear Safety Advisor	Engineering background, degree, or PRA experience. Applicable Radiation Worker qualification.	Routinely engaged in engineering or PRA activities.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1 ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])		
POSITION TITLE	**PREREQUISITES**	**POTENTIAL CANDIDATES BACKGROUND**
Nuclear Systems Operator	Completion of appropriate department qualifications for standing watch. Applicable Radiation Worker qualification, GT1070I/GT5004C (Protected: Ref. SEP911077), Respiratory Protection qualification.	Nuclear Systems Operator.
Offsite Monitoring Communicator	No specific position prerequisites.	No specific background requirement.
Offsite Monitoring Coordinator	No specific position prerequisites.	Personnel with appropriate experience and training as determined by RP or Chemistry Department management.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
Offsite Monitoring/Sampling Team Personnel	HP1044Z, RW1032Z or equivalent (HP Fundamentals). Applicable Radiation Worker qualification, Respiratory Protection qualification.	Experienced with or trained on Radiation Protection related duties.
Offsite Monitoring/Sampling Team Driver	Valid driver's license. Applicable Radiation Worker qualification, Respiratory Protection qualification.	No specific background requirement.
Operations Technician	Past or current SRO license at Seabrook Station or current licensed operator training instructor with SRO certification at Seabrook Station. Applicable Radiation Worker qualification.	Routinely engaged in operations-related activities, including licensed operator training.
OSC Coordinator	Past or current SRO license for Seabrook Station. Applicable Radiation Worker qualification, Respiratory Protection qualification.	Past or current Unit Supervisors jointly assigned by Operations and Emergency Preparedness.
Raddose Operator	No specific position prerequisites (Protected: Ref. NRC IR86-18 [5]).	No specific background requirement.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
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TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
Radiation Protection Technician	Completed appropriate department qualification program. Applicable Radiation Worker qualification, Respiratory Protection qualification, GT1074J, HP1075I.	Radiation Protection.
Radiological Assistant	HP1044Z, RW1032Z or equivalent (HP Fundamentals). Applicable Radiation Worker qualification.	Experienced with or trained on Radiation Protection-related duties.
Radiological Controls Coordinator	HP experience. Applicable Radiation Worker qualification, Respiratory Protection qualification.	Experienced with or trained on Radiation Protection related duties.
Reactor Engineer	Applicable Radiation Worker qualification.	Routinely engaged in reactor engineering-related activities.
Response Manager	TS8072I-TS8081I or past or current SRO license or certification, past or current supervisor or higher, documented concurrence of assignment by the Site Vice President. (Protected: Ref. NRC IR 98-03 and CR 98-1743).	Appropriate management or supervisory experience as determined by senior station management.
Security Coordinator	Security Department Manager, Supervisor or Senior Analyst.	Routinely engaged in security-related activities.
Security Leader	Security department supervisor or security shift coordinator.	Routinely engaged in security-related activities.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1 ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])		
POSITION TITLE	**PREREQUISITES**	**POTENTIAL CANDIDATES BACKGROUND**
Security Personnel	Completed appropriate department qualification program per Security Plan. Applicable Radiation Worker qualification, Respiratory Protection qualification	Per Security Plan
Short Term Emergency Director	Licensed SRO. Applicable Radiation Worker qualification, Respiratory Protection qualification (Protected: Ref. NRC 86-18-01)	Shift Manager, Unit Supervisor.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
Site Emergency Director	Applicable Radiation Worker qualification, TS1003C, SRO or TS8072I-TS8081I Plant Operations Course (Protected: Ref. NRC IR 86-18 (4) and ISEG #R8905-003), past or current SRO license or certification, past or current supervisor or higher (Protected: Ref. NRC IR 98-03 and CR 98-1743).	Appropriate management or supervisory experience as determined by senior station management.
Specialty Technical Assistant (Protected: Ref. NRC IR 88-09)	Applicable Radiation Worker qualification.	Individuals selected based on unique technical knowledge, skills or abilities.
Storekeeper	Routinely engaged in stores-related activities. Applicable Radiation Worker qualification, Respiratory Protection qualification.	Materials Management Department personnel.
Technical Assistant	Working knowledge of Seabrook Station (construction and system features), past or current SRO license or certification, licensed operator training experience. (Protected: Ref. NRC IR 98-03 and CR 98-1743).	Personnel with appropriate experience and training as determined by Training Dept. management.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
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TABLE 1
ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])

