PSNH PUBLIC SERVICE
Company of New Hampshire

SEABROOK STATION
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July 9, 1982
SBN-290
T. F. B 7.1.2

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Frank J. Miraglia, Chief
Licensing Branch No. 3
Division of Licensing

References: (a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) USNRC Letter, dated March 9, 1982, "Request for Additional Information" F. J. Miraglia to W. C. Tallman

Subject: Response to 810 Series RAI's; (Emergency Preparedness Licensing Branch)

Dear Sir:

We have attached responses to the subject RAI's which you forwarded in Reference (b).

Accompanying the RAI responses (Attachment A) are the following:

Attachment B Detailed Radiological Emergency Plan revisions and reference to the initiating RAI's

Attachment C Radiological Emergency Plan annotated pages which provide insert locations for Plan revisions (Attachment B).

The Radiological Emergency Plan will be revised in a subsequent Amendment.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

John DeVincentis
Project Manager

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Attachment A

810.1 Provide agreements with any agencies or support organizations which have a response role within the EPZ. Describe the concept of operations of each of the off-site response agencies involved in the protective action decision-making and implementation, off-site monitoring, data collection and analysis, site access control, and plant evacuee processing to demonstrate that these efforts have been coordinated with the onsite response. In addition, each step in the protective action decision-making and implementation chain (down to the local level) must be specified to demonstrate that protective action decision for the total range of protective actions (shelter and evacuation) can be made and implemented promptly (15 minutes) on a 24-hour-a-day basis.

RESPONSE: Letters of agreement will be made with the States of New Hampshire and Massachusetts. Once the agreements have been finalized, copies will be maintained in Appendix D of the revised plan.

The concept of operations of each off-site response agency will be specified in state and local plans which are subject to the FEMA review process. The protective action decision-making and implementation cha'n will be specified in state and local plans which are subject to the FEMA review process. Section 3.5 of the Seabrook Station Radiological Emergency Plan will be amended in a future revision to include a reference to the applicable sections of each state plan addressing the aforementioned issue.

810.2 Provide a block diagram that shows the interrelationships of the site response centers and duty stations of personnel.

RESPONSE: This item is addressed in Table 3.2 and Section 6.1 of the Emergency Plan.

810.3 Submit the approved state and local response plans for those governmental entities wholly or partially within the plume exposure EPZ and the portions of the Maine State Plan that address their ingestion pathway response in accordance with 10CFR50.33.

RESPONSE: Seabrook Station will submit the state/local response plans for those governmental entities specified in Table 4.3 of the plan in accordance with 10CFR50.33. The plans are presently under development and a formal submittal to the NRC will coincide with state submittal to FEMA. The Maine State Plan will be submitted to address the ingestion pathway response in accordance with 10CFR50.33.

810.4 Adjust the plume EPZ boundary to account for local response needs and capabilities in accordance with 10CFR50.33. In addition, discuss how demography, topography, land characteristics, access roads, and jurisdictional boundaries were considered.

RESPONSE: The Seabrook Station plume EPZ has been determined strictly on the basis of jurisdictional boundaries. Section 4.3, Table 4.3 of the Seabrook Station Emergency Plan identifies a list of local communities whose jurisdictional boundaries have been determined by State authorities to define the Seabrook Station plume EPZ. Seabrook Station recognizes that this plume EPZ designation is subject to future change dependent upon final agreements reached with these communities.

This item is addressed by revisions to Table 4.3 and Figure 4.7 of the Emergency Plan.

810.5 Provide letters of agreement for the Federal, local and private support agencies that provide the information set forth in NUREG-0654 Criteria A.3 and B.9. All agreements should be reviewed and certified current, and preferably dated within one year of anticipated license issuance.

RESPONSE: The Seabrook Station Radiological Emergency Response Plan will be amended in a future revision of the plan by issuing an Appendix D which will contain all letters of agreement.

The Federal Master Response Plan, as stated in Section 3.6 of the plan, ensures federal response to an emergency at Seabrook Station. No letter of agreement is needed.

As stated in Section 8.4.3 of the plan, industry support will be coordinated through the Institute of Nuclear Power Operations (INPO). No letter of agreement is needed.

All letters of agreement will be reviewed and certified in accordance with the criteria established in Section 12.3 of the plan.

810.6 Clarify who has responsibility for 24 hour manpower planning for the onsite emergency response staff.

RESPONSE: As discussed in Section 8.2.2.12, the Technical Assistant to the Emergency Director is responsible to assist the Emergency Director in planning and scheduling of resources which includes manpower. The Technical Assistant position will be manned shortly after the activation of the Long-Term Emergency Response Organization and be maintained 24-hours/day during emergency conditions that require its function.

Prior to the arrival of the Technical Assistant, the Short-Term Emergency Director and then the Near-Term Emergency Director assume the manpower planning responsibility.

810.7 Upon arrival of the Recovery Manager it is not clear whether he or the Emergency Director has the overall responsibility for the direction and control of the integrated emergency response effort. The individual having this functional responsibility should be designated as the Emergency Director.

RESPONSE: The duties of the Emergency Director, as defined in the Seabrook Station Emergency Plan, Sections 8.2.1.1 and 8.2.2.1, are clearly stated and separate from the Recovery Manager. The Recovery Manager position is filled by a senior corporate official whose responsibilities are delineated specifically to pertain to "non-emergency termination efforts", as per Emergency Plan Section 8.3.1.1, and "providing overall emergency and recovery guidance to the long-term ERO", as per Emergency Plan Section 8.2.2.1.

810.8 Clearly state that the Emergency Director or the Shift Superintendent acting as the Emergency Director has the authority and responsibility to immediately and unilaterally provide protective action recommendations to authorities responsible for their implementation. This should include recommendation for shelter and evacuation as warranted.

RESPONSE: This item is addressed by a revision to Section 10.2 of the Emergency Plan.

810.9 Provide a back-up to the Shift Superintendent to make protective action decisions in the event the Shift Superintendent cannot respond to the affected Control Room promptly.

RESPONSE: The back-up to the Shift Superintendent, should he not be able to respond promptly to the affected Control Room due to a situation beyond his control, will be the Unit Shift Supervisor of the affected unit.

Table 12.1, Station Emergency Management Training Matrix, depicts an equivalent level of emergency management training for both the Unit Shift Supervisor and the Shift Superintendent.

This item is addressed by a revision to Section 8.2 of the Emergency Plan.

810.10 Provide a STA and a communicator on the backshift in accordance with Table B-1, NUREG-0654.

RESPONSE: The PSNH licensed reactor operator training program includes the additional technical courses to satisfy the current requirement of providing a STA capability on all shifts. Each licensed senior reactor operator receives this training and therefore, a separate STA individual is not provided.

The notification/communication function designated in Table B-1 of NUREG-0654 will also be fulfilled by shift personnel. An onshift Instrumentation and Control Technician will report to the affected Control Room to assume the communicator role. The Shift Superintendent will perform all initial communicating with state and federal organizations and will authorize the notification of off-duty licensee personnel. The technician will maintain the necessary lines of communication "open" as directed by the Shift Superintendent. Procedures will address the communicator responsibilities.

This item is addressed by a revision to Table 8.1 of the Emergency Plan.

810.11 Specify the response times and expertise of the augmentation, personnel to demonstrate the 30 and 60 minute capabilities set forth in NUREG-0654, Table B-1. This should be specified down to the working level and should show the relationship between the normal job assignment titles and emergency functions, such as radiological monitoring. In addition, describe how this capability will be demonstrated (e.g., drills), maintained and implemented (e.g., beepers and duty rosters).

RESPONSE: Periodic augmentation studies will address compliance with the information contained in Table B-1 of NUREG-0654. The studies will provide information down to the working level and show the relationship between normal job assignment titles and assigned emergency functions. These studies will be made available for inspection.

A description of how we will demonstrate, maintain and implement this augmentation capability will be provided in emergency procedures currently under development.

810.12 For each transfer of the Emergency Director's functions, specify the criteria for allowing assumption of these functions (e.g., briefing of replacement) and describe how the transfer of these responsibilities will be noticed to all appropriate parties (onsite and offsite).

RESPONSE: This item is addressed by a revision to Section 8.2 of the Emergency Plan.

810.13 Specify the functional responsibilities of the Emergency Director that may not be delegated. Among these responsibilities, include the decision to notify and recommend protective action to off-site officials.

RESPONSE: This item is addressed by a revision to Section 8.2 of the Emergency Plan.

810.14 Show the duty stations (e.g., TSC) of the emergency organization members of the organization figures.

RESPONSE: This item is addressed in Table 3.2 of the Emergency Plan.

810.15 Specify who will provide corporate level interface with governmental authorities.

RESPONSE: This item is addressed by a revision to Section 8.3.1.1 of the Emergency Plan.

810.16 Provide letters of agreement for the NSSS, AE, and other utility support that contains the information set forth in NUREG-0654, Criterion B-9.

RESPONSE: Paraphrasing statements of Section 8.4.3, Seabrook Station Emergency Response Organization can be augmented by manpower and equipment support from the Yankee organization and if support is required beyond this level, additional support from other nuclear industry organizations can be requested through INPO.

This item is addressed by a revision to Section 8.4.3 of the Emergency Plan.

810.17 Provide for transfer of the responsibility for total emergency response direction from the Control Room to the TSC and finally to the EOF in accordance with the scheme in NUREG-0696.

RESPONSE: The Seabrook Station Emergency Response Organization (ERO) concept conforms to the NUREG-0696 scheme for the transfer of total emergency response direction responsibility.

The Short-Term ERO initially functions from the Control Room. With the Short-Term Emergency Director's decision to notify the Near-Term ERO, and depending upon the emergency classification, either the TSC or EOF is activated to assume total emergency response direction from the Control Room. Under the Unusual Event classification, the Near-Term ERO members man the TSC where the Near-Term Emergency Director assumes total responsibility. Under any other classification, the Near-Term Emergency Director establishes his position at the EOF and remains there until relieved by the Long-Term Emergency Director who then assumes responsibility for total emergency response direction to terminate the emergency event.

810.18 Expand the discussion of emergency response support and resources to include the information required in Criteria C.1.a, b, and c of NUREG-0654 and to request assistance directly through the Federal Radiological Monitoring and Assistance Plan. Support these arrangements by a letter of agreement attached to the plan.

RESPONSE: As described in Section 3.2, a major responsibility of the Shift Superintendent/Emergency Director is "to ensure that the NRC is notified using the Emergency Notification System (red phone)". This notification process activates the Federal Master Response Plan. If the station requires specific federal resources, this request will be forwarded through the ENS communication link.

810.19 Prepare a procedure for the dispatch of a representative to the principal offsite governmental emergency operations center, if requested, in accordance with NUREG-0654, Criterion C.2.b.

RESPONSE: Seabrook Station does not intend to dispatch a representative to the off-site governmental Emergency Operations Centers for the following reasons:

1. Two states (Massachusetts and New Hampshire) are involved and therefore Seabrook Station would have to dedicate up to six (6) individuals for this purpose. This would deplete technical personnel resources at the station.

2. Seabrook Station will provide sufficient space at the EOF for direct communication with state technical representatives if state authorities decide to dispatch representatives to the EOF.

Seabrook Station, may, during an emergency where significant potential for implementing off-site protective measures is recognized, dispatch appropriate personnel to state EOC's to ensure communications are completely comprehended. The Emergency Director retains the authority to dispatch such personnel.

This item is addressed by a revision to Section 8.5 of the Emergency Plan.

810.20 Establish Emergency Action Levels (EALS) for each initiating condition specified in Appendix 1 to NUREG-0654. The EALs should be observables (e.g., instrument readings, equipment status indicators, alarm annunciators) which are both necessary and sufficient to explicitly and uniquely characterize each emergency level.

RESPONSE: Emergency Action Levels will be developed subject to Seabrook Station design and operational features. EALs will be developed for each condition listed in Appendix A of the existing plan. The plan will be amended in a future revision to incorporate these EALs in Appendix A.

810.21 The initiating condition should include the postulated accidents in the FSAR in addition to those referenced in Item 1 above.

RESPONSE: Seabrook Station will address this question in response to RAI 810.20.

810.22 Provide a discussion of how the EALs will be integrated to Control Room operator response to demonstrate that a system has been established that will provide for rapid and accurate classification of events. This should include a description of the job aids used and a description of how this system will be tested by the Control Room staff.

RESPONSE: Section 12.2 of the Seabrook Station Radiological Emergency Plan will be amended to outline the elements of the Emergency Classification and EAL training module in a future revision to the plan.

810.23 Describe the provisions for prompt (15 minute) notification to off-site authorities responsible for protective action decision making and implementation as required by 10CFR50, Appendix E, IV.D.3.

RESPONSE: As discussed in Section 11.1, Seabrook Station has committed to notify the State Police of New Hampshire and Massachusetts within 15 minutes of emergency classification. This notification step will trigger State Police notification to State officials responsible for protective action decision making. These officials will contact the Station to be further advised of the emergency conditions whereupon a decision to implement a protective action could be issued. The administrative and physical means to implement protective actions in accordance with 10CFR50, Appendix E, IV.D.3 have not been finalized. The manner and system used for this purpose will be dependent upon final agreements reached between the State of New Hampshire, Commonwealth of Massachusetts, and PSNH. When finalized, a description of the public notification system will be included in Appendix E to the Emergency Plan.

810.24 Describe the methods for alerting, notifying and mobilizing off-duty personnel to meet the response time requirements of NUREG-0654, Table B-1.

RESPONSE: PSNH is currently pursuing the purchase and installation of an off-site radio paging system. It will be used as the primary mechanism to alert and notify the key members of the emergency response organization that are necessary to initiate a long-term emergency response. These individuals will be available for contact twenty-four (24) hours per day.

In conjunction with the radio-paging system, additional personnel will be alerted and notified via a prioritized telephone call list. The Shift Superintendent will direct Security personnel manning the Secondary Alarm Station (a 24-hour duty post) to initiate the notification.

Together, these procedures will address the response time goals of NUREG-0654, Table B-1.

Section 3.4 has been revised to provide additional detail on the personnel mobilization process.

810.25 Identify the potentially affected population in the initial notification message and provide for protective action recommendations based on plant conditions.

RESPONSE: The initial off-site notification procedure has not been finalized. Content will be in accordance with the agreement reached between the State of New Hampshire, Commonwealth of Massachusetts and PSNH.

810.26 Describe the provisions for followup emergency messages to offsite authorities, and provide formats of the initial and followup messages which include the information specified in Criteria E.3 and 4 of NUREG-0654.

RESPONSE: This item is addressed in Section 11.1 of the Emergency Plan.

