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NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.

(Seabrook Station, Units 1 and 2)

}
Docket Nos. 50-443 OL
50-444 OL

}
Off-site Emergency Planning

NRC STAFF'S PROPOSED FINDINGS OF FACT AND
CONCLUSIONS OF LAW WITH RESPECT TO SHELTERING ISSUES

These proposed findings of fact and conclusions of law are set out as a continuation of the NRC Staff's Proposed Findings of Fact and Conclusions of Law filed on July 1, 1988, addressing the other issues in this proceeding. As in the case of the Staff's filing of July 1, 1988, the Staff has adopted the Applicants' proposed findings of fact and conclusions of law ^{i/} to the extent that the Staff agrees therewith. Accordingly, the Staff herein utilizes the Applicants' paragraph numbering system, beginning with 10. For convenience, the Applicants' filing is reproduced herein in its entirety, with Staff deletions lined out [- - - -] and Staff additions underlined. References back to other proposed findings are to the paragraphs of the Staff's filing of July 1, 1988.

^{1/} "Applicants' Proposed Findings of Fact and Rulings of Law With Respect to Sheltering Issues," filed on July 15, 1988.

10. SHELTERING OF BEACH POPULATIONS

10.1. Findings of Fact

10.1.1. Three contentions were admitted for litigation to the effect that NHRERP Rev. 2 did not contain adequate provisions for sheltering persons within beach areas near the plant in the event of an accident at Seabrook; these contentions are NECNP-RERP-8, SAPL-16, and TOH-VIII. ASLB MEMORANDUM AND ORDER (Providing Basis for and Revision to Board's Rulings on Contentions on Revision 2 of NHRERP) (May 18, 1987) at 25 - 27, 37 - 38, 51 - 53, appendix at 1, 3, 5.

10.1.2. In support of their position on sheltering, the Applicants sponsored a panel of witnesses consisting of Messrs. Callendrello, Frechette, Strome, Bonds, Wallace, Milet, and MacDonald joined by John W. Baer, an Emergency Planning Specialist from Aidikoff Associates (Qualifications Post Tr. 10022) and Donald W. Bell, Senior Nuclear Technology Engineer from Stone & Webster Engineering Corporation (Qualifications Post Tr. 10022). App. Dir. No. 6, Post Tr. 10022, passim.

10.1.3. The Board finds the members of this panel qualified by knowledge, skill, experience, training and education to give the testimony presented.

10.1.4. The NHRERP provides for a range of protective responses that may be implemented to protect the health and safety of the public, including summer, seasonal populations. Further, this range of responses has the flexibility to ensure dose savings in response to a wide spectrum of accident conditions. App. Dir. No. 6, Post Tr. 10022 at 1.

10.1.5. The concept of protective action recommendation decision making employed by the NHRERP is patterned on the emergency

planning guidance of NUREC-0654/FEMA-REP-1, Rev. 1 and emergency planning regulations of the Nuclear Regulatory Commission. App. Dir. No. 6, Post Tr. 10022 at 1.

10.1.6. Protective Action Guides (PAGs) of the U.S. Environmental Protection Agency (EPA) have been incorporated in the NHRERP and provisions have been made for calculation of projected dose which permits reliance on the PAGs for protective action decision making. Decision criteria have been developed and committed to procedures to aid accident assessment personnel and decision makers in making choices among available protective action options including that of sheltering. App. Dir. No. 6, Post Tr. 10022 at 1.

10.1.7. The NHRERP provides for precautionary actions intended to avoid exposure of the beach population to potential radiological risk. Plans and procedures, including decision criteria, have been put into place specifically for implementation of these measures. Accident assessment personnel of the State of New Hampshire are prepared by procedures and training to ascertain from utility emergency response personnel the status and prognosis of plant conditions and safety systems for the purpose of recommending precautionary actions prior to the manifestation of radiological consequences. App. Dir. No. 6, Post Tr. 10022 at 1 - 2.

10.1.8. While the preferred protective action for the seasonal beach population is the precautionary measure of early beach closure or evacuation, the State of New Hampshire is prepared to recommend the protective action of sheltering in a limited number of circumstances. These are described in the New Hampshire Response to FEMA Supplemental

Testimony, Enclosure 1 to letter of Richard H. Strome to Henry G. Vickers dated February 11, 1988. App. Dir. No. 6, Post Tr. 10022 at 2 and App.1.