POSITION TITLE	PREREQUISITES	POTENTIAL CANDIDATES BACKGROUND
Technical Services Coordinator	Applicable Radiation Worker qualification, SRO or TS8072I-TS8081I Plant Operations Course (Protected Ref. ISEG# R8905-003), or past or current SRO license or certification, assigned from Engineering, Maintenance, Work Control or Outage Management (Protected: Ref. NRC IR 98-03 and CR 98-1743).	Personnel with appropriate knowledge and experience as determined by the assignee's department management with concurrence of EP department management.
Technical Specialist Coordinator (Protected: Ref. NRC IR 88-09)	Applicable Radiation Worker qualification, Respiratory Protection qualification.	No specific background requirement.
Training Center Staff	Operations Training Instructor.	Operations Training Department Personnel.
TSC Engineer - Electrical	Applicable Radiation Worker qualification.	Present or past experience with electrical engineering-related duties.
TSC Engineer - Mechanical	Applicable Radiation Worker qualification.	Present or past experience with mechanical engineering-related duties.
TSC Logkeeper	Applicable Radiation Worker qualification.	No specific background requirement.
Work Control Supervisors	Licensed SRO. Applicable Radiation Worker qualification Respiratory Protection qualification.	Individuals assigned by Operations.
Work Planner – Mechanical/Valve Maintenance	Applicable Radiation Worker qualification.	Experienced work planners assigned by the Maintenance Department.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 1 ERO ASSIGNMENT PREREQUISITES and BACKGROUND (Protected: Ref. NRC IR 85-32 [15b])		
POSITION TITLE	**PREREQUISITES**	**POTENTIAL CANDIDATES BACKGROUND**
Work Planner – Electrical/I&C Maintenance	Applicable Radiation Worker qualification.	Experienced work planners assigned by the Maintenance Department.

PREREQUISITE COURSE NUMBERS

GT1074J	= FIREHAWK SCBA Use	TS8072I-TS8081I	= Plant Operations Course	HP 1044Z	= HP Fundamentals
HP1066Z	= HP Fundamentals for Junior HP Technicians	GT1070I	= Supplemental Radiation Worker	HP1075I	= Response to Contaminated Injured Person
HP1067Z	= OSC Junior HP Technician	GT5004C	= WBT Supplemental Radiation Worker Requalification		
RW1032Z	= HP Fundamentals for Radwaste	TS1003C	= Mitigation of Core Damage		

TABLE 2
ERO POSITION INFORMATION

POSITION TITLE AND TYPE	ACTIVATION LEVEL	RESPONSE LOCATION	REPORTS TO	PRIMARY RESPONSIBILITIES
Administrative Services Coordinator (STC)	Alert through General Emergency	Emergency Operations Facility	Response Manager	Provides administrative support and obtains additional resources to support the emergency effort.
Assembly Area Coordinator (S)	Alert through General Emergency (normal work hours only)	Seabrook Station Conference Center	Administrative Services Coordinator	Coordinates operation of the Assembly Area for backup ERO responders and maintenance technicians during normal work hours.
BOP Support Engineer (S)	Alert through General Emergency	Technical Support Center	Engineering Coordinator	Assists Engineering Coordinator in performing engineering assessment.
Chemistry Coordinator (STC)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Coordinates post-accident sampling and analysis functions during an emergency.
Chemistry Technician (OS and STC)	Alert through General Emergency	Operational Support Center	Chemistry Coordinator	Obtains and analyzes post-accident samples.
Control Room Communicator (OS)	Unusual Event	CR	Short Term Emergency Director	Assists STED with NRC and primary responder notification. Maintains ENS communications.
Control Room Operators (S)	Alert through General Emergency	Operational Support Center	OSC Coordinator	One is dispatched to the Control Room to staff the 4-way data link and one staffs 4-way data link in the OSC.