810.27 Provide a complete description of the administrative and physical means for prompt alerting and notification of the public within the plume exposure pathway EPZ. Sufficient detail should be provided for evaluation against the criteria set forth in Appendix 3 to NUREG-0654. Include a schedule through operational readiness for the overall system. This should include the system used to promptly provide public information messages and how these will be coordinated among the states. The system described which involves callbacks by Public Health officials followed by contacting of State Civil Defense before local officials are contacted (those who will take protective actions) does not demonstrate prompt protective action decision-making as required by 10CFR50, Appendix E, II.D.3.

RESPONSE: As addressed in the response to RAI 810.23, an Appendix E to Emergency Plan will be added to describe the public notification system. Installation and testing of the system is scheduled for completion prior to fuel load of Unit 1.

The issues of protective action implementation and public notification system activation are subject to state planning developments, the results of which will be subject to the FEMA review process.

810.28 Provide copies of the written messages (discussed in Section 11.3) intended for public release that address a range of protective measures as set forth in NUREG-0654, Criterion E.7.

RESPONSE: Section 11.3 of the Seabrook Station Radiological Emergency Plan will be amended by including specific references to those sections of the State Radiological Emergency Response Plans of Massachusetts and New Hampshire which address these written messages.

810.29 Provide primary and backup means of communications to all the off-site authorities responsible for protective action decision-making and implementation on a 24-hour basis.

RESPONSE: Both primary and backup communications methods to off-site authorities are described in Sections 7.1 and 7.3 of the Emergency Plan.

810.30 Provide for communications with the local governments in the plume EPZ.

RESPONSE: See response to RAI 810.80.

810.31 Provide a communication link for fixed and mobile support facilities in accordance with NUREG-0654, Criterion F.2.

RESPONSE: Seabrook Station is aware of the above criterion. The Emergency Plan Implementing Procedures will provide the technique for notification of the local medical support hospital and ambulance service should a medical emergency arise at Seabrook Station.

The communications link to be used will be normal telecommunication lines from the control room to the support hospital emergency room and ambulance service dispatch center.

The ambulance service will be capable of radio communications with the hospital while enroute with a patient.

The present planning calls for use of the construction ambulance service until completion of Seabrook Station Unit 2, at which time an off-site agency arrangement will be established.

The site construction ambulance will be used as the primary medical transportation. An arrangement with a local ambulance service will be made to establish backup transportation for times when the site ambulance may not be available. At the completion of Unit 2 the local ambulance service will provide primary medical transportation.

Section 10.5.2 of the Emergency Plan has been revised to reflect the above arrangements.

810.32 Provide for a quarterly communications test with the Federal emergency response organization and States within the ingestion pathway in accordance with NUREG-0654, Criterion N.2.a. In addition, provide for monthly communication tests in accordance with 10CFR50, Appendix E, IV.E(9)(d).

RESPONSE: Our present plans are to request federal response organizations (EPA, DOE, etc.) through one federal agency which will be the NRC. Communications with the NRC are identified in our response to RAI 810.77.

Communications with the states located inside the ingestion pathway are identified in our response to RAI 810.78.

810.33 Identify the provisions for communications with DOE and the U.S. Coast Guard as set forth in Criteria F.1.c of NUREG-0654.

RESPONSE: Section 3.6 of the Emergency Plan indicates that communications with DOE will be initiated by NRC as a result of NRC notification by Seabrook Station. Communications with the U.S. Coast Guard will be coordinated by the New Hampshire Civil Defense Agency, if such action is deemed necessary.

810.34 Provide additional description of the emergency information brochures to demonstrate that the information set forth in NUREG-0654, Criterion G-1 will be supplied. In addition, provide a sample copy of the emergency preparedness information which will be provided for both the resident and transient population around the site, along with a schedule for its dissemination.

RESPONSE: The information set forth in NUREG-0654, Criterion G-1, will be contained in an emergency information brochure. This brochure will be published after specific plans for notifying the public of an emergency and the action the public should take have been formulated in coordination with local and state officials. It is anticipated that public dissemination of the brochures will be completed prior to fuel loading.

810.35 Describe the means to be used to disseminate the information such that the written material will likely be available in a residence during an emergency (e.g., phone book). In addition, describe the provision for posting information for transient populations and for providing information to special populations and facilities.

RESPONSE: This item is addressed by a revision to Section 11.3 of the Emergency Plan.

810.36 Further describe the provisions for timely exchange of information between the licensee and the State spokesperson.

RESPONSE: This item is addressed by a revision to Section 11.3 of the Emergency Plan.

810.37 Describe the provisions for dealing with rumors and public inquiries.

RESPONSE: This item is addressed by a revision to Section 11.3 of the Emergency Plan.

810.38 Provide the media with information on protective actions and their relation to possible plant conditions during the periodical media programs. Commit to conduct the media programs at least annually.

RESPONSE: This item is addressed by a revision to Section 11.3 of the Emergency Plan.

810.39 Commit to provide and post updated information for permanent and transient population at least annually.

RESPONSE: This item is addressed by a revision to Section 11.3 of the Emergency Plan.

810.40 Provide a commitment for the permanent Emergency Response Facilities in accordance with NUREG-0696 and provide sufficient information to demonstrate the facilities meet the guidance of NUREG-0696. In addition, the transfer of emergency response function as the facilities are manned should be in accordance with NUREG-0696.

RESPONSE: As described in Section 8.2 of the plan, the Seabrook Station Emergency Response Organization activation occurs over three distinct phases. This concept of operations parallels NUREG-0696 guidance.

Section 6.1 of the Emergency Plan will be revised to provide a more detailed description of the emergency response facilities when the NRC provides further guidance on the applicability of NUREG-0696.

810.41 Clearly specify the times by which the TSC and EOF will be activated and manned to demonstrate that the TSC will be activated within 30 minutes and the EOF within an hour. This should be coordinated with manpower augmentation response times.

RESPONSE: The response is the same as RAI 810.11. The plan will not be amended to incorporate the results of the augmentation studies.

810.42 Provide a list of the process, radiation, geophysical and fire assessment monitoring systems that will be used to initiate emergency measures in accordance with the EALs when established. For each instrument used in an EAL, provide its range, location, and type.

RESPONSE: As stated in Response to RAI 810.20, the plan will be amended in a future revision to incorporate EALs for the conditions listed in Appendix A. Once revised, Appendix A will list process, radiation, geophysical, and fire assessment monitoring response levels associated to specific station conditions. The range, location and type of monitoring systems which will use EAL indicators are described in the FSAR.

810.43 Provide a description of the radiological monitors and onsite laboratory facilities as discussed in NUREG-0654, Criterion H.6.b.c. In addition, discuss how these facilities will be incorporated into the emergency response assessment.

RESPONSE: PSNH will conduct a Radiological Environmental Monitoring Program. The program, outlined in Table 3.12-1 of the Seabrook Station Technical Specifications, meets, as a minimum, the NRC Radiological Assessment Branch Technical Position for the Environmental Radiological Monitoring Program.

The air sampling devices and the dosimetry associated with the program are planned to be included as off-site monitoring resources following an event requiring off-site assessment. Procedures will address their use under emergency conditions.

Regarding laboratory facilities, Seabrook Station's participation in the Yankee Mutual Assistance Plan permits access to the Environmental Laboratory and associated mobile van maintained and operated by the Yankee Nuclear Services Division. Details of their analytical capabilities are contained in Appendix B of the Emergency Plan.

On-site and near-site laboratory capabilities include a Chemistry Counting Room, Health Physics Counting Room and facilities at the Emergency Operations Facility. Gamma spectroscopy equipment is available at each location. Procedures will address their incorporation into emergency response assessments of both off-site and on-site conditions.

810.44 Provide a description of the off-site monitoring equipment in accordance with NUREG-0654, Criterion H.7.

RESPONSE: This item is addressed by a revision to Section 10.4.4 of the Emergency Plan.

810.45 Provide the equipment and supplies available at the OSC in accordance with NUREG-0654, Criterion H.9.

RESPONSE: See response to RAI 810.44.

810.46 Discuss the habitability of and access to the OSC during postulated accident conditions. In addition, provide a plant drawing showing the location of the OSC and its size.

RESPONSE: A future revision to Section 6 of the Emergency Plan will include a layout of the OSC, depicting its size and location.

In the event radiological conditions become restrictive, protective action criteria concerning center habitability specified in Table 10.3 of the Emergency Plan applies to the OSC location.

810.47 Provide a description of the emergency kits in accordance with the guidance of Criterion H.11 of NUREG-0654 to demonstrate that sufficient supplies of equipment have been provided to support the emergency support functions performed from various locations.

RESPONSE: See response to RAI 810.44.

810.48 Provide sufficient detail to demonstrate compliance with the guidance of NUREG-0654, Appendix 2.

RESPONSE: Certain details concerning compliance with the guidance of NUREG-0654, Appendix 2, are addressed in a revision to Section 6.2.3.1 of the Emergency Plan. A complete description of the operational meteorological measurements program will be provided when all aspects of the program are finalized.

810.49 Describe the provisions for coordination of field monitoring data with off-site agencies to include the location at which this will be performed.

RESPONSE: Section 6.1.8 of the Seabrook Station Emergency Plan addresses this question.

810.50 Provide the plant system and effluent parameter values that address NUREG-0654, Criterion I.1.

RESPONSE: The response is the same as RAI 810.20.

810.51 As part of the description of onsite capability and resources to provide initial and continuing assessment throughout the course of an accident, include postaccident sampling capability, radiation and effluent monitors, in-plant iodine instrumentation, and a containment monitoring. Provide sufficient detail to enable evaluation against clarification Items II.B.3, II.F.1, and III.D.3.3 in NUREG-0737. This should include a description of how these capabilities will be integrated into dose assessment, plant protective action decision-making, accident assessment, and offsite protective action recommendation processes. Include a discussion of when these various assessment actions will be performed.

RESPONSE: The final design of the post-accident sampling system, the in-plant iodine instrumentation and the effluent sampling and analysis system are not complete at this time. However, upon completion of their design, each system will be incorporated into the Emergency Plan Implementing Procedures such that information concerning source term assessment (released or contained) and on-site/off-site protective action recommendations will be made utilizing each source of data. The specifics and details of this process will be provided upon the completion of the draft Implementing Procedures.

810.52 Provide detailed information on the methods and techniques used for determining the source term. This should include the relationship between containment monitor readings and core conditions. (This should be included in the EALs.)

RESPONSE: There are two major effluent points which have been identified at the Seabrook Station: the primary vent stack and the main steam lines (through the lifting of the safety valves or the throttling of the atmospheric steam dump). Each of these effluent points contains a monitor in which its response can be correlated to the system concentration. In addition to these, high-range containment area monitors will be capable of measuring the exposure rate within the containment which can be correlated to the concentration within the containment. Each of the above systems may be considered to contain a "source term" which can be assessed with its associated monitor. Each system is further described below.

The containment monitoring system consists of a redundant channel of a General Atomic ionization chamber with a range of 10^0 to 10^7 R/hr (gamma only). Each system is Class 1E qualified. These detectors will be placed in the containment building such that the relative containment volume that each detector views will be identical, while ensuring that each detector meets the criteria of being widely separated. A time dependent conversion factor will be calculated which will enable conversion of the monitor's response (R/hr) to the total noble gas concentration (uCi/cc) in the containment building at a given time after shutdown assuming that the concentration within the containment is uniform. This conversion factor will be calculated based on the assumption that a core equilibrium mixture of fission products exists at t=0. The conversion factors will be presented in graphical form and incorporated where applicable into the Emergency Plan Implementing Procedures. It should be noted here, however, that the intent of this system <u>will not</u> be 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 containment building is not considered to be a direct effluent path to the environment since the containment enclosure building is vented to the primary vent stack. The only reliable technique for determining the absolute level of core damage is to directly measure the primary coolant fission product concentrations with consideration given to the added ECCS dilution volume. Even with this tool available however, the validity and usefulness of this information is subject to serious debate. The use and interpretation of the containment area radiation monitoring system will be included in the appropriate Emergency Plan Implementing Procedures.

The primary vent stack (PVS) effluent monitoring system will contain a "high range" noble gas monitor capable of detecting high level releases of noble gas fission products through the primary vent stack with an upper range of 10^5 uCi/cc and a lower range which sufficiently overlaps with the "normal range" noble gas monitor. This monitor will consist of an ionization chamber viewing a prescribed geometrical container (not yet designed) in which the stack exit gas will flow. This monitor's response (mR/hr) will be converted to the system concentration (uCi/cc) with the aid of time dependent conversion curves (time after shutdown) as precalculated with a gamma ray computer shielding code. The conversion curves will be provided for two initial fission product noble gas mixtures: 1) a core equilibrium mix of noble gas fission products, and 2) a coolant equilibrium mix of noble gas fission products.

The decision of the choice of the appropriate conversion curve will be made based on all information available concerning changes in the primary coolant activity concentrations (i.e., letdown monitor response, containment ARM's, sampling, etc.). The details of this process and the use of the stack monitor will be provided upon completion of the Emergency Plan Implementing Procedures.

The main steam line monitors consist of an ionization detector placed adjacent to each of the main steam lines (several inches) with remote modules. This monitor response (mR/hr) will be converted to a main steam line concentration of noble gas fission products (uCi/cc) by the use of time dependent conversion curves. Two curves will be supplied, one for each of the fission product mixtures as defined above. The curves will be calculated and used as described above for the stack monitor and incorporated into the Emergency Plan Implementing Procedures.

Section 10.1 of the Emergency Plan has been revised to reflect the above information.

810.53 Provide a further description of the dose projection methodology to allow evaluation against the criteria in NUREG-0654, Appendix 2, and Criterion I.5. This should include a description of the assumptions, conversion factors and their bases, copies of job aids (nomograms) etc. for projection doses based on containment leakage, effluent monitor readings, and field monitor results, both onsite and offsite.

RESPONSE: As indicated by the response provided in 810.52, each effluent pathway is supplied with a radiation monitor by which the system concentration may be obtained. Once the flowrate out of the system is determined, then the product of these two values would yield the total noble gas release rate (uCi/sec). This release rate value may be combined with a finite cloud gamma diffusion factor and a time dependent effective whole body dose conversion factor to determine the whole body dose rate at any distance from the site that the diffusion factor is calculated. This above approach will be incorporated into a nomogram approach in which the required input information will be: 1) time after shutdown, 2) initial fission product mixture, 3) system monitor response, 4) atmospheric stability class, 5) flow conditions out of the system, and 6) wind speed. The output information will be: 1) total noble gas release rate (uCi/sec), and 2) off-site whole body dose rate at some point close to the site (i.e., 1/2 mile). The method for determining the flow conditions out of each monitored effluent path is briefly discussed below.

The flowrate out of the primary vent stack will be monitored and applied directly.

The flow rate out of the main steam line pathway will be determined by the indication of safety valve position and steam pressure conditions.

For each system, all of the above parameters will be incorporated into the nomograms which will be provided into the Emergency Plan and Procedures where applicable.