10.1.9. The NHRERP provides the method and means to ensure prompt notification of the summer, seasonal population of precautionary and protective actions to be taken. This is primarily accomplished by a system of fixed sirens providing coverage of the New Hampshire portion of the Seabrook Station EPZ. In addition, sirens providing coverage for beach areas of concern have public address capability for which a voice message containing instructions for the beach population has been developed. Each campground in the EPZ will be offered a tone-alert radio to supplement notification by the siren system. Both beach areas and campgrounds will be supplied with public information materials in the form of durable signs in the beach area, posters, and brochures that provide instructions to the public on actions to take in an emergency. App. Dir. No. 6, Post Tr. 10022 at 2 - 3.

10.1.10. The NHRERP will include a special facility plan for each campground in the EPZ. These plans are to call for campground operators to ensure that campground users are notified of an emergency. The campground operators will either close the campgrounds as a precautionary measure or evacuate them based on the protective action recommended for the general population. Campground users constitute neither a significantly large segment of the population nor an inordinate concentration of persons in any one area of the EPZ so as to impede their rapid departure from the EPZ in the event of an emergency. App. Dir. No. 6, Post Tr. 10022 at 3. See also No. 10.1.75. infra.

10.1.11. Essentially any residential structure in the Seabrook Station EPZ affords a dose reduction factor of at least 0.9 which is assumed by the NHRERP for the purpose of choosing between the protective action options of evacuation and sheltering. App. Dir. No. 6, Post Tr. 10022 at 3.

10.1.12. Schools and day care centers are presumed to share the characteristics of structures that prevail in the Seabrook Station EPZ and to have at least the same dose reduction factors. Because protective action recommendations for the general public apply also to schools and day care centers, evaluation of the protection afforded by the individual structures is not considered as part of the decision making process. App. Dir. No. 6, Post Tr. 10022 at 3 - 4.

10.1.13. NHRERP Volume 1 and the local plans, Volumes 16 through 32, and specifically plans for the Towns of Seabrook and Hampton, Volumes 16 and 18 respectively, provide for a range of responses that may be implemented to protect the health and safety of the public, including the summer, seasonal populations, in the event of a radiological emergency. This range of responses has the flexibility to achieve dose savings in response to a wide spectrum of conditions. App. Dir. No. 6, Post Tr. 10022 at 4.

10.1.14. The plans are premised on the basic concept of NUREG-0654/FEMA-REP-1, Rev. 1 that any one or a combination of responses will be taken to achieve the maximum dose savings to the public. The responses prescribed by the NHRERP range from precautionary actions for the beach population at the early stages of an emergency to the protective

actions for the general public of shelter, evacuation, and control of access to affected areas. App. Dir. No. 6, Post Tr. 10022 at 4.

10.1.15. The protective action decision criteria of the NHRERP take into consideration plant conditions, evacuation clear times, dose reduction factors, and other conditions that may exist at the time of an accident. App. Dir. No. 6, Post Tr. 10022 at 5.

10.1.15.1 Protective Action Guides (PAGs) have been promulgated by the U.S. Environmental Protection Agency for use by public health officials and decisionmakers to determine the need for protective actions and for choosing appropriate protective actions. The PAGs contemplate the calculation of projected doses at the time of an emergency, which then serve as trigger points to initiate protective actions:

A Protective Action Guide under no circumstance implies an acceptable dose. Since the PAG is based on projected dose, it is used only in an ex post facto effort to minimize the risk from an event which is occurring or has already occurred.

"Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," U.S. Environmental Protection Agency, EPA-520/1-75-001, September 1975 (revised June 1980), at p. 1.1. In sum, the PAGs are guidance tools for triggering protective action recommendations and do not indicate levels of acceptable or unacceptable doses. App. Dir. No. 5, Post Tr. 10022 at 5-6; Tr. 11938-42.

10.1.16. NHRERP Volume 1, Section 2.6.3 incorporates the U.S. EPA PAGs for direct exposure to radioactive materials within the Plume Exposure Pathway EPZ. The range of PAG doses delineated by the U.S. EPA for the general public are indicated in Table 2.6-1 of the NHRERP. The guidelines incorporated in Table 2.6-1 consider the most sensitive members

of the general population: women who are pregnant and infants. As expressed in Section 2.6.3, New Hampshire has chosen to base its protective action decisions on the lowest values cited by the U.S. EPA, that is, a 1 rem whole-body projected dose, and a 5 rem thyroid projected dose. App. Dir. No. 6, Post Tr. 10022 at 6.