(OS) = On shift ERO position
(P) = Primary Responder – Rotating duty augmented ERO position
(STC) = Subject to Call Responder– Non-rotating augmented ERO position that should be staffed prior to facility activation
(S) = Secondary Responder –Non-rotating ERO staff position

TABLE 2 ERO POSITION INFORMATION				
POSITION TITLE AND TYPE	**ACTIVATION LEVEL**	**RESPONSE LOCATION**	**REPORTS TO**	**PRIMARY RESPONSIBILITIES**
Dose Assessment Personnel (S)	Alert through General Emergency	Emergency Operations Facility	Dose Assessment Specialist	Provides administrative and clerical support to the Dose Assessment Specialist.
Dose Assessment Specialist (STC)	Alert through General Emergency	Emergency Operations Facility	EOF Coordinator	Determines projected/actual offsite dose conditions. Coordinates the evaluation of sample analysis data.
Electrical Maintenance Personnel (STC)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Performs electrical system repair and corrective action activities.
Electrical Support Engineer (S)	Alert through General Emergency	Technical Support Center	Engineering Coordinator	Assists Engineering Coordinator in performing engineering assessment.
Electricians (S)	Staffing Based on Event	Assembly Area/ Operational Support Center	Electrical Maintenance Personnel	Perform repair and corrective actions as directed by the OSC Coordinator.

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TABLE 2
ERO POSITION INFORMATION

POSITION TITLE AND TYPE	ACTIVATION LEVEL	RESPONSE LOCATION	REPORTS TO	PRIMARY RESPONSIBILITIES
Emergency News Manager (P)	Unusual Event through General Emergency	Seabrook Station News Service or Joint Information Center	Site Emergency Director or Response Manager	Manages the emergency public information function, information dissemination, media and public relations. Coordinates emergency public information and rumor control with state and federal public information officials.
Emergency Operations Manager (S)	Alert through General Emergency	Technical Support Center	Site Emergency Director	Provides overall direction and coordination of emergency response activities performed by Operations Department personnel.
Engineering Coordinator (STC)	Alert through General Emergency	Technical Support Center	Technical Services Coordinator	Coordinates engineering assessment and technical support activities conducted from the TSC. Performs Severe Accident Management Evaluator functions.
ENS Communicator (S)	Alert through General Emergency	Technical Support Center	Operations Technician	Maintains communications with NRC.
Environmental Analyst (S)	Alert Through General Emergency	Emergency Operations Facility	Dose Assessment Specialist	Conducts radiological analysis of environmental samples.
EOF Access Control Personnel (S)	Alert Through General Emergency	Emergency Operations Facility	Security Coordinator	Controls access to Emergency Operations Facility
EOF Coordinator (P)	Unusual Event through General Emergency	Emergency Operations Facility	Response Manager	Coordinates radiological and protective action assessments and performs state notifications from the EOF.

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TABLE 2
ERO POSITION INFORMATION

POSITION TITLE AND TYPE	ACTIVATION LEVEL	RESPONSE LOCATION	REPORTS TO	PRIMARY RESPONSIBILITIES
EOF Support Staff (S)	Alert through General Emergency	Emergency Operations Facility	Administrative Services Coordinator	Provides administrative and clerical support.
ERO Technical Liaison (P)	Unusual Event through General Emergency	Control Room/ Emergency Operations Facility	Site Emergency Director or Response Manager	Notifies and interacts with the New Hampshire Public Utilities Commission, Massachusetts Emergency Management Agency and Maine Emergency Management Agency staff.
Health Physics Coordinator (P)	Unusual Event through General Emergency	Control Room/ Technical Support Center	Site Emergency Director	Coordinates radiological and protective action assessment activities conducted from the TSC.
HPN Communicator (S)	Alert through General Emergency	Emergency Operations Facility	Dose Assessment Specialist	Maintains Health Physics Network communication with the NRC.
I&C Technicians (S)	Staffing Based on Event	Assembly Area/ Operational Support Center	I & C Personnel	Perform repair and corrective actions as directed by the OSC Coordinator.
I&C Personnel (STC)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Performs instrument and control system repair and corrective action activities.
I&C Support Engineer (S)	Alert through General Emergency	Technical Support Center	Engineering Coordinator	Assists Engineering Coordinator in performing engineering assessment.
Industry Liaison (S)	Alert through General Emergency	Emergency Operations Facility	Admin. Services Coordinator	Coordinates interfaces with industry organizations and Joint Owners during an emergency.