The appropriate Emergency Plan Procedures will address that a comparison be made of the field monitor results versus the projected off-site whole body doses from effluent monitor information. It should be noted here that projected thyroid doses will only be performed when a measure of the actual iodine release rate is obtained.

810.54 Describe the methodology for determining the release rate/projected doses if any of the following are offscale or inoperable:

a. containment monitor,

b. stack monitor, or

c. meteorological instruments.

RESPONSE: It should be noted that both the containment monitoring system and the stack monitoring system are redundant systems. However, if these systems were to become inoperable, full reliance of off-site monitoring would be employed.

In the event that meteorological instrumentation becomes inoperable, weather conditions reported through local forecasts would be incorporated with stability class data derived from the observed cloud cover conditions, and this information would be incorporated into the dose projection techniques.

Emergency Plan Implementing Procedures will address the above compensating action.

810.55 Provide a description of the field monitoring capabilities that address the items set forth in NUREG-0654, Criterion I.8.

RESPONSE: Field monitoring teams are mobilized at the EOF under the direction of the Health Physicist. The monitoring teams will normally consist of two (2) trained individuals, properly equipped to obtain samples of the environmental media affected by the release (gaseous or liquid) pathway. Currently, the specific outfitting of these teams is under evaluation. Procedures will address the overall concept of team notification, assembly, dispatch, sampling activities and sample handling.

As discussed in Subsections 8.2.2.8, 8.2.2.9 and 10.1 of the Emergency Plan, assessment of radiological impact includes air, milk, local crops, water and soil sampling. Assistance will be requested from the Yankee Environmental Laboratory as necessary.

810.56 Describe the provisions to meet NUREG-0654, Criterion I.9 and provide the basis for the conclusion that the system can detect radioactive concentrations in air as low as 10-7 uCi/cc under field conditions.

RESPONSE: Seabrook Station will be procuring off-site monitoring team equipment capable of meeting the sampling and analysis requirements of NUREG-0654, Criterion I.9.

810.57 Describe the method to be used to meet Criterion I.10.

RESPONSE: A high resolution gamma spectroscopy counting system will be used to analyze environmental sample media and air samples. Where technically feasible, these measurements will be converted into dose rates and doses to the population. Gross radioactivity measurements will be used in two applications. One application will be to assign a priority system for sample analysis on the gamma spectroscopy system for all samples. The second application will be to estimate whole body dose rates and integrated doses. The results of these analyses will be applied to the formulation of an off-site protective action recommendation. The provisions described above will be incorporated in station implementing procedures.

810.58 Specify the means and time required to warn and advise persons in the owner-controlled area.

RESPONSE: This item is addressed in a revision to Section 10.4.2 of the Emergency Plan.

810.59 Describe the provisions for reassembly areas beyond the immediate area of the plant (5 miles) for use for plant evacuees if immediate evacuation of the site is required. This should include a map showing location and evacuation routes. In addition, provide for marking of in-plant evacuation routes.

RESPONSE: Reassembly areas beyond the immediate area of the station will be investigated. Location may be less than five miles from the site. The plan will be amended to incorporate details of these reassembly areas in Section 10.4.2 in a future revision of the plan. Figure 4.3 of the plan will be amended to indicate the in-plant evacuation routes.

810.60 Specify the criteria used to determine when plant evacuee monitoring is required and the criteria for allowing immediate evacuation and further monitoring and decontamination off-site. Provide for monitoring at the off-site assembly areas if on-site monitoring is not possible. This should include how evacuees will be notified to go to a reassembly area for monitoring. Specify the location of the monitoring points.

RESPONSE: Table 10.3 will be amended to specify the criteria which determines when plant evacuee monitoring is required. Depending upon the final decision concerning off-site reassembly areas, the plan will be amended to specify the guidelines concerning monitoring at these locations.

810.61 Provide a description of the decontamination provisions and their relationship to evacuee monitoring points in accordance with NUREG-0654, Criterion J.4.

RESPONSE: Section 10.4.2 states that all non-essential personnel are evacuated from the station under a Site Area or General Emergency Condition. Section 10.4.3 describes the decontamination capability established within the station.

Any revision to the plan concerning this emergency element will be dependent upon the final determination made in conjunction with RAI 810.59.

810.62 Specify that accountability within 30 minutes is the goal of the program.

RESPONSE: This item is addressed by a revision to Section 10.4.1 of the Emergency Plan.

810.63 Provide for recommending both shelter and evacuation of offsite officials as soon as conditions that warrant such measures are identified.

Provide criteria for recommending protective action that take the following into consideration.

a. indications of potential or actual core/containment conditions (Site Area/General Emergency EALs) that warrant taking offsite protective actions and their timing in relation to the time required to take protective actions, (In addition to recommending protective actions based on projected doses) and

b. offsite factors (evacuation times/special facilities/shelter/meteorology) that will influence the effectiveness of the protective actions and

c. using key-hole approach (do not just recommend protective actions downwind).

RESPONSE: Specific details concerning protective action recommendations to the public will be formulated in conjunction with the appropriate state agencies prior to the completion of the EAL's.

It is felt that the development of protective action recommendations based on "potential" plant conditions may have serious and possibly non-beneficial impacts if not carefully balanced with the risks and benefits of such actions. The interpretation of a "potential condition" may have a great variability among a similar group of individuals. The final product of the protective action recommendation formulation will consider off-site factors that may impact on the effectiveness of its implementation. The protective action recommendation formulation will be discussed in detail with the appropriate state officials.

810.64 Provide updated evacuation time estimates that address the criteria in NUREG-0654, Appendix 4 and integrate them into the protective action decision-making methods.

RESPONSE: Appendix C of the Seabrook Station Radiological Emergency Plan provides the evacuation time estimates for the Seabrook "plume exposure" EPZ. Appendix 4 of NUREG-0654 states: "... the evacuation time estimates should be updated as local conditions change (e.g., change in type or effectiveness of the public notification system)". Since the local conditions in the Seabrook "plume exposure" EPZ have not changed since the submittal of Appendix C to the Commission, no further update of this information is required.

The station protective action recommendation criteria could address the use of evacuation time estimates, but the manner in which these time estimates can be applied is still unclear at this time.

810.65 Provide a map that shows the information set forth in NUREG-0654, Criterion J.10.a.

RESPONSE: The plan will be amended to address Criterion J.10.a.

810.66 Provide the information specified in NUREG-0654, Criterion J.10.m.

RESPONSE: The response depends upon the final agreements reached with the states concerning the response to RAI 810.63.

810.67 Include the emergency exposure guidelines for individuals involved in assessment actions, first aid, personnel decontamination, ambulance service, and medical treatment.

RESPONSE: The management of PSNH and Seabrook Station are committed to keeping occupational and emergency exposures to station staff and support personnel ALARA.

In the event an emergency involving high levels of exposure takes place, the Emergency Director will be the only management person capable of authorizing exposures above the federal exposure limits. The Emergency Director will base this authorization decision on the guidance of the Seabrook Station Emergency Plan, Section 10.3 and Table 10.2.

The concept of assignment of emergency limits to specific work groups, in advance, as this RAI implies, is felt to be an unmanageable and unrealistic task.

The exposure guides of Table 10.2 of the Emergency Plan are based on NCRP recommended emergency exposure limits, and no further breakdown of the limits is considered necessary.

810.68 Describe the onsite contamination control measures for limiting area access, drinking water and food supplies, and the quantitative criteria for permitting return to areas and items to normal use.

RESPONSE: As discussed in RAI 810.70 Response, action levels are established above which decontamination will be required or use restrictions will be implemented. These levels may be elevated during emergency response in accordance with the referenced procedural subjects. During recovery and thereafter, radiation protection program procedures apply and are adhered to.

Since only sources and supplies known to be radiologically state would be utilized, no special consideration is deemed necessary for contamination control of on-site drinking water and food supplies.

810.69 Describe the capability for decontaminating personnel evacuated to off-site locations including provisions for extra protective clothing and decontaminants suitable for the contamination expected with particular attention to radioiodine contamination of the skin.

RESPONSE: As described in response to RAI 810.70, station emergency plant implementing procedures will address the station decontamination capability. A section of these procedures will address decontamination of station evacuees. No special provisions will be described concerning radioiodine contamination of the skin.

810.70 Specify action levels for emergency decontamination, and means of decontamination of personnel wounds, supplies, instruments and equipment.

RESPONSE: The Emergency Plan, Section 10.4.3, specifies the personnel contamination action level, greater than or equal to 1000 dpm/100 cm^2 of mixed beta/gamma contamination, which determines at what point personnel decontamination is required.

There will be emergency plan implementing procedures pertaining to decontamination. They will address the following subjects:

1. Personnel monitoring and decontamination, and

2. Equipment, vehicle and area monitoring and decontamination.

These procedures will meet the guidance of NUREG-0654, Criterion K.5.

810.71 Describe how the radiation protection program implemented during emergencies will differ from the normal program and how these measures will be announced to onsite personnel.

RESPONSE: The normal Radiation Protection Program is currently under development. However, the radiation protection program implemented during emergencies is expected to differ from the normal program. Procedures will address these differences. Some example expected differences include:

1. Radiation protection personnel will accompany repair teams and provide specific radiation protection direction and requirements based on observed radiological conditions;

2. Protective clothing will be prescribed based upon potential conditions more frequently than actual conditions;

3. Respiratory protection equipment will be required to be worn in unsampled areas within the contaminated portion of the station except where they restrict rapid performance of tasks under life threatening dose rates;

4. Exposure limits will differ as described in Table 10.2 of the Emergency Plan; and

5. Contamination controls will differ such as protective clothing requirements, posting, etc.

In addition to the duties and responsibilities designated in emergency procedures, the Emergency Director will disseminate to appropriate emergency response facility managers/coordinators particular radiation protection requirement changes.

810.72 Provide letters of agreement for medical and ambulance support that delineate the items specified in NUREG-0654, Criterion B.9.

RESPONSE: The response is the same as RAI 810.5.

810.73 Provide a further description of the first aid facilities to include the supplies, layout, capacity, and access to decontamination capabilities.

RESPONSE: Details of the first aid facilities will be provided in a future revision of Section 10.5.1 of the Emergency Plan. The information requested is not completely available at this time.

810.74 Describe general plans for re-entry and recovery.

RESPONSE: Section 8.3.2 describes the general objectives established for the recovery organization. Section 8.3.1 describes the concept of operations. Section 8.3 describes the criteria for making a transition from an emergency response organization to a recovery organization.

Normal access and control measures for the station would resume at the discretion of the Recovery Manager and/or Emergency Director. Station exposure control criteria will govern all such decisions.

810.75 Describe the authority and responsibility of the key members of the recovery organization (in addition to the Recovery Manager). This should include technical staff with responsibilities to develop, evaluate and direct recovery and reentry operations. In addition, specify the specific criteria by which emergency classification will be downgraded.

RESPONSE: The recovery organization's concept of operation will parallel that of the Long-Term Emergency Response Organization. As stated in Section 8.3.1.2 of the plan, the activities of the Recovery Manager will be directly supported by members of the Corporate Nuclear Production staff, as well as members of the Seabrook Station Training Center staff. Functional responsibilities of the Recovery Manager's immediate staff will be addressed by procedure.

De-escalation criteria for transitions between emergency classes will require (1) extensive review of plant parameters and/or off-site radiological conditions in conjunction with pre-established Emergency Action Levels; (2) review of station conditions with off-site authorities; and (3) concurrence by the off-site authorities prior to implementing de-escalation.

De-escalation from an emergency phase to a recovery phase will require satisfying the following criteria:

1. The reactor is shutdown and criticality controls are in effect;

2. The core is being adequately cooled;

3. The fission product release has been controlled;

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; and

7. The state officials agree with the Recovery Manager that station conditions require no further protective action off-site.

It should be noted that there are certain emergency conditions which may not require the plant to be shutdown.

Section 9.3 has been added to the Emergency Plan to include the above information.

810.76 Specify the means for informing members of the response organization that the emergency class has been downgraded or that the recovery organization is in effect. Also discuss how members of the emergency response organization will be informed of any changes in the emergency chain of command.

RESPONSE: This item is addressed by the addition of Section 9.3 to the Emergency Plan.

810.77 (7.6) Communications with the NRC should be tested monthly in accordance with paragraph E.9.d of Appendix E to 10 CFR Part 50.

RESPONSE: As identified in Subsection 7.6 of the Seabrook Station Radiological Emergency Plan two (2) dedicated lines of communication with the NRC will be maintained. The Emergency Notification System will be tested daily. The Health Physics Network will be tested on a monthly basis.

810.78 Communications with the States within the ingestion pathway should be tested quarterly.

RESPONSE: Discussions with the New Hampshire Civil Defense Agency have indicated that their Agency will notify the appropriate Maine State Agency of any accident involving Seabrook Station. Communications to be used for the notification will be outlined in the New Hampshire State Radiological Response Plan which will include the testing of the system.

810.79 Include the U.S. Coast Guard in the Communications drill with Federal response organizations.

RESPONSE: Discussions with the New Hampshire and Massachusetts Civil Defense Agencies have indicated that their Agencies will notify the U.S. Coast Guard since the U.S. Coast Guard will be working for the States. Communications to be used for the notification will be outlined in the New Hampshire and Massachusetts Radiological Response Plans which will include the testing of the system.

810.80 Communications with local response organizations should be tested annually.

RESPONSE: Discussions with the New Hampshire and Massachusetts Civil Defense Agencies have indicated that communications will be established from their Agencies to the local response organizations. Communications to be used for notification will be outlined in the New Hampshire and Massachusetts Radiological Response Plans which will include testing of the system on an annual basis.

810.81 The communication drills should test the aspect of understanding of message content.

RESPONSE: This item is addressed by a revision to Section 12.1.2.1 of the Emergency Plan.

810.82 The radiological monitoring drill should include communication, recordkeeping, and interface with offsite monitoring efforts.

RESPONSE: This item is addressed by a revision to Section 12.1.2.4 of the Emergency Plan.

810.83 The annual health physics drill should include simulated post-accident sampling (simulated elevated samples) and the use of these results in dose projections.

RESPONSE: This item is addressed by Section 12.1.2.5 of the Emergency Plan.

810.84 The annual exercise should simulate radiological releases which would require off-site protective measures. The annual exercise scenario should be varied to test all the major elements of plans and preparedness every 5 years. In addition, the provisions should be made to start an exercise between midnight and 6:00 a.m. once every 6 years. Some exercises should be unannounced.

RESPONSE: This item is addressed in a revision to Section 12.1.3 of the Emergency Plan.

Seabrook Station cannot commit other organizations to conduct an exercise between the period 6:00 p.m. and midnight and midnight and 6:00 a.m. Starting times and pre-notification for exercises have to be agreed upon by participating organizations.

810.85 Discuss the mix of structured and less-structured aspects of the exercise program which will allow free play for decision making during drills and exercises.

RESPONSE: This item is addressed in a revision to Section 12.1.3 of the Emergency Plan.