10.1.17. In order to utilize the PAGs, projected doses to the general public must be determined. Projected doses must be determined following the incident based on data from (1) plant conditions, (2) release and meteorological conditions, (3) offsite radiological measurements, or (4) combinations of these three factors. (Manual of Protective Action Guides, U.S. EPA, p. 5.1.) NHRERP, Volume 1, Section 2.5.2 provides for estimating the projected doses for the Plume Exposure Pathway EPZ and for reporting projected doses as quickly as possible in terms of whole body and thyroid doses. NHRERP, Volume 1, Section 2.5.3 describes the means by which State of New Hampshire officials will determine projected doses. Calculation techniques for this purpose are explicated in procedures contained in NHRERP, Volume 4A, Appendices N, O, P, and Q. Each of these procedures incorporates the factors identified in the U.S. EPA Manual for determining projected dose. App. Dir. No. 6, Post Tr. 10022 at 6 - 7.

10.1.18. The utility has the responsibility to, and will, classify an event based on plant conditions. At a Site Area Emergency or General Emergency classification level, pre-designated plant conditions will result in specific protective action recommendations from the utility to the State of New Hampshire. If the event is classified as a Site Area Emergency or General Emergency, and plant conditions do not result in a

specific protective action recommendation from the utility to the State, then the appropriate protective action will be reached by utilizing the decision criteria described in modified Section 2.6.7, as discussed *infra*. These criteria are used by decision makers for choosing between sheltering and evacuation, and are sufficiently flexible to be applied to any type of projected or actual release from a nuclear power plant. The decision criteria depicted in modified Figure 2.6-7 of the NHRERP consider the time to release, time of plume arrival at a specified location, time of exposure at the reference location, projected dose, EPA PAGs, time available to make protective action decision, time available to implement protective actions, constraints to implementation of protective action decision, and dose reduction factors pertinent to either sheltering or evacuation. At the final decision step in the process, the decision criteria call for detailed analysis and calculations to determine the comparative effectiveness of shelter and evacuation. App. Dir. No. 6, Post Tr. 10022 at 7 - 8.

10.1.19. NHRERP, Volume 4A, Appendix U contains procedures to be used by accident assessment personnel of the New Hampshire Division of Public Health Services (DPHS) in applying the NHRERP decision criteria. A revision to this procedure is being incorporated into an update of the NHRERP. The State of New Hampshire protective action decision making procedures recognize that the utility will evaluate plant status at the Site Area Emergency and General Emergency classification levels which may result in a protective action recommendation. DPHS accident assessment personnel at the State Incident Field Office (IFO), co-located with the Utility Emergency Operations Facility (EOF) in Newington, New Hampshire.

will obtain plant data in conjunction with utility accident assessment personnel and verify the utility protective action recommendation. App. Dir. No. 6, Post Tr. 10022 at 8 - 9, and Attachment 1.

10.1.20. The State Emergency Operations Center (EOC), IFO, and EOF are activated at the Alert emergency classification level. Prior to the activation of these facilities, the DPHS Emergency Response Initiator is instructed to contact the plant control room for plant status information immediately after being notified of an emergency classification level. The data to be obtained are identified on the notification form utilized by both utility and Division of Public Health Services' procedures. These data will be evaluated by State of New Hampshire accident assessment personnel and decision makers to determine the advisability of precautionary actions. Accident assessment will be initiated at the State EOC and continued through the duration of an emergency at both the State EOC and at the IFO/EOF. DPHS accident assessment personnel at the IFO/EOF will receive firsthand projected dose data and field measurement data, assess the data with utility accident assessment personnel in conjunction with emergency management personnel, perform independent calculations of projected doses and formulate protective action recommendations to be conveyed to the State EOC where the public protective action recommendation decision will be made. App. Dir. No. 6, Post Tr. 10022 at 9 - 10.

10.1.21. The protective action decision criteria discussed in NHRERP, Volume 1, modified Section 2.6.7, contain decision criteria designed for summer, seasonal populations, including seasonal beach populations. These decision criteria incorporate considerations for precautionary actions for the summer, seasonal population based on the

status and prognosis of plant conditions. These provisions of the NHRERP represent a precautionary approach to the implementation of the emergency planning requirements of 10 CFR 50.47(b) and guidance of NUREG-0654/FEMA-REP-1, Rev. 1. They are intended to remove the beach population before the potential for exposure beyond the PAGs exists. To accomplish this, they are implemented based on plant status and conditions that may lead to a release as determined by accident assessment personnel of the utility and conveyed to State of New Hampshire decision makers. App. Dir. No. 6, Post Tr. 10022 at 10. See also Tr. 10434-35.