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(S) = Secondary Responder –Non-rotating ERO staff position

TABLE 2
ERO POSITION INFORMATION

POSITION TITLE AND TYPE	ACTIVATION LEVEL	RESPONSE LOCATION	REPORTS TO	PRIMARY RESPONSIBILITIES
Information Mgmt. (IM) Specialist (S)	Alert through General Emergency	Emergency Operations Facility	Admin. Services Coordinator	Performs or coordinates corrective actions as needed for IM equipment in emergency facilities.
Joint Information Center Support Staff (S)	Alert through General Emergency	Joint Information Center	Emergency News Manager	Assists the Emergency News Manager with performing functions of the Joint Information Center.
Joint Information Center Technical Advisors (S)	Alert through General Emergency	Joint Information Center	Emergency News Manager	Obtains technical information from the EOF, updates Emergency News Manager, reviews news statements for technical accuracy, assists with news briefings. This position may also perform the duties of the SSNS Technical Advisor for an Unusual Event.
Junior Radiation Protection Technician (STC)	Alert through General Emergency	Operational Support Center	Radiological Controls Coordinator	Performs health physics tasks as assigned by the Radiological Controls Coordinator.

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TABLE 2 ERO POSITION INFORMATION				
POSITION TITLE AND TYPE	**ACTIVATION LEVEL**	**RESPONSE LOCATION**	**REPORTS TO**	**PRIMARY RESPONSIBILITIES**
Licensing Coordinator (S)	Alert through General Emergency	Emergency Operations Facility	Administrative Services Coordinator	Coordinates interfaces with regulatory agencies during an emergency.
Maintenance Coordinator (STC)	Alert through General Emergency	Technical Support Center	Technical Services Coordinator	Coordinates maintenance input to repair and corrective action analysis and decision making conducted from the TSC.
Materials and Logistics Coordinator (S)	Alert through General Emergency	Emergency Operations Facility	Administrative Services Coordinator	Provides the EOF staff with the resources necessary to complete assignments. Assists in acquisition of resources not immediately available.
Mechanical Maintenance Personnel (STC)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Performs mechanical system repair and corrective action activities.
Mechanics (S)	Staffing Based on Event	Assembly Area/ Operational Support Center	Mechanical Maintenance Personnel	Perform repair and corrective actions as directed by the OSC Coordinator.
NSSS Support Engineer (S)	Alert through General Emergency	Technical Support Center	Engineering Coordinator	Assists Engineering Coordinator in performing engineering assessment.
Nuclear Systems Operator (S)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Performs operational activities directed by the TSC.

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TABLE 2
ERO POSITION INFORMATION

POSITION TITLE AND TYPE	ACTIVATION LEVEL	RESPONSE LOCATION	REPORTS TO	PRIMARY RESPONSIBILITIES
Offsite Monitoring Communicator (S)	Alert through General Emergency	Emergency Operations Facility	Offsite Monitoring Coordinator	Relays messages to and from offsite monitoring teams and maintains a log of team locations and reported radiological data.
Offsite Monitoring Coordinator (STC)	Alert through General Emergency	Emergency Operations Facility	Dose Assessment Specialist	Coordinates offsite monitoring and sampling during an emergency.
Offsite Monitoring/ Sampling Personnel (HP) (STC)	Alert through General Emergency	Emergency Operations Facility	Offsite Monitoring Coordinator	Performs emergency environmental sampling and monitoring as directed by the Offsite Monitoring Coordinator.
Offsite Monitoring/ Sampling Personnel (Utility) (STC)	Alert through General Emergency	Emergency Operations Facility	Offsite Monitoring Coordinator	Assists offsite monitoring/sampling personnel (HP) and drives offsite monitoring/sampling vehicle.
Operations Technician (P)	Unusual Event through General Emergency	Control Room/ Technical Support Center	SED or Emergency Operations Manager	Relieves the Control Room of NRC notification and communications responsibilities. Assists the Emergency Operations Manager. Performs Severe Accident Management Evaluator functions.
OSC Coordinator (STC)	Alert through General Emergency	Operational Support Center	Maintenance Coordinator	Directs emergency response activities performed at and by the OSC.
Radiation Protection Technician (OS and STC)	Alert through General Emergency	Operational Support Center	Radiological Controls Coordinator	Performs onsite/in-plant surveys, provides HP coverage, implements radiological exposure controls, performs personnel monitoring/decontamination.