810.86 Indicate that the training for medical support organizations who may enter the site will include site access procedures and the identity of the onsite individual who will control their activities.

RESPONSE: An emergency plan training procedure and associated manual are under development and will be available for inspection after completion. The emergency training program will be summarized using the concept of a master matrix. One axis of this matrix will define the emergency positions and homogeneous groups of emergency support personnel. The other axis will list individual training subjects that cover the primary emergency functions performed by the emergency positions and support groups.

Each training subject is intended to be represented by a separate training module. Each module will consist of a title, statement of training objective(s), description of activity, training materials required, and performance evaluation criteria and/or technique(s).

The training department at Seabrook Station will maintain documentation of all emergency training in accordance with department procedures.

Table 12.3 has been added to the Emergency Plan to summarize the State/Local Emergency Support training that is included in the above training program. It includes medical support (ambulance) organization training in site access procedures and organizational control.

810.87 Describe the provisions in the training program for offsite police and the onsite security force.

RESPONSE: The provisions in the training program for off-site police are addressed in Table 12.3, discussed in RAI 810.86 response. Table 12.2 of the Emergency Plan currently addresses the training program provisions for the on-site security force.

810.88 Indicate that the training for local fire department support will include who will control fire fighting efforts following arrival of off-site assistance. In addition, if there is a mutual aid agreement for fire support, the officers of these departments should also be trained.

RESPONSE: The provisions in the training program for local fire department and mutual aid support are addressed in Table 12.3, discussed in RAI 810.86 response.

810.89 Commit that each member of the plant staff who may be assigned an emergency function will annually demonstrate their ability to perform those emergency tasks that are not part of their normal plant functions.

RESPONSE: This item is addressed by Section 12.2 of the Emergency Plan.

810.90 Provide training to the offsite officials responsible for protective action decision-making on protective actions to be recommended and their relationship to plant conditions.

RESPONSE: This item is addressed by a revised Section 12.2.3 in the Emergency Plan, and the inclusion of Table 12.3, discussed in response to RAI 810.86.

810.91 Provide training to the following:

- o corporate emergency support
- o rescue personnel
- o personnel responsible for 24 hour manpower planning
- o control room communicator
- o personnel responsible for transfer to Alternate EOF
- o technical support personnel in,
  - accident conditions
  - corrective response, and
  - off-site impact of corrective action

RESPONSE:

- Corporate emergency support training is addressed by a revision to Section 12.2.4 of the Emergency Plan.

- Rescue personnel training is addressed by Table 12.2 of the Emergency Plan.

- 24-hour manpower planning, which is assigned to the Technical Assistant to the Emergency Director, is addressed by Table 12.1 of the Emergency Plan.

- Communicator training is addressed by Table 12.2 of the Emergency Plan.

- EOF transfer training is addressed by Table 12.2 under "Notification and Mobilization Procedures" of the Emergency Plan.

- Technical support training is addressed by a revision to Table 12.1 of the Emergency Plan.

810.92 All members of the recovery organization with key functions should be trained.

RESPONSE: This item is addressed by a revision to Section 12.2.4 of the Emergency Plan.

810.93 Training of rescue/corrective teams should include training on how to perform under accident conditions.

RESPONSE: This item is addressed by a revision to Section 12.2.2 of the Emergency Plan.

810.94 Provide annual training to all plant personnel on their expected response during emergencies.

RESPONSE: This item is addressed by a revision to Section 12.2 of the Emergency Plan.

810.95 Describe the provisions for documenting the training program.

RESPONSE: This item is addressed by a revision of Section 12.2 of the Emergency Plan.

810.96 Provide training for the individuals responsible for the planning effort.

RESPONSE: Individuals responsible for the planning effort at the station receive appropriate training through programs conducted at the station and at off-site locations.

810.97 Identify, by title, the individual with overall authority and responsibility for radiological emergency planning (Emergency Planning Coordinator) and identify the individual responsible for updating and coordinating the plan with other response organizations. This should include identification of an onsite individual with responsibility for emergency planning.

RESPONSE: During emergency plan and procedure initial development, responsibilities for emergency planning are distributed among organizations related to the construction effort. These organizations include: Public Service Company of New Hampshire (Nuclear Projects, Production) and Yankee Atomic Electric Company (Projects, Environmental Engineering). The PSNH Executive Vice President - Engineering and Production has overall authority on unresolved matters.

Once operational, emergency planning coordination responsibilities will be assumed by a Health Physics Technical Assistant assigned at the site. Section 12.5 has been added to the Emergency Plan to describe the functions of this position.

810.98 Provide a detailed listing of support plans and procedures that will support or be used to implement the plan.

RESPONSE: Upon completion of all state and local planning, an appendix will be added to the Seabrook Station Emergency Plan containing a listing of all supporting plans and procedures.

810.99 Provide a cross-reference to criteria in NUREG-0654.

RESPONSE: Criterion P-8 of NUREG-0654 states: "Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to those criteria." PSNH submitted the Seabrook Station Radiological Emergency Plan to the NRC for review in conjunction with NUREG-0654. The NRC has concluded its initial review by filing a series of Requests for Additional Information (RAI's), concerning compliance with the NUREG-0654 criteria, with PSNH. PSNH considers this review process as sufficient documentation of Seabrook Station Radiological Emergency Plan compliance with the NUREG-0654 criterion (P-8) and, therefore, no cross-reference section will be maintained as a portion of the plan.

810.100 Provide for an independent audit in accordance with NUREG-0654, Criterion P9.

RESPONSE: This item is addressed by a revision to Section 12.3 of the Emergency Plan.

810.101 Provide for quarterly updating of telephone numbers.

RESPONSE: This item is addressed by a revision to Section 12.3 of the Emergency Plan.

Attachment B

CHANGES TO THE SEABROOK STATION RADIOLOGICAL
EMERGENCY PLAN RELATIVE TO RAI RESPONSES
7/9/82

Change No.	Emergency Plan Revision
1	In response to RAI 810.04:

o Revise the second paragraph of Section 4.3, page 4-3 to read:

In accordance with the recommended planning bases, Seabrook Station has defined two Emergency Planning Zones (EPZ). The plume exposure EPZ, shown in Figure 4.7, is an area designated by the jurisdictional boundaries of those communities which are within a radial distance of 10 miles from the Station site. 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 PAG levels outside the zone; (2) that detailed planning within this area would provide a substantial base for expansion of response efforts in the event that this proved necessary; and (3) that planning within this area recognizes all the jurisdictional restraints imposed by the zone designation.

o Revise Table 4.3 to reflect the following changes:

- Change the title to "Municipalities Within Seabrook Station's 'Plume Exposure' Emergency Planning Zone"

- Insert the following line after Newfields - NH:

  *New Castle - NH SSW

- Asterisk the community of Haverhill and include the following footnote explaining the asterisk:

  (*) - The inclusion of New Castle, NH and Haverhill, MA into the "plume exposure" EPZ is uncertain at this time.

o Revise Figure 4.7 of the plan to reflect the local boundary markings as the shape of the EPZ. Make it a solid line. Since New Castle, NH and Haverhill, MA are questionable EPZ communities, their boundaries should be distinguished by a different marking.

2 In response to RAI 810.08:

o The first sentence of Section 10.2 on page 10-2 should be changed to read:

"For accidents that result in airborne radioactivity releases, projected whole body dose rate estimates at the site boundary will be issued to those off-site authorities responsible for protective action decision making".

- o Modify the second sentence of Section 10.2 to delete the phrase "will initially" and insert the phrase "has the authority and responsibility to" after the word "Director".

- o Delete the phrase "further instruction" and insert "otherwise instructed" after word "until" in the second sentence of Section 10.2.

3 In response to RAI 810.09:

- o Paragraph 1 of Section 8.2 on page 8-1 will be changed to state the following:

  Should the Shift Superintendent be unable to respond to the affected Control Room in a prompt manner, the Unit Shift Supervisor will assume the duties and responsibilities of the Short-Term Emergency Director.

4 In response to RAI 810.10:

- o Delete the "Warehouse & Document Control Center Coverage" section from Table 8.1.

- o Delete the information provided under the "I&C Technician" section of Table 8.1 and replace it with the following:

I&C Technician (one reports to the Control Room)

1. Assumes the duties of the "communicator".

2. Maintains open communication lines as directed by the Shift Superintendent.

I&C Technician (one reports to the OSC)

1. Provides assistance to the OSC Coordinator in defining system failures.

- o Delete the Warehouse and Document Control Center boxes from Figure 8.2.

Change No.

Emergency Plan Revision

- Revise Item 3 in Section 9.2.1, page 9.2 to state the following:

  On-duty operating and selected station personnel will assume the duties specified in Table 8.1 as directed by the Shift Superintendent;

5 In response to RAI 810.12 and 810.13:

- Revise Section 8.2, second paragraph as follows:

  Immediate emergency actions, as described in Table 8.1, are taken by the operating shift (Figure 8.2), which is considered the Short-Term Emergency Response Organization (ERO). Under this concept of operations, the Shift Superintendent assumes command of the Short-Term Emergency Response Organization under the title of the Emergency Director. The Emergency Director is charged with certain functional responsibilities which cannot be delegated to any member of the ERO. These responsibilities include:

  1) the decision to classify and declare an emergency;

  2) the decision to notify and recommend appropriate protective actions to off-site authorities;

  3) the direction of Station staff during the plant mitigation stage of an emergency; and

  4) the decision to implement the emergency exposure criteria, as per Section 10.3.

  The initial response actions of the Short-Term ERO trigger the activation on the Near-Term ERO, the Long-Term ERO and two (2) off-site ERO's (Corporate and Nuclear Services Division). This augmentation scheme requires a transfer of the Emergency Director's functions to incoming station management personnel. Whenever such a transfer is required, the outgoing Emergency Director will fully brief his replacement on the status of the affected unit, accident mitigation and corrective actions taken to date, the status of the ERO, and the protective action recommendations, if any, given to the off-site authorities to date.

  Upon completion of the briefing, the outgoing Emergency Director, having relinquished his command to his replacement, will notify all appropriate parties, both on-site and off-site, of this transition."

Change No.	Emergency Plan Revision
6	In response to RAI 810.15:

- Revise Section 8.3.1.1, page 8-17, first paragraph, Item 1 as follows:

  1) Relieve the Emergency Director of any responsibilities not directly related to emergency termination efforts, including direct responsibility for interface with governmental authorities;

- Insert the following statement prior to the last sentence in the first paragraph of Section 8.5:

  The Recovery Manager will act as the principal spokesman when government requests for information out of the scope of this radiological interface are made.

7 In response to RAI 810.16:

- Add the following statement to the end of Section 8.4.3 on page 8-19:

  The Recovery Manager and/or the 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 the appropriate 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 the existing station procedures while completing their activities.

8 In response to RAI 810.19:

- Start a new paragraph after the fourth sentence in Section 8.5 and insert the following statement as the beginning of the next paragraph:

  Seabrook Station will not dispatch a representative to any of the principal State Emergency Operation Centers (EOC's) during the initial stages of an emergency as this would deplete station technical personnel resources. However, the Emergency Director retains the authority to dispatch appropriate personnel to the State EOC's to ensure that communications are completely comprehended. Dependent upon the level of Emergency each 'plume exposure' EPZ state would dispatch State representatives to the Station EOF for first hand emergency information and assessment. The Emergency Coordinator will coordinate all radiological...

Change No.	Emergency Plan Revision

9 In response to RAI 810.24:

- In Section 3.4, page 3-3, insert the following statement:

  This paging system will be used as the primary mechanism to alert and notify the key members of the Emergency Response Organization that are necessary to initiate a long-term emergency response.

  In conjunction with the radio-paging system, additional personnel will be notified by Station Security personnel in accordance with a prioritized telephone call list.

  Selected Nuclear Services Division personnel will be equipped with pagers. Mobilization of this support organization through activation of the NSD radio paging system is the duty of the Station Security.

10 In response to RAI 810.27:

- Add the following sentence to Section 11.2, page 11-2:

  Appendix E of the plan will describe the Seabrook Station Emergency Public Notification System. Installation and testing is scheduled for completion prior to fuel load of Unit 1.

- Insert the Appendix E Title Page and Table of Contents shown below:

Appendix E

Seabrook Station Emergency Public Notification System*

Table of Contents

3. System Design Established by EPZ Community

   a. Siren System
   b. NOAA National Weather Service Radio
   c. Mobile Public Address System

4. System Test Results

5. Maintenance of the System

* This section will be included in a future revision to the Seabrook Station Radiological Emergency Plan.

11 In response to RAI 810.31:

- Delete the first sentence of Section 10.5.2 on page 10-6 and insert the following statements:

  The site construction ambulance will be used as the primary medical transportation capability. An arrangement with a local ambulance service will be made to establish back-up transportation for those times when the site construction ambulance may not be available.

  At the completion of Unit 2, the local ambulance service will provide the primary medical transportation capability. Each ambulance service will be capable of radio communications with the hospital while enroute with a patient. Normal telecommunication channels will be used in notifying the ambulance service dispatch center.

- Use the second sentence of Section 10.5.2 as a new paragraph.

- Delete the word "The" and replace it with the word "All" in the second sentence of Section 10.5.2.

12 In response to RAI 810.35 and 810.39:

- Section 11.3, page 11-3 should be modified where indicated by the following statement:

  These Emergency Plan brochures will be mailed to each residence, institution and facility within the plume exposure EPZ. Notices and instructions on how to obtain the brochures will be contained in phone books, utility bills, travel guides and other similar regular publications, and periodically in newspapers and magazines with local distribution. In addition, basic instructions on actions to be taken in case of an emergency will be distributed to all

facilities that service transients so that this information can be posted or distributed. Updated information, if available, will be distributed in the same manner on an annual basis.

- o The following sentence should initiate a new paragraph.

13 In response to RAI 810.36 and 810.37:

- o Insert the following statement in Section 11.3, page 11-2:

  Space and facilities will be available in the Media Center for the State and Federal representatives. Media Center staff will take all the steps it can to issue timely and accurate news bulletins on the conditions at the Station.

  PSNH corporate personnel will monitor all media elements for erroneous information concerning accident conditions, and as misinformation is recognized, corrective action will be taken.

  Public inquiries, whether by phone call, direct contact or letter will be dealt with by personnel at the Corporate Office in Manchester, New Hampshire. Special telephone numbers will be assigned and publicized for this purpose.

- o The next sentence should start a new paragraph.

14 In response to RAI 810.38:

- o Change the word "periodically" to "annually" in the first sentence of the second paragraph on page 11-3.

- o Insert the following statement as indicated in the second paragraph on page 11-3:

  "..., and a review of State protective action criteria and its relation to station conditions."

15 In response to RAI 810.44, 810.45 and 810.47:

- o Delete the last sentence in Section 10.4.4 and insert the following statement:

  Appendix F will provide a list of emergency equipment by center location.