10.1.22. The NHRERP, Volume 1, Section 2.5.2 advises accident assessment personnel that complete radiological assessment data may not be available or no release may yet be projected when they are considering early, precautionary actions for the summer, seasonal population. Therefore, the current plant status and a prognosis of anticipated plant conditions would be the best indicator of the need for precautionary actions. Procedures contained in NHRERP, Volume 4A, as modified, facilitate consideration of plant status and prognosis of plant conditions by providing for early reporting of plant status data by the utility emergency organization to State of New Hampshire emergency management and public health officials. App. Dir. No. 6, Post Tr. 10022 at 10 - 11.

10.1.23. State of New Hampshire accident assessment personnel and decision makers will consider implementation of precautionary measures as early as the Alert emergency classification level. At the Alert classification level, any releases are expected to be limited to a small fraction of the PAGs, pursuant to NUREG-0654, Appendix 1. App. Dir. No. 6, Post Tr. 10022 at 11.

10.1.24. At the Alert classification level, no offsite action would be ordinarily warranted to protect the public, but its consideration here affords additional time to clear the beaches or prevent additional public access to the beaches. App. Dir. No. 6, Post Tr. 10022 at 11.

10.1.25. The decision criteria of the NHRERP are not intended to dictate automatic implementation of precautionary actions at this classification level. They are intended to facilitate the exercise of judgment on the part of New Hampshire accident assessment personnel and decision makers as to the most prudent course of action given the particular circumstances of an accident situation. App. Dir. No. 6, Post Tr. 10022 at 11.

10.1.26. NHRERP [~~has-been~~] is being updated to reference the emergency classification and plant conditions under which precautionary and protective action recommendations would be made. App. Dir. No. 6, Post Tr. 10022 at 11 - 12, Attach. 2. These updates provide that for these conditions during periods of summer, seasonal population, the recommended precautionary action would be closure or evacuation of Hampton and Seabrook beaches. The intent of this provision is the implementation of measures for the beach population at the first indication of a potential for offsite populations to be affected. Under these conditions, any projected doses to the public would be expected to be below the lowest values of the EPA PAGs. At the Site Area Emergency classification level, offsite protective actions would not be expected to be necessary to protect the public. At this classification level, however, the State will recommend precautionary or protective actions for the beach population.

The description of Site Area Emergency of NUREG-0654, Appendix 1 provides foundation for this decision making concept where it says:

Any releases [are] not expected to exceed EPA Protective Action Guideline exposure levels except near site boundary.

App. Dir. No. 6, Post Tr. 10022 at 11 - 12.

10.1.27. The emergency classification levels are intended to be anticipatory in nature. They are initiated by plant conditions that allow anticipation of later consequences if conditions are not mitigated.

Decision makers are thereby led to appropriate courses of action before offsite consequences are expected. App. Dir. No. 6, Post Tr. 10022 at 12.

10.1.28. Actions prescribed for implementation of precautionary and protective actions for the public, and specifically for the seasonal beach population, are contained in appendices to both the New Hampshire Office of Emergency Management and the Division of Public Health Services procedures. These procedures establish explicit actions for implementation of early, precautionary measures and protective actions for the Hampton and Seabrook beaches. App. Dir. No. 6, Post Tr. 10022 at 13.

10.1.29. A key provision for initiation of protective actions is prompt notification of the public. This is achieved by activation of a system of fixed sirens situated throughout the 17 New Hampshire communities. These sirens provide audible alert coverage of the New Hampshire EPZ communities. For beach areas where precautionary actions may be recommended (i.e., Hampton and Seabrook beaches), sirens have been designated for potential activation in early stages of an emergency for the purpose of initiating precautionary actions. Procedures are in place for these sirens to sound an alert signal and to broadcast a voice message

in both English and French to advise beach populations of actions they should take. Procedures provide for immediate (within 15 minutes of the State's decision) activation of the audible alert system by either Rockingham County Dispatch Center or as a backup, by the Towns of Hampton and Seabrook after precautionary or protective action decisions are made for beach areas. App. Dir. No. 6, Post Tr. 10022 at 13 - 14.

10.1.30. Activation of the audible alert signal will be followed by a voice message over the siren public address system containing emergency instructions for the public. The script of the voice message is: "Attention . . . Attention . . . Because of a problem at Seabrook Station, the beaches are now closed. Please leave the beach immediately. Listen to a local radio station for more information." App. Dir. No. 6, Post Tr. 10022 at 14. and see NHRERP, Vol. 16, pg. IV-18h; Vol. 18, pg. IV-26g.

10.1.31. The sirens have been tested in voice mode and will produce a message intelligible by 90% of the population at a distance that provides for coverage of the entire beach area