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TABLE 2
ERO POSITION INFORMATION

POSITION TITLE AND TYPE	ACTIVATION LEVEL	RESPONSE LOCATION	REPORTS TO	PRIMARY RESPONSIBILITIES
Radiological Assistant (S)	Alert through General Emergency	Emergency Operations Facility	Offsite Monitoring Coordinator	Coordinates radiological control measures at the EOF. Issues dosimetry and tracks dose reporting for emergency response personnel.
Radiological Controls Coordinator (STC)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Directs implementation of in-plant radiation protection measures associated with Station emergency response efforts.
Raddose Operator (S)	Alert through General Emergency	Emergency Operations Facility	Dose Assessment Specialist	Operates the Raddose-V dose assessment program computer
Reactor Engineer (STC)	Alert through General Emergency	Technical Support Center	Engineering Coordinator	Analyzes reactor core and plant transient response. Provides core protection recommendations. Performs Severe Accident Management Evaluator functions.
Response Manager (P)	Unusual Event through General Emergency	Emergency Operations Facility	Chief Nuclear Officer	Provides overall direction to the emergency response organization. Authorizes notifications and protective action recommendations to the states.* Approves news releases.* Authorizes requests for industry assistance.* Primary interface with state and federal emergency response officials. *Responsibilities that cannot be delegated. (Protected: Ref. NRC IR85-32 [5])

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TABLE 2 ERO POSITION INFORMATION				
POSITION TITLE AND TYPE	**ACTIVATION LEVEL**	**RESPONSE LOCATION**	**REPORTS TO**	**PRIMARY RESPONSIBILITIES**
Security Coordinator (S)	Alert through General Emergency	Emergency Operations Facility (or site Incident Command Center for an HAB event)	Response Manager (when reporting to the EOF)	Coordinates security response actions during an emergency. Advises the Response Manager on potential security issues pertaining to an event such as tampering or sabotage of plant equipment.
Security Leader (S)	Alert through General Emergency	Technical Support Center	Site Emergency Director	Coordinates security response onsite with Technical Support Center staff
Security Personnel (S)	Unusual Event through General Emergency	Per Security Plan Procedures	Security Coordinator	Implements Security Department procedures for a declared radiological emergency.
Short Term Emergency Director (STED) (OS)	Unusual Event through General Emergency	Control Room	Site Emergency Director	Makes initial emergency classification and notifications.* Initiates activation of the emergency response organization.* Approval of protective action recommendations to the states, reclassification of the emergency, authorization of workers to exceed 10CFR20 radiation exposure limits, and overall responsibility for directing the Station emergency response until relieved by the Site Emergency Director.* *Responsibilities that cannot be delegated. (Protected: Ref. NRC IR 86-18 [01])

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TABLE 2
ERO POSITION INFORMATION

POSITION TITLE AND TYPE	ACTIVATION LEVEL	RESPONSE LOCATION	REPORTS TO	PRIMARY RESPONSIBILITIES
Site Emergency Director (P)	Unusual Event through General Emergency	Control Room/ Technical Support Center	Response Manager	Relieves the STED of overall responsibility for directing the onsite emergency response.* Assumes responsibility for emergency classification.*Authorizes notifications and protective action recommendations to the states, approves news releases and requests industry emergency response assistance until relieved by the Response Manager. * Authorizes workers to exceed 10CFR20 radiation exposure limits. *Performs Severe Accident Management Decision Maker functions. *Responsibilities that cannot be delegated. (Protected Ref. NRC IR 86-18[01])
Specialty Technical Assistant (S)	Alert through General Emergency	Technical Support Center, Operational Support Center or Emergency Operations Facility	Tech. Services Coord., Tech. Specialist Coord. or Admin Services Coord.	Called in as needed to the TSC, OSC or EOF to provide specific skills, knowledge and expertise required during an emergency.
Storekeeper (S)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Issues tools and equipment to emergency repair and corrective action teams.
Technical Assistant (STC)	Alert through General Emergency	Emergency Operations Facility	Response Manager	Coordinates technical assessment and support activities conducted from the EOF.