- o Insert the Appendix F Title Page and Table of Contents shown below:

Change No.

Emergency Plan Revision

Appendix F

Emergency Equipment Checklists*

Table of Contents

I. Control Room Emergency Supplies
II. TSC Emergency Equipment Checklist
III. OSC Emergency Equipment Checklist
IV. EOF/RC Emergency Equipment Checklist
V. Off-Site Monitoring Team Equipment Kit Checklists
VI. Local Hospital Support Equipment Kit Checklist

* Each section identified in this Appendix will be included in a future revision to the Emergency Plan. Each section will review the general categories of emergency supplies at the designated center location, specifically the number and type of protective equipment, communication equipment, radiological monitoring equipment, and emergency supplies available at each location.

16 In response to RAI 810.48:

o Delete the fourth and fifth sentence of Section 6.2.3.1 and insert the following statements:

It is planned that the existing meteorological tower and instrumentation will be used during the operational phase of the Seabrook Station. In addition, a 10m backup tower instrumented with wind speed and direction is planned to be located approximately 300 feet SSE of the existing tower prior to station operation. The meteorological data from both the primary and backup tower will be scanned and recorded as 15-minute averages by the plant's process computer. Strip chart recorders will continue to serve as a backup source of data.

A Class A dispersion model will be available on a plant computer to produce initial transport and diffusion estimates for the plume exposure Emergency Planning Zone. The model shall use automatically supplied meteorological data from the primary monitoring system to produce plume dimensions and position, location and magnitude of the peak relative concentration, 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 and accumulative sector average doses will also be available. The model will

have the graphics capability of drawing relative concentrations and dose isopleths over a background map of the site.

A complete description of the operational meteorological measurements program will be provided when all aspects of the program are finalized.

17. In response to RAI 810.52:

- o Delete the present title listed for Section 10.1 and replace it by the following title:

  "Radiological Accident Assessment Systems and Techniques"

- o Insert the following paragraphs after this section title:

  There are two major effluent points which have been identified at the Seabrook Station: the primary vent stack, and the main steam lines (through the lifting of the safety valves or the throttling of the atmospheric steam dump). Each of these effluent points contains a monitor in which its response can be correlated to the system concentration. In addition to these, high-range containment area monitors will be capable of measuring the exposure rate within the containment which can be correlated to the concentration within the containment. Each of the above systems may be considered to contain a 'source term' which can be assessed with its associated monitor.

  The containment monitoring system consists of a redundant channel of a General Atomic ionization chamber with a range of 10^0 to 10^7 R/hr (gamma only). Each system is Class 1E qualified. A time-dependent conversion factor will be calculated which will enable conversion of the monitor's response (R/hr) to the total noble gas concentration (uCi/cc) in the containment building at a given time after shutdown assuming that the concentration within the containment is uniform. This conversion factor will be calculated based on the assumption that a core equilibrium mixture of fission products exists at t=0. The conversion factors will be presented in graphical form and incorporated where applicable into the Emergency Plan Implementing Procedures. It should be noted here, however, that the intent of this system will not be 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 primary vent stack (PVS) effluent monitoring system will contain a 'high-range' noble gas monitor capable of detecting high level releases of noble gas fission products through the primary vent stack with an upper range of 10^5 uCi/cc and a lower range which sufficiently overlaps with the 'normal range' noble gas monitor. This monitor will consist of an ionization chamber viewing a prescribed geometrical container in which the stack exit gas will flow. This monitor's response (mR/hr) will be converted to the system concentration (uCi/cc) with the aid of time-dependent conversion curves (time after shutdown) as precalculated with a gamma ray computer shielding code. The conversion curves will be provided for two initial fission product noble gas mixtures: 1) a core equilibrium mix of noble gas fission products, and 2) a coolant equilibrium mix of noble gas fission products.

The main steam line monitors consist of an ionization detector placed adjacent to each of the main steam lines (several inches) with remote readout modules. This monitor response (mR/hr) will be converted to a main steam line concentration of noble gas fission products (uCi/cc) by the use of time-dependent conversion curves. Two curves will be supplied, one for each of the fission product mixtures as defined above.

18 In response to RAI 810.58:

o Insert the following paragraph at the beginning of Section 10.4.2:

"Under all Station emergency conditions, individuals in the owner-controlled area will be warned by either audible or visible signals. Public address announcements, made by the affected control room personnel, will provide emergency instruction to those personnel within the security protected area as well as the construction area. Visitors or those in transit within the owner controlled area will be advised by the most appropriate means. It has been estimated that the complete warning and advisement process will take approximately 15 minutes."

Change No.	Emergency Plan Revision

19 In response to RAI 810.62:

- Insert the following sentence in Section 10.4.1, after the first sentence of paragraph one:

  "The goal of this system is to insure that personnel accountability could be accomplished within 30 minutes of the emergency declaration."

20 In response to RAI 810.75 and 810.76:

- Create a new Section 9.3 and title it as follows:

  "Emergency De-Escalation and Termination Criteria"

- Insert the following paragraphs:

  Declaration and classification of an accident condition will require that Station operation staff recognize that pre-established EALs associated with an emergency condition have been reached or exceeded. The classification system defined in Appendix A of this plan will provide 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 (1) an extensive review of plant parameters and/or off-site radiological conditions in conjunction with the pre-established EALs; (2) review of station and off-site conditions with off-site authorities; and (3) concurrence by the off-site authorities as to the appropriate time frame required to implement de-escalation.

  De-escalation from an emergency phase to a recovery phase will require satisfying the following criteria:

  1. The reactor is shutdown and criticality controls are in effect;

  2. The core is being adequately cooled;

  3. The fission product release has been controlled;

  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; and

7. State officials agree with the Recovery Manager that station conditions require no further protective action off-site.

When station conditions either allow a de-escalation in the emergency class or require a transition from an emergency to a recovery phase, the Emergency Director will direct the Long-Term ERO to take certain response actions prior to implementing any change. These response actions include:

1. Notification to all Station emergency management personnel of the pending change;

2. Notification to appropriate off-site authorities of the pending change;

3. Notification to the corporate support services of the pending change;

4. Coordination of media releases concerning the transition; and

5. Announcement of the transition over the station page system.

When station conditions allow a transition from the emergency phase to the recovery phase, the Recovery Manager will hold a Station emergency management meeting to discuss the organizational structure and the associated assignments required to implement the recovery phase.

21 In response to RAI 810.77:

o Revise the second paragraph of Section 7.6 to include the following sentence:

The HPN system will be tested on a monthly basis.

22 In response to RAI 810.81:

o Insert the following sentence after the first sentence in Section 12.1.2.1:

Included in the scope of these drills is the aspect of understanding message content (i.e., familiarity with station jargon).

Change No.	Emergency Plan Revision
23	In response to RAI 810.82:

o Change the second sentence of Section 12.1.2.4 to read:

These drills will include collection and analysis of airborne sample media, communications, recordkeeping and, if feasible, interface with other off-site monitoring efforts.

24 In response to RAI 810.84:

o Change the third sentence of Section 12.1.3, page 12-2 to read:

The scenario will be approved by the Station Manager or his designated representative.

o Delete the fifth sentence of Section 12.1.3, page 12-2 and replace it with the following:

Within a five-year period, the scenario content will be varied to test all the major elements of the emergency plan program. In general, the scenario will simulate an emergency condition and sequence that would call for the mobilization of the off-site authorities, require the recommendation of off-site protective measures, and allow for evaluation of off-site plans and the integration with the Station response.

o Add the following paragraph to the end of Section 12.1.3:

Seabrook Station cannot commit other organizations to conduct an exercise between the period 6:00 pm to midnight and midnight to 6:00 am. Starting times and pre-notification for exercises have to be agreed upon by participating organizations.

25 In response to RAI 810.85:

o Add to the end of Section 12.1.3 the following paragraph:

Seabrook Station exercise program will be structured with sufficient flexibility to allow free play for decision-making processes during exercises and drills. The exercise scenario package will identify a specific accident sequence, set of input messages, and a set of procedural response actions which parallel the accident sequence. The exercise audit organization will receive instructions to recognize specific areas where Station response may deviate from procedural response. The exercise audit organization may: (1) restrict player action if the response threatens

the appropriate 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.

Specific exercise elements which allow free play in the decision-making process during exercises include:

1. Exposure control actions;

2. Manpower augmentation actions;

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

4. Recommendation of protective actions; and coordination and communication with off-site authorities.

26 In response to RAI 810.86, 810.87, 810.88 and 810.90:

o Insert the following statement after Section 12.2.3:

"Table 12.3 describes the training programs which will be established for State/local emergency support groups. All response groups which are required to report to the Station in order to complete their emergency role will be trained in Station access procedures and organizational control (i.e., the identify of the on-site individual(s) responsible for controlling their emergency response activity). Each support group will be instructed as to the Station's capabilities associated with their specific emergency function. In addition to the training specified in Table 12.3, selected local medical support personnel will be required to participate in an annual medical drill with Seabrook Station emergency response personnel.

State emergency response personnel will be offered training in the following areas: (1) the Station emergency classification system; (2) off-site dose projection methodology; (3) the Station protective action recommendation criteria and its relationship to Station conditions; and (4) Station access/egress control measures. These officials will also receive instructions concerning the Station emergency response organization and the layout of the EOF/RC. On an annual basis these State officials will be requested to participate in the Station emergency exercise.

o Change the title of Section 12.2.3 to, "Selected State/Local Emergency Support Organization Personnel".

Change No.	Emergency Plan Revision

- Delete Sections 12.2.3.1 and 12.2.3.2.
- Insert Table 12.3, shown on page 15.

TABLE 12.3

Selected State/Local Emergency Support Group Training Matrix

Support Group	Training Area						
	Basic Radiation Protection	Site Access/ Egress Control Measures	Dose Projection Methodology	Emergency Classification/ Relationship to PAGS	Off-Site Notification Procedures	Fire Suppression System	Media Center
1. Local Fire Support	X	X			X	X	
2. Mutual Aid Fire Support Offices	X	X			X	X	
3. Ambulance Service Personnel	X	X			X		
4. State Officials Responsible for Protective Action Decision-Making		X	X	X	X		X
5. Local Police		X			X		
6. Medical Support	X				X		
7. News Media	X			X	X		X

Change No.	Emergency Plan Revision
27	In response to RAI 810.91 and 810.92:

o Revise Section 12.2.4 to read as follows:

The Recovery Organization will be providing the management function for restoring the affected unit and station to normal conditions. This effort will commence shortly after the emergency declaration and it will continue throughout the recovery phase.

During the emergency phase the Recovery Organization is only an extension of the Long-Term ERO. The major difference is that the Recovery Manager enlists the support of the Nuclear Production staff personnel to assist the Station personnel in handling any emergency response effort. Training will be provided to selected members of the Nuclear Production staff in the following areas: 1) Emergency Organization and Recovery Organization responsibilities; (2) Notification/ Mobilization Procedures; (3) Industry Emergency support capabilities; and (4) Station Emergency Response Facility operations.

During the recovery phase, the Recovery Organization may only represent a portion of the Long-Term ERO. The structure of this organization will be dependent upon the affected system(s) requiring restoration and the opinion of the Recovery Manager. Assignments to this organization will be made on an 'ad hoc' nature and will require no specific emergency plan training.

o Revise Table 12.1 to incorporate the following changes:

- Add a new training area to the vertical portion of the table called, "Technical Support Decision-Making Process".

- Add a new emergency position to the horizontal portion of the table called, "TSC Coordinator".

- Place an "X" in the horizontal column of the Emergency Director, Operations Manager, and the TSC Coordinator under the new training area, "Technical Support Decision-Making Process".

- Place an "X" in the horizontal column of the TSC Coordinator under the training areas of: EALS/Classification System, Off-Site Support Coordination Aspects, Off-Site Authority Coordination Aspects, Emergency Exposure Control Procedure, and Notification and Mobilization Procedures.

Change No.	Emergency Plan Revision
28	In response to RAI 810.93:

o Insert the following statement prior to the last sentence in the second paragraph of Section 12.2.2:

All Station emergency assistance personnel will receive appropriate training concerning the conduct of emergency functions under accident conditions.

29 In response to RAI 810.94:

o Revise the first paragraph of Section 12.2 as follows:

"All Station nonessential (nonassigned) personnel will receive annual instruction concerning their expected response action during an emergency. Selected Station personnel will be trained...."

30 In response to RAI 810.95:

o Insert the following sentence prior to the last sentence in the first paragraph of Section 12.2 on page 12-4:

Documentation of all training conducted at the Station is maintained in accordance with Training Department Procedures.

31 In response to RAI 810.97:

o Insert the following new section to Section 12.0 of the emergency plan:

"12.5 Emergency Planning Coordinator

Emergency maintenance and coordination responsibilities will be assumed by a Health Physics Technical Assistant assigned at the Station. The Health Physics Technical Assistant will function as the Station Emergency Planning Coordinator. The duties of the Station Emergency Planning Coordinator are to:

1. Maintain the Station Radiological Emergency Plan updated;

2. Maintain the Station Emergency Implementing Procedures updated;

3. Assist in emergency plan training and conduct drills and exercises;

4. Schedule and insure the conduct of emergency equipment inventories and calibration;

5. Represent the Station in State and local emergency plan interfaces;

6. Represent the Station in NRC emergency planning appraisals and audits; and

7. Interface with the corporate Nuclear Production staff in emergency planning matters."

32 In response to RAI 810.100:

- Insert the following paragraph prior to the present paragraph in Section 12.3:

  Annual independent reviews of the Station's emergency preparedness program will be conducted. The reviews shall include the emergency plan, its implementing procedures, training, equipment and State/local government planning interfaces. Management controls will be implemented for evaluation and correction of review findings. The result of the review, along with recommendations for improvements, will be documented and retained for a period of five years.

33 In response to RAI 810.101:

- Insert the following sentence after the third sentence of the present paragraph in Section 12.3:

  All telephone number listings associated with the emergency notification process will be updated on a quarterly basis.

Attachment C

Revisions to the current

Seabrook Station Radiological

Emergency Plan as response

to the EPLB RAIS

7/9/82

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 a capacity type estimate of the peak population associated with the beach area parking lot capacity during summer months.

4.3 Emergency Planning Zones

In accordance with the requirements specified in 10CFR50.33(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 (EPZ's) 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 EPZ's, but should the need arise, actions can be undertaken for the entire zone.

In accordance with the recommended planning bases, Seabrook Station has defined two Emergency Planning Zones (EPZ). The plume exposure EPZ, shown in Figure 4.7, is an area radially extending outward from the station site to a distance of about 10 miles. The size of the zone is based primarily on the consideration that projected doses estimated for most accidents would not exceed plume exposure Protective Action Guide levels outside the zone and that detailed planning within this area would provide a substantial base for expansion of response efforts in the event that this proved necessary. Table 4.3 lists the local communities that are affected by this designation and the wind direction which would potentially affect these communities should a release occur.

← Insert Change 1

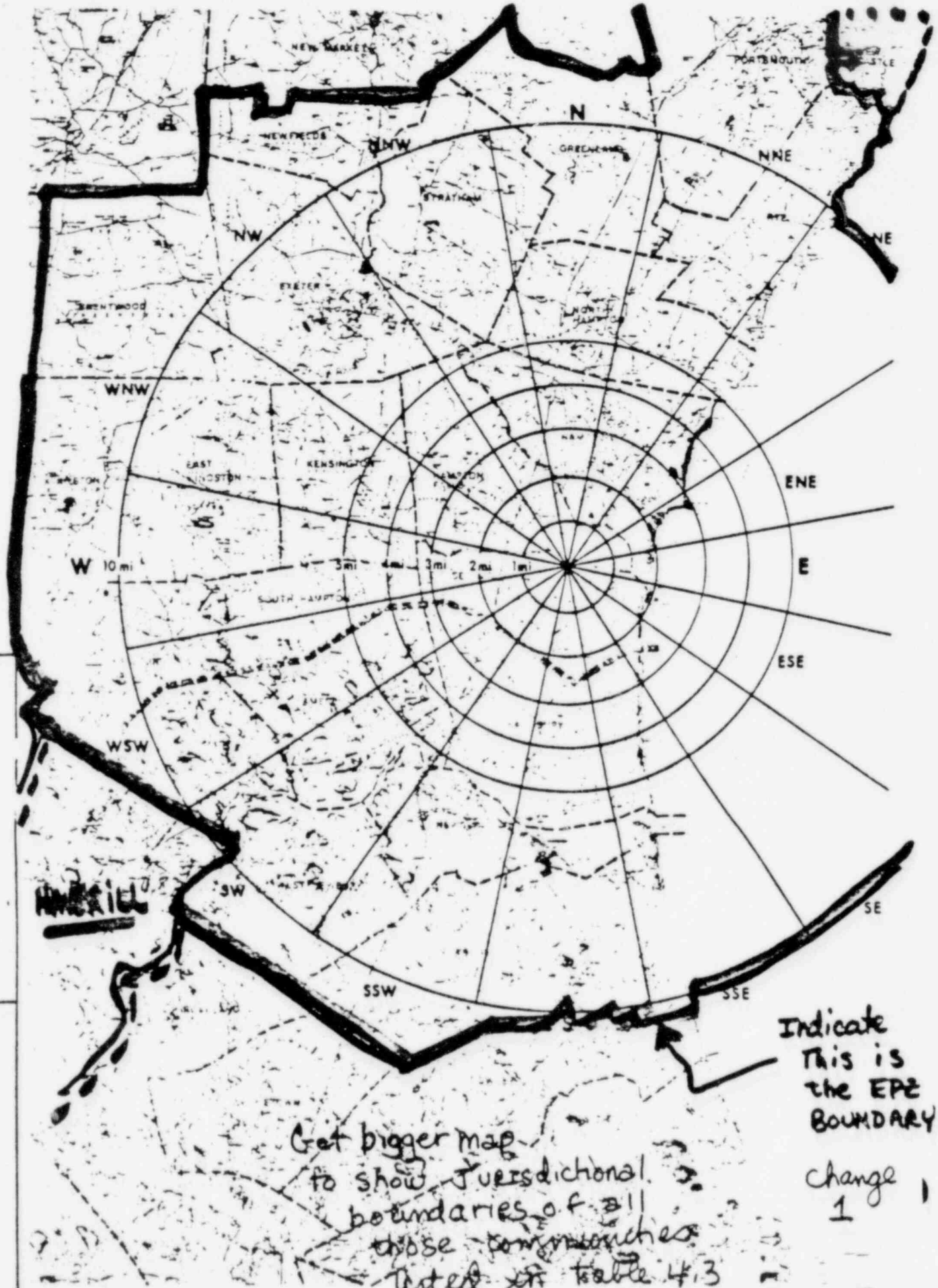
The ingestion exposure Emergency Planning Zone, shown in Figure 4.8, is an area extending radially outward from the station site to a distance of about 50 miles. The size of the zone is based primarily on the consideration that the downwind range within which significant contamination could occur would 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 pathway Protection Actions 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 pathway emergency response actions.

Insert changes as specified for Change 1

TABLE 4.3

[redacted] SEABROOK STATION

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
Kensington - NH	ESE-E
Kingston - NH	ESE-E
Newfields - NH	SSE-SE
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
Haverhill - MA	NE
Merrimac - MA	ENE
Newbury - MA	NNE-NNW
Newburyport - MA	NNE
Salisbury - MA	ENE-NNW
West Newbury - MA	NNE-N



Indicate This is the EPZ BOUNDARY

Change 1

Get bigger map to show jurisdictional boundaries of all those communities listed on table 4.3

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
SEABROOK STATION - UNITS 1 & 2
SAFETY ANALYSIS REPORT
RADIOLOGICAL EMERGENCY PLAN

SEABROOK STATION PLUME EXPOSURE EMERGENCY PLANNING ZONE

FIGURE 4.7

$\left[(\bar{u}\chi/Q)\right]_i$ = Concentration $\bar{u}\chi/Q$ value for downwind distance i ($1/m^2$)

χ_1 = Measured concentration ($\mu Ci/cc$)

$\left[(\bar{u}\chi/Q)\right]_1$ = Concentration $\bar{u}\chi/Q$ value for the measurement location ($1/m^2$)

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 charcoal cartridge and filter paper samples using a pancake GM detector. If the sample analysis shows a relatively high amount of radioactivity, a second analysis will be performed. The sample will be immediately delivered to the Emergency Coordination Area to be analyzed with greater sensitivity and accuracy for I-131 specifically.

The projected thyroid dose is determined from the measured I-131 concentration by multiplying by an estimate of the duration of the exposure and the dose conversion factor for a member of the public (assumed conservatively to be a new born infant). A nomogram, Figure 10.1, has been developed specifically for this thyroid dose projection on the basis of airborne radioiodine measurements.

In addition to the measurement and evaluation of off-site direct dose rates and air samples for radioiodine, the off-site radiological impact assessment will include the identification of all principle radionuclides potentially released from the accident in all potentially significant exposure pathways. This will be accomplished through an emergency 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 mobile laboratory from NSD when it arrives at the station EOF, and at the Yankee Environmental Lab in Westboro, Massachusetts by dispatching the samples there.

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 NSD Engineering Support Center.

10.2 Protective Action Recommendation Criteria

[redacted] On the combined basis of this projected whole body dose rate estimate, the class and type of emergency condition, and the anticipated duration of offsite releases, the Short-term Emergency Director [redacted] recommend to off-site authorities whether the public should be advised to seek shelter and remain inside as a precaution until [redacted] as an initial protective action.

insert Change 2

8.0 ORGANIZATION

This section describes the process used to convert the normal station and off-site engineering support organizations into emergency response organizations to effectively deal with any incident at Seabrook Station.

8.1 Normal Station Organization

The station organization is divided into (1) the on-site facility organization, and (2) the off-site organization for management and technical support. A direct tie exists between Seabrook Station and the Yankee Nuclear Services Division. The relationship and content of these on-site and off-site organizations are specified in the station Technical Specifications.

During [redacted] day-shift operation, the operating staff normally consists of one (1) Operations Manager, one (1) Assistant Operations Manager, one (1) Operations Administrative Supervisor, one (1) Shift Superintendent, two (2) Unit Shift Supervisors (one per unit), four (4) Control Room Operators (two per unit), and five (5) Auxiliary Operators (two per unit plus one rover) as shown in Figure 8.1. Figure 8.2 defines the Seabrook Station backshift organization and includes other personnel who indirectly report to the Shift Superintendent.

8.2 Emergency Response Organization

The Unit Shift Supervisor has the responsibility to recognize emergency conditions and notify the Shift Superintendent. The Shift Superintendent has the authority and responsibility to classify the observed conditions in accordance with the emergency classification system. The classification step initiates the activation of the station emergency response organization. This occurs over three distinct phases. X — Insert change 3

Delete the last sentence and Insert change 5

Immediate emergency actions, as described in Table 8.1, are taken by the operating shift (Figure 8.2), which is considered as the short-term Emergency Response Organization (ERO). [redacted]

The near-term ERO, represented in Figure 8.3, consists of four (4) individuals who may be contacted at all times and represent four key areas of specialization (Emergency Direction, Dose Assessment and Protective Actions, Corporate Coordination, and Technical Support). Table 8.2 specifies station and corporate personnel who are assigned to this near-term ERO. In addition, other personnel will be notified to support the immediate needs that station conditions dictate as determined by the short-term ERO. This will be accomplished in accordance with a notification scheme which provides the flexibility to support all emergency functions. These personnel and the operating shift personnel provide the base for establishing the long-term ERO and initiate or continue those actions necessary to terminate the emergency, assess onsite and offsite radiological conditions, provide technical support and coordinate

TABLE 8.1

SHORT-TERM EMERGENCY RESPONSE ORGANIZATION ACTIONS

SHIFT SUPERINTENDENT (Emergency Director)

1. Review station conditions and define emergency classification.
2. Activate station personnel warning system if necessary.
3. Notify near-term ERO members of event.
4. Request additional assistance via the station notification scheme.
5. Project consequences of potential or actual airborne radioactivity releases when applicable.
6. Notify State and NRC authorities of accident classification.
7. Evaluate system failures and recommend interim operating procedures/station modifications.

UNIT SHIFT SUPERVISOR

1. Recognize accident conditions and notify Shift Superintendent.
2. Command activities of control room staff to restore station to a safe operating condition.

CONTROL ROOM OPERATORS

1. Initiate applicable emergency operating procedures to maintain reactor safety.
2. Monitor and document operational parameter trends.
3. Advise Unit Shift Supervisor of operating conditions.

AUXILIARY OPERATORS

1. Perform operational activities required to maintain the level of safety of the station.
2. Provide station status reports to the Unit Shift Supervisor, as required.

HEALTH PHYSICS TECHNICIAN (respond to OSC)

1. Provide radiological monitoring capability.
2. Assist in determinating offsite projected doses, if necessary.

SECURITY PERSONNEL

1. Activate station notification scheme.
2. Monitor personnel accountability.
3. Provide station access and egress control measures.
4. Notify NSD and PSNH officials of event classification, as required.

I & C TECHNICIANS (respond to ~~OSC~~)

Assist in communications activities.

~~Assist in defining system failures.~~

MAINTENANCE PERSONNEL (respond to OSC)

1. Perform maintenance activities required to maintain the level of safety of the station.

CHEMISTRY TECHNICIAN (respond to OSC)

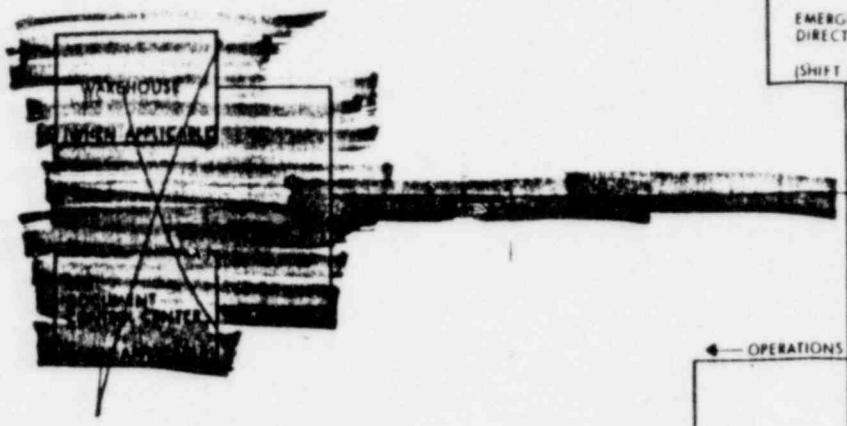
1. Analyze coolant activity samples when applicable.
2. Assist in radiological monitoring actions.
3. Assist in projecting offsite doses, if necessary

WAREHOUSE & DOCUMENT CONTROL CENTER COVERAGE (when applicable)

Provide assistance as directed by the short term Emergency Director.

Delete this Informatn and Insert change 4

delete as indicated by Change 4



EMERGENCY DIRECTOR (SHIFT SUPT.) (1)

SECURITY

OPERATIONS STAFF

UNIT 1 SHIFT SUPERVISOR (1)

UNIT 2 SHIFT SUPERVISOR (1)

CONTROL ROOM OPERATOR (2)

CONTROL ROOM OPERATOR (2)

SUPPORT STAFF

AUXILIARY OPERATOR (2)

AUXILIARY OPERATOR (2)

MAINTENANCE ELECTRICIAN (1)
MAINTENANCE MECHANIC (2)

I & C TECHNICIAN (2)

AUXILIARY OPERATOR (1)

CHEMISTRY TECHNICIAN (1)

HEALTH PHYSICS TECHNICIAN (1)

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
SEABROOK STATION - UNITS 1 & 2
FINAL SAFETY [illegible]YSIS REPORT
RADIOLOGICAL [illegible]RGENCY PLAN

SEABROOK STATION
BACKSHIFT STAFF/SHORT-TERM
EMERGENCY RESPONSE ORGANIZATION

FIGURE 8.2

but may require augmentation of on-shift resources to deal with the event. Off-site emergency organizations will be notified for informational purposes, and assistance from off-site fire, medical and security organizations may be required.

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) The emergency condition is recognized by the ~~Unit~~ Shift Supervisor who, in turn, instructs Control Room personnel to page the Shift Superintendent while also initiating immediate corrective action in accordance with emergency operating procedures applicable to the event;

2) The Shift Superintendent (Short-term Emergency Director) will report to the affected Control Room, verify and classify the event and provide technical advice as necessary (if the event simultaneously affects both units, he will establish his base of operations at Unit 1);

3) ~~On-duty operating and selected station personnel will respond as directed by the Shift Superintendent;~~ INSERT change 4 change

4) The Shift Superintendent will ensure that the NRC has been notified using the Emergency Notification System (red phone) and that this communication channel remains open until the condition has been terminated;

5) The New Hampshire and Massachusetts State Police will be notified by the Shift Superintendent. In turn, the State Police will notify the appropriate state authorities;

6) The Shift Superintendent will direct the activities of the short-term emergency response organization;

7) If station conditions warrant such action, the Shift Superintendent will direct the activation of the station paging system to initiate the emergency notification scheme shown on Figure 9.1. For Unusual Events, List No. 1 (shown on Table 9.1) is normally paged.

8) If paged, the near-term ERO members will call the station security force for the emergency classification and then report to their designated emergency centers as indicated in Table 9.2. (Note: The Near-term Emergency Director, having reviewed station conditions, will assume command of the emergency organization.)