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TABLE 2
ERO POSITION INFORMATION

POSITION TITLE AND TYPE	ACTIVATION LEVEL	RESPONSE LOCATION	REPORTS TO	PRIMARY RESPONSIBILITIES
Technical Services Coordinator (P)	Unusual Event through General Emergency	Control Room/ Technical Support Center	Site Emergency Director	Monitors the TSC activation process and assists the Site Emergency Director in managing and coordinating onsite emergency response efforts.
Technical Specialist Coordinator (STC)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Provides assistance in the evaluation of, and preparations for, repair and corrective actions.
Training Center Staff (S)	Alert through General Emergency	Emergency Operations Facility	Technical Assistant	Assists the Technical Assistant with monitoring plant operational data.
TSC Engineer – Electrical (STC)	Alert through General Emergency	Technical Support Center	Engineering Coordinator	Assists the Engineering Coordinator with engineering assessment and technical support. Maintains TSC status boards.
TSC Engineer – Mechanical (STC)	Alert through General Emergency	Technical Support Center	Engineering Coordinator	Assists the Engineering Coordinator with engineering assessment and technical support. Maintains TSC status boards.
TSC Logkeeper (S)	Alert through General Emergency	Technical Support Center	Site Emergency Director	Maintains log and provides administrative support for the Site Emergency Director.
Work Control Supervisor – OSC (S)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Performs duties as assigned by the OSC Coordinator

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TABLE 2 ERO POSITION INFORMATION				
POSITION TITLE AND TYPE	**ACTIVATION LEVEL**	**RESPONSE LOCATION**	**REPORTS TO**	**PRIMARY RESPONSIBILITIES**
Work Control Supervisor – On-shift (OS)	Unusual Event through General Emergency	Control Room	Short Term Emergency Director (STED)	Assists the Short Term Emergency Director with implementing emergency response actions in the Control Room and initial notification of offsite authorities.
Work Control Supervisor – TSC (S)	Alert through General Emergency	Operational Support Center	OSC Coordinator	Dispatched to the TSC to report to the Maintenance Coordinator and to staff the 4-way data link in the TSC.
Work Planner – MM/MV (S)	Alert through General Emergency	Operational Support Center	Tech Specialist Coordinator	Assemble work packages for mechanical maintenance and valve repair teams deployed from the OSC as directed by the Technical Specialist Coordinator
Work Planner – ME/IC (S)	Alert through General Emergency	Operational Support Center	Tech Specialist Coordinator	Assemble work packages for electrical maintenance and instrumentation and control repair teams deployed from the OSC as directed by the Technical Specialist Coordinator.

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SUMMARY OF CHANGES

Rev. 66 (AR 02355399 January 2021)

- Table 1 -- Removed bargaining unit restrictions from the potential candidate's background from the Chemistry Coordinator, Electrical Maintenance Personnel, I&C Personnel, and Mechanical Maintenance Personnel. Revised Potential Candidates Background section for the Radiological Controls Coordinator, Junior Radiation Protection Personnel, Radiological Assistant and Offsite Monitoring Team Personnel to state "Experienced with or trained on Radiation Protection related duties".

- Moved Dosimetry Records Personnel position functions to the Radiological Assistant and eliminated the Dosimetry Records Personnel position.

Rev. 65 (AR 02291007 March 2019):

Removed Document Control Center Personnel and TSC RMD Personnel (CMP 02226221).

Removed HP6002I course from Junior Radiation Protection Technician Prerequisites.

Rev. 64:

Added Security Personnel to Table 1 which had been inadvertently deleted in a previous revision (AR 2092861).

Rev. 63:

Replaced some course numbers with qualification. Removed reference to GT4000I, Enhanced Radiation Worker (AR 1888575).

Revised to allow Engineering Coordinator, Response Manager, and Site Emergency Director to be <u>past or current</u> supervisor (AR 1928340).

Revised Assembly Area Coordinator potential candidate background.

Added Environmental Analysts which replaces the services provided by a vendor.

Rev. 62:

In Appendix A changed media center to Joint Information center, added new position EOF Access Control Personnel (AR#1721945)

Changed Table 1 Operations Technician prerequisite to read, Past or current SRO license at Seabrook Station <u>or</u> SRO certification at Seabrook Station and current operations training instructor. Also changed potential candidate background to read, Routinely engaged in operations-related activities, including operations training. (AR 1861084)

Changed Table 1 Engineering Coordinator prerequisite to read, Engineering background or degree, principal engineer or supervisor or higher.