9) Should it be necessary, the Near-term Emergency Director would make additional notifications by telephone to augment the existing emergency response organization to the level required by the nature of the emergency condition.

management ability and technical background to organize and manage recovery operations. The Recovery Manager is responsible for providing management direction and guidance to the Emergency Director in his effort to return the unit to a safe condition.

In summary, the Recovery Manager's principle responsibilities are to:

Insert change 6 →

1) Relieve the Emergency Director of any responsibilities not directly related to emergency termination efforts; X

2) Request, organize and direct the use of offsite support for recovery operations (e.g., equipment, manpower, services);

3) Coordinate resolution of issues regarding operating license requirements with NRC representatives; and

4) Approve all public information releases following establishment of his post.

The Recovery Manager or an alternate will be notified of all emergency conditions occurring at the station. For Site Area and General Emergency declarations, the Recovery Manager will report to the site and this position will remain in effect until the emergency conditions and recovery activities have been terminated. The Recovery Manager may be flexible as to his base of operations, dependent upon actual conditions.

8.3.1.2 Recovery Support

The Recovery Manager will be directly supported by the Nuclear Production Superintendent's staff at the EOF. Expertise in the disciplines of Engineering, Operational Support 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.

8.3.2 Recovery Operations

The following is a brief summary of the recovery organizations' objectives:

1) Maintain comprehensive radiation surveillance of the site until such time that normal levels are observable;

2) Control access to the affected area of the station and exposures to workers;

3) Decontaminate affected areas and/or equipment;

4) Conduct recovery activities in accordance with 10CFR20 regulations;

5) Isolate and repair damaged systems;

plants (Yankee Rowe, Vermont Yankee and Maine Yankee). All of this Yankee-related support capability is known as the Yankee Mutual Assistance Plan, a copy of which is included in Appendix B.

Should response support beyond this level be required, additional support from other nuclear industry organizations can be requested through the Institute of Nuclear Power Operations. Insert change 7

8.5 Coordination with State Government Authorities

Because of the location of the Seabrook Station, the planning and/or action responsibilities at the state level involve coordination of two states; New Hampshire and Massachusetts. Section 7.0 describes the communications network that has been developed between Seabrook Station and these states as a means of promptly notifying appropriate authorities under [illegible] emergency conditions. The short-term Emergency Director notifies New Hampshire and Massachusetts State Police using the dedicated microwave nuclear alert system. This notification keys mobilization of various levels of emergency response dependent upon the emergency classification. [redacted] The Emergency Coordinator will coordinate all accident information with these representatives or directly with representatives contacted using EOF communication channels to the designated state EOCs. Based on accident assessment, protective measures will be recommended and implemented by each state according to actions and decisions prescribed by each state's Emergency Plan.

radiological

Delete this sentence and follow instruction of change 8

Insert change 6

Tables 8.5 and 8.6 provide a summary of the radiological emergency responsibilities and functions assigned to various Massachusetts and New Hampshire State authorities. The station will maintain an updated copy of each state's Emergency Plan. Letters of agreement with New Hampshire and Massachusetts state agencies will be maintained in a future appendix to this plan.

Maine Department of Public Health will be notified of ingestion pathway considerations if conditions warrant such action. Additional state support can be called upon from participating states in the New England Compact on Radiological Health Protection.

3.3 Emergency Centers

The emergency centers which could be utilized by the emergency response organization are described in Section 6 of the plan. Depending on the emergency classification, different centers are activated. Key site and off-site personnel are dispatched to these centers to perform emergency assessments, formulate recovery strategies, conduct radiological analyses, and provide off-site authority liaison and public information support.

3.4 Mobilization

Delete this sentence and insert change 9

Mobilization is based on the emergency notification scheme shown in Figure 3.1. Table 3.1 identifies the personnel notified. The notification system is principally activated by the use of radio paging devices [redacted] Depending upon the emergency classification, different levels of mobilization are implemented. Table 3.2 summarizes the response to the four classes of emergencies described in Section 5.

3.5 State Government Notification and Response

Seabrook Station's Radiological Emergency Plan is designed to interface with the state emergency response plans of Massachusetts and New Hampshire. Local town governments, in coordination with the civil defense agencies of these states, have or are developing plans, which, should the need arise, contain instructions to carry out specific protective measures dependent upon various emergency conditions.

Seabrook Station is responsible for conveying specific accident information and assessment to the State of New Hampshire and Commonwealth of Massachusetts. By agreement with the states, protective action recommendations provided by Seabrook Station in the initial stages of the accident will be based on observed radiological release conditions. If none are occurring, the initial protective action recommendations will be based on other station parameters that identify the potential for radiological releases. It is the responsibility of the State Departments of Public Health to evaluate this assessment information against pre-established protective action criteria and make recommendations regarding appropriate public protective action.

A cooperative arrangement has been established among the New Hampshire and Massachusetts state authorities and Seabrook Station concerning radiological emergency preparedness. Seabrook Station's emergency classification system and notification procedures will be reviewed and approved by these states. Each state has committed to dispatching representatives to the Station's Emergency Operations Facility (EOF) when conditions warrant such action. An area, known as the Media Center, will be established where joint utility, state and federal press briefings will be held.

Public Service Company of New Hampshire and local communities prior to installation. Local community emergency plans will reflect the final approved systems. Insert Change 10, complete Instructions of Change 10 by insert App. E ~~as~~ in the Appropriate space

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 Media Center for the purpose of providing coordinated press releases during an accident.

For Alert, Site Area and General Emergencies, the Media Center, located at the Seabrook Fireman's Association Building, will be activated.

The Media Center will be staffed by designated public information personnel from Public Service Company of New Hampshire. People 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.

An emergency call-list has been developed for purposes of activating this Center. Selected members of the public information staff will report to the station to evaluate and "rough draft" information concerning the accident. When the content of the news releases have been approved by the Recovery Manager, this information will be forwarded to the Media Center where they are released.

A Public Relations Representative from PSNH will manage the activities of this Center under the direction of the Recovery Manager. Announcements during a crisis and important policy statements will be approved and/or made by the Recovery Manager or in his absence by the Emergency Director. Joint press conferences and press releases will be coordinated with key government officials and the Recovery Manager.

Insert Change 13

Communications will be provided between the Media Center and the plant, and for state and federal agency use. Public information materials covering the following areas of concern will be available at the Media Center during accident conditions:

1) Educational information on radiation;

2) Educational information on the Seabrook Station operation;

3) Information on all station emergency plan arrangements;

4) The emergency classification system and notification process; and

5) Pre-planned protective actions to be implemented by state and local authorities.

10.4.5 Radiation Guideline Action Levels

Radiation guideline action levels for emergency center habitability are shown on Table 10.3. This table describes 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 adjacent to the Radiation Controlled Area Control Point. Specific station personnel have been trained in advanced first-aid and CPR as indicated in Section 12 of this plan.

Arrangements have been made with a local hospital to provide care for contaminated injured patients. In addition, Peter Bent Brigham Hospital will provide care for overexposed individuals. Both hospitals will participate in medical emergency drills as a portion of emergency plan training. At such time, the effectiveness of the medical services will be evaluated. A number of hospitals which have the capability of handling radiation emergency patients have been identified for the Seabrook area in appropriate state plans.

10.5.2 Medical Transportation

Insert CHANGE 11

~~Arrangements have been made with a local ambulance service to provide 24-hour ambulance service for emergency transportation of station personnel for offsite treatment.~~ The ambulance service personnel are provided with specific training by Seabrook Station staff on the health physics considerations associated with radioactively contaminated personnel.

During normal operation, the Seabrook Station Education Center will maintain supplies of current public information material as well as providing public information programs for the general public upon request. The states of New Hampshire and Massachusetts are presently developing emergency plan brochures which will be periodically distributed to the public informing them how they will be notified and what their actions should be in an emergency. Specific written messages, intended for the public, consistent with Seabrook Station's classification scheme, have been developed by the respective state agencies to be used for initial public notification purposes.

Insert change 12

The Seabrook Station public information staff will [redacted] conduct programs to acquaint the news media with information concerning radiation, emergency public information procedures, the emergency classification system [redacted] a general review of station characteristics. Local and state media will be invited and encouraged to attend.

Insert change 14

Station evacuees will be arbitrarily scanned for radioactive contamination prior to leaving the station if it is suspected that they may be contaminated. All station evacuees will be advised of area evacuation routes by security upon being released. Appendix C provides evacuation time estimates of the public within the plume EPZ and also summarizes the major evacuation routes which will be utilized in the event that such action is necessary.

The Emergency Coordinator will arrange through either the Administrative Services Manager or the Security Department Supervisor for additional dosimetry and badging necessary for incoming station 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 Decontamination Capability

Station decontamination facilities are located in the Operational Support Center, specifically at the Radiation Controlled Area Control Point. Survey instrumentation for personnel "frisking", as well as sensitive body burden monitoring equipment, is available here. All waste generated through the use of the decontamination facilities is collected and processed by the station liquid radwaste system.

Decontamination facilities are also located at the Emergency Operations Facility. Initial decontamination methods will involve the use of wash cloths to remove gross contamination which will be disposed of by normal radwaste procedures. Should contamination levels warrant more extensive means, shower facilities will be used. All shower waste will be drained into the septic system. After accident conditions have been terminated, the septic system would be monitored to ascertain activity levels. Depending upon the activity levels present and the isotopic determination, recovery plans would be developed to restore this system to normal activity levels. All personnel exceeding a (β,γ) skin contamination level of 1×10^3 dpm/100 cm^2 will be detained for decontamination purposes; otherwise they will be released after having been informed of appropriate decontamination procedures.

10.4.4 Use of On-Site Protective Equipment and Supplies

The station supplies of personnel radiation protection equipment and gear will be used as necessary to support the emergency response effort. Equipment such as respiratory protection gear, many types of protective clothing, and a supply of potassium iodide will be assigned to the emergency response organization members in accordance with established station radiation protection criteria. Radiological monitoring equipment will be stocked and available for use at established emergency centers. [redacted]

Insert Change 15

Put AppF title page where appropriate

6.2.2 Radiation Data Management System (RDMS)

The RDMS, in conjunction with other monitoring systems, provides the operators with the ability to assess station radiological conditions during normal operations, as well as radiological emergency conditions. The Radiation Data Management System 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 monitoring. 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.

Each of the RDMS' monitors alarms in the Control Rooms, the Technical Support Centers and Radiation Controlled Area control point for a variety of alarm conditions (i.e., high level, alert, power failure, etc.). This system addresses the requirements of Regulatory Guide 1.97 (Rev. 2).

6.2.3 Geophysical Phenomena Monitors

6.2.3.1 Meteorological

Seabrook Station maintains a 210 foot high meteorological tower located near the south edge of Brown's River, as shown in Figure 6.1. Meteorological inputs originate from the primary sensors located on the meteorological tower. The parameters monitored include vertical temperature differences between 43 and 150 feet and between 43 and 209 feet (ΔT), wind velocity and direction.

Delete These sentences and Insert Change 16

[redacted]

6.2.3.2 Seismic

Seabrook Station has installed seismic monitoring equipment in Unit 1, and alarms are indicated in both Control Rooms. The equipment consists of:

1) Triaxial Time History Accelerographs capable of measuring and permanently recording the absolute acceleration versus time for both horizontal and vertical motion;

2) Triaxial Response Spectrum Recorders capable of permanently recording peak responses as a function of frequency for both horizontal and vertical motions; and

10.0 EMERGENCY MEASURES

10.1 Emergency Classification and Initial Dose Projection

Insert Change 17

10.1.1 Estimation of Off-Site Whole Body Gamma Dose Rates

Certain accident conditions at Seabrook Station may involve release of radioactive fission products through either the primary vent stack, the turbine building, the radwaste facility, or containment leakage. Therefore, an integral portion of emergency preparedness requires adequate methods, systems, and equipment for assessing and monitoring actual or potential off-site consequences of a radiological emergency condition. Seabrook Station is developing a computer model for dose assessment which may be separated into two levels of analysis, a straight-line gaussian transport model and a plume segment projectory model. The first model is designed for Control Room use and through interface with the station meteorological system and radiation data management system parameters will provide graphic display of dose isopleths out to 10 miles from the station. The second model is designed for use at the TSC and EOF and through interface with the station meteorological system and radiation data management system parameters will provide real-time dose projection capability. This computerized dose assessment capability will address the elements of Appendix 2 of NUREG-0654.

In addition to this computerized capability, Seabrook Station is developing a manual method to quickly determine the activity release rate and the projected off-site whole body plume centerline dose rate at the station boundary. This manual technique will take the form of a nomogram which requires the following input parameters: time after reactor shutdown, type of source term produced by the event, the primary vent stack monitor response, the primary vent stack flow rate at the time of the accident, and the wind speed. This method will only be considered a back-up capability.

10.1.2 Evaluation of Field Air Samples

Seabrook Station monitoring teams, having determined the approximate plume centerline (i.e., maximum radiation level) in the field, will take air samples at various intervals downwind from the station. These samples will be analyzed on a gross (β,γ) basis in the field and, if elevated levels are observed, returned to the Emergency Coordination Area of the EOF where they will be analyzed to determine radionuclide concentrations. Based on a measured plume concentration χ_1, projected concentrations, χ_i, of that radionuclide at other downwind distances will be defined in the following manner:

$$\chi_i = \frac{\left[(\bar{u}\chi/Q)\right]_i}{\left[(\bar{u}\chi/Q)\right]_1} \cdot \chi_1$$

where:

χ_i = A projected concentration at downwind distance i (μCi/cc)

emergency kits. Each emergency response organization member reporting to the site will be provided a TLD badge. Dose records based upon the results of these dosimeters will be maintained at each center. This information will be cross-referenced with and replaced with TLD badge data, as soon as they are processed. The NSD Environmental Lab will make a supply of TLD badges available to the station. To the extent of the emergency supplies are available and dependent upon the actual radiological conditions, responding off-site authorities will be provided dosimetry if they require it.

10.4 Protective Measures

Insert change 19

10.4.1 Personnel Accountability

Use of a computer-assisted accountability system at each of the in-station emergency centers (i.e., TSC and OSC), designated assembly areas and the entry/exit point for the station's Protected Area, which is shown in Figure 4.3, will provide station security with a rapid method for the determination of station personnel accountability. Station accountability procedure varies dependent upon the emergency class and station assignment.

Upon declaration of the emergency class and activation of the station emergency alarm, station personnel assigned specific emergency responsibilities will proceed to their designated emergency center location whereas unassigned personnel (i.e., station visitors, contractor and station personnel) will assemble at pre-designated locations within the station area. Unassigned personnel accountability requires a two-phase operation due to the variability in station assignment.

Unassigned personnel located within the Protected Area, having reported to their designated check-point and performed the accountability procedures, will await instructions concerning station egress measures. Contractor personnel outside of the Protected Area will be required to exit through a designated entry/exit terminal where security will coordinate egress control measures. At each emergency center, a manual registration will be conducted, the results of which will be reported to the Emergency Operations Facility staff. Station security personnel will be responsible for reviewing computer results and reporting these results to the EOF staff who, in turn, will coordinate with security as to the final determination of station personnel accountability. Search and rescue procedures will be implemented if any missing persons have been identified.

10.4.2 Station Access/Egress Control Methods

Insert new ¶ designated by change 18

When an Alert is declared, unassigned personnel will be evacuated from the station on a selective basis. When a Site Area or General Emergency has been declared all unassigned personnel will be evacuated. In the event that station conditions may or have produced a release, traffic control measures will be established to direct unassigned personnel out the most appropriate exit (the North Access Road or the South Access Road).

the actions itemized under Section 9.2.3 are followed and, in addition: (see Figure 9.1 and Table 9.2)

1) Contracted service organizations, sponsor utilities and other industry resources will be alerted and requested to render assistance as appropriate;

2) The full resources of the Federal Master Plan will be activated;

3) Public information and instructions associated with protective actions will be a principle effort of all response organizations. The station will participate in these efforts fully with detailed emergency condition information and prognosis.

4) A close-out or recommended reduction of the emergency class, by means of a briefing of off-site authorities, will be made when warranted. A written summary on the emergency will be provided to corporate management, the USNRC, FEMA and the appropriate states.

9.3 Emergency Deescalation and Termination Criteria

Insert change 20

Room and Technical Support Center; and (5) communicating between certain station centers as shown in Figure 7.3.

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 a remote location (Control Room) by a pushbutton and takes priority over all other messages.

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.

7.5 Sound-Powered Telephone System

Each unit 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 each Control Room to enable the loops to be connected together. Since no external power is necessary for operation, the system is always available during an emergency condition.

7.6 Dedicated and Direct Telephone System

A direct and dedicated telephone (ENS red phone) has been installed between the Nuclear Regulatory Commission Incident Response Center in Bethesda, Md. and each Control Room with extensions in each Technical Support Center, primary and alternate Emergency Operations Facilities and the NRC resident inspector's office. This is an automatic ringing system designed to immediately contact the NRC Incident Response Center of an emergency condition. The system is tested daily by the NRC and has a 24-hour manning capability at both organizations.

A second dedicated telephone (Health Physics Network) has been installed between the NRC Incident Response Center in Region I and the primary Emergency Operations Facility with extensions in the alternate EOF, the Health Physics Department office and the Technical Support Center. This is an automatic ringing system to report and coordinate radiological and environmental matters to the NRC. Figure 7.3 shows these communications channels.

X INSERT CHANGE 21

7.7 Microwave Communication System

Two microwave transmitter-receiver units in a loop system arrangement for high system reliability are installed at Seabrook Station. The system provides both voice and data channels. The voice channels provide direct communication between each Control Room and system dispatcher and for contacting the Corporate Office in Manchester, New Hampshire and the Nuclear Services Division in Framingham, Massachusetts.

12.0 MAINTAINING EMERGENCY PREPAREDNESS

12.1 Drills and Exercises

Emergency exercises/drills will be conducted to test and evaluate the adequacy of emergency facilities, equipment, procedures, communication channels, actions of emergency response personnel and coordination between off-site agencies and the facility.

A summary of exercises/drills and associated elements is presented below.

12.1.1 Radiological Emergency Plan Exercises

An exercise tests the execution of the overall station emergency preparedness and the integration of this preparedness with responding off-site organizations. In order to test and evaluate the station emergency response organization's preparedness (actions of personnel, equipment, procedures and coordination), a Radiological Emergency Plan exercise will be conducted once every 12 months (plus or minus 3 months). Federal, state and local agencies will be made cognizant of the intended exercise and its conduct will be coordinated with off-site 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 which is to be tested.

12.1.2.1 Communication Drill

INSERT CHANGE 22

To ensure that emergency communications between the facility and off-site emergency response organizations are operable, communication drills will be conducted as outlined below. Paragraphs 3, 4 and 5 below may be performed as part of the required annual Radiological Emergency Plan exercise.

1) Communication channels with state governments within the plume exposure pathway will be tested monthly;

2) Communication channels with the near-term ERO will be tested monthly;

3) Communication channels with both the NSD Emergency Response Organization and PSNH Corporate Support Organization will be tested annually;

4) Station data transmission capability between station emergency centers will be tested annually;

5) Station EOF communications to state Emergency Operation Centers and to station field assessment teams will be conducted annually; and

6) Communications with states within the ingestion pathway and federal agencies will be tested annually.

12.1.2.2 Fire Drills

To test and evaluate the response and training of the facility fire brigade and coordination of same with off-site fire support, a number of fire drills are conducted annually with at least one drill being conducted with off-site fire support. The drills will be conducted in accordance with station Technical Specifications.

12.1.2.3 Medical Drills

To evaluate the training of the facility's medical response team and off-site medical response personnel (ambulance and hospital), a medical drill will be conducted annually involving a simulated contaminated individual. Although facility medical response may be tested more frequently, the offsite response portion of medical drills may be performed as part of the required annual exercise.

12.1.2.4 Radiological Monitoring Drills

Plant environs and radiological monitoring drills (on-site and off-site) will be conducted annually. [redacted] This drill may be performed as part of the required annual exercise.

INSERT CHANGE 23

12.1.2.5 Health Physics Drills

Health Physics drills will be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements. One of the drills may be performed as part of the required annual exercise. Chemistry and Health Physics personnel will be periodically drilled on the analysis of station liquid samples.

12.1.3 Scenarios

An Exercise Coordinator will be appointed to develop the annual Radiological Emergency Plan exercise. A scenario will be prepared by the Exercise Coordinator for each exercise to be conducted. [redacted] The scenario will be submitted to the NRC/FEMA for final approval prior to the actual implementation date. [redacted] The scenario will include, as a minimum, the following:

INSERT CHANGE 24

1) Basic objective(s) and specific elements that are to be tested;

2) Date, time period, place and participating organizations;

3) Simulation lists;

4) Time schedule of real and simulated initiating events;

5) A narrative summary describing the conduct of the exercise to include such items as simulated casualties, search and rescue of personnel, deployment of radiological monitoring teams and public information affairs;

6) List of observers.

INSERT CHANGE 24
INSERT CHANGE 25 after completing CHANGE 24

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 Coordinator will arrange for qualified observers to evaluate and critique the exercise.

A critique will be conducted as soon as feasible following the conclusion of the exercise with facility personnel as designated by the Station Manager or his representative. After the critique, the observers will complete and submit a written evaluation to the Exercise Coordinator in which the exercise performance will be measured against the objectives. All comments and/or recommendations will be appropriately documented. Observers from state agencies will be welcome to join the observation and critique process.

The exercise documentation will be submitted to the Station Manager who will assign responsibility and deadlines for corrective actions. Individuals assigned this responsibility will be required to document actions taken to improve the station's emergency preparedness. All final actions will be reported to the Station Manager.

12.2 Emergency Plan Training

INSERT CHANGE 29

Personnel will be trained to assume specific positions in the emergency organization. Actions performed by emergency organization personnel will parallel the individual's routine responsibilities as much as practicable. Annual training will be provided that will effectively ensure that each member of the emergency organization can perform non-routine duties with proficiency.

All station emergency response organization personnel will receive annual emergency plan training in the following areas:

1) Station organizational control under emergency conditions;

2) Emergency documentation associated with an individual's designated emergency function;

3) Station emergency communications channels associated with an individual's designated emergency function;

12.2.2 Long-Term Emergency Response Organization

The station's long-term ERO may be subdivided into two distinct disciplines; the station emergency management staff and emergency assistance personnel (EAP), who will support emergency management activities. In addition to the general training described in Section 12.2, these personnel will be required to participate in specialized annual training associated with their assigned emergency response role. Table 12.1 describes specific areas in which selected members of station management will be trained for emergency response purposes. For each position designated in Table 12.1, both the primary and alternate(s) to these positions, as specified in Table 8.2 of this plan, will be required to participate in the training sessions established.

Various station personnel will be trained as emergency assistance personnel (EAP). Assignment of station personnel to EAP functions will, in general, parallel their normal station duties. Personnel designated to perform EAP functions may be cross-trained in more than one functional area. Table 12.2 indicates the specialized training to be provided to individuals assigned EAP roles.

INSERT CHANGE 28

12.2.3 Local Services Support

12.2.3.1 Local Medical Support Personnel

Selected local medical support personnel will receive training in the following areas:

1) Basic radiation protection
2) Personnel and equipment decontamination
3) Use of radiation instruments
4) Establishing radiation and contamination control areas
5) Biological sampling
6) Notification procedures

delete Sections 12.2.3.1 and 12.2.3.2 and Insert Change 26

Additionally, selected local Medical Support Personnel will participate in annual medical drill with Seabrook Station emergency response personnel.

12.2.3.2 Selected Local Fire Department

Local Fire Department personnel will receive training in the following areas:

1) Basic radiation protection
2) Station fire suppression capability and locations

Insert TABLE 12.3 where appropriate

3) Station access and control procedures

4) Notification procedures

INSERT CHANGE 27

12.2.4 Recovery Organization

The Recovery Organization will be providing the management function for restoring the affected unit and station to normal conditions. This effort will commence shortly after the emergency declaration. Training will be provided for specific individuals of the recovery organization that may be involved in emergency response.

12.2.4.1 Recovery Manager

The designated Recovery Managers will receive training in the following areas:

1) Onsite and offsite communication channels including notification scheme.

2) Onsite and offsite emergency response facilities.

3) Functions and locations of offsite support agencies.

4) Radiological consequences related to spectrum of potential accidents.

5) Media interface, public communications and information releases.

6) Onsite emergency organization and functions.

7) Recovery Manager emergency response responsibilities.

8) Emergency classification system relationship to emergency action levels.

9) Recovery Organization personnel, technical and material resources, and their intended functions.

12.2.4.2 Public Information Representative

The designated Public Information Representatives will receive training in the following areas:

1) Station facilities, functions and normal conduct of operations.

2) Emergency response concept including emergency management, recovery management and emergency response personnel.

3) Offsite support agencies, organizations and facilities.

4) Onsite support facilities and capabilities.

TABLE 12.1

STATION EMERGENCY MANAGEMENT TRAINING MATRIX

Emergency Position / Training Area	EALs/Classification System	Dose Projection Models	Off-Site Support Coordination Aspects	Off-Site Authority Coordination Aspects	Emergency Exposure Control Procedure	Station Protective Action Guidelines	Off-Site Protective Action Guidelines	Notification and Mobilization Procedures	Public Information Procedure	Site Access/Egress Control Measures	Sample Analysis Techniques
Emergency Director	X	X	X	X	X	X	X		X		
Operations Manager	X		X		X	X					
Shift Superintendent	X	X		X	X	X	X	X			
Unit Shift Supervisor	X	X		X	X	X	X	X			
Operational Support Coordinator					X	X					X
Emergency Coordinator		X	X	X	X	X	X	X	X	X	
Health Physicist		X		X	X	X	X				X
H.P. Technical Assistant		X		X	X	X	X				X
Administrative Services Manager			X							X	
Security Department Supervisor			X	X				X		X	
T.A. to Emergency Director			X					X	X		
Training Manager			X	X							

INSERT
CHANGE 27

4) Station emergency facilities and equipment associated with an individual's designated emergency function; and

5) Station accountability procedures.

INSERT CHANGE 30

A portion of this training is provided by personnel participation in unrehearsed drills. During these drills, instructors check the performance of the personnel assigned and offer immediate assessment of performance. Details of the specialized training given on an annual basis are provided below.

12.2.1 Near-Term Emergency Response Organization

Members of the Near-Term Emergency Response Organization (ERO) are responsible for activating designated emergency activity areas and initiating or continuing those actions necessary to terminate the emergency, assess onsite and offsite radiological conditions, provide technical support and coordinate initial responses of offsite authorities, the media and other requested assistance. Accordingly, each member will receive emergency plan training required to ensure near-term response actions will be accomplished. This training will supplement long-term Emergency Response Organization training discussed in Section 12.2.2 since the near-term members will also assume positions of that organization.

1) Near-Term Emergency Director

In addition to emergency plan training provided for the Long-Term Emergency Director, the Near-Term Emergency Director designees will be trained in station procedure for activating the Long-Term ERO, establishing the Recovery Area of the EOF for long-term use and activating the Recovery Area communication channels.

2) Dose Assessment and Protective Action Specialist (DAPAS)

In addition to emergency plan training provided for the Health Physicist and Health Physics Technical Assistant, the DAPAS will be trained in station procedures for establishing the Emergency Coordination Area of the EOF, including initiating EOF habitability checks, activating the Emergency Coordination Area communication channels and performing applicable functional checks of dose assessment equipment.

3) Technical Support Specialist (TSS)

In addition to other emergency training received by TSS designees, the TSS will receive training in the procedures for establishing the TSC, including initiating TSC habitability checks, activating TSC communication channels and performing applicable functional checks of data acquisition equipment.

4) Corporate Coordinator (CC)

In addition to other emergency training received by CC designees, the CC will receive training in the procedures for establishing the PSNH Corporate Support Center, including initiating ~~and~~ Nuclear Production Staff call-in, activating the Corporate Support Center communication channels to the Station and performing applicable

5) Media interface conduct of operations.

6) Media Center facility, functions and resources.

7) Radiological impact of spectrum of accidents, including effects, hazards and mitigating actions.

8) Industry, Federal, State and other public information emergency plans to ensure recognition of contacts, and coordination.

9) Communication channels and notification scheme.

12.3 Review and Updating of Plan and Procedures

INSERT CHANGE 32

All recommendations for changes to the Radiological Emergency Plan or procedures based on the annual exercise will be submitted to the Seabrook Station Operations Review Committee (SORC) for review before implementation. On an annual basis, written agreements with outside support organizations and government agencies will be evaluated during the radiation emergency exercise and/or planned medical or fire drills to determine if such agreements are still valid. If not, then these agreements will be renewed and updated; otherwise, the agreements will be recognized as current documentation. Revisions will be made in accordance with current regulations and guidelines on a continuing basis, as applicable. Changes to the plan and procedures will be forwarded to all organizations with a responsibility for implementation of the plan.

INSERT CHANGE 33

12.4 Maintenance and Inventory of Emergency Equipment and Supplies

The emergency equipment maintained in the Control Rooms, the Operational Support Center, the Technical Support Centers, and the Emergency Operations Facility will be listed in an emergency equipment checklist which will be included as an additional appendix to this plan. The calibration cycles of emergency station instruments are quarterly for portable instruments and semi-annually for pocket dosimeters. Along with requirements for calibration, the instruments will be source-checked during monthly inventories and before each use. There are sufficient reserve instruments and equipment to replace those that are removed from emergency kits for calibration purposes. A Health Physics representative will be assigned on a monthly basis to inventory and maintain the emergency kits and/or equipment.

— INSERT CHANGE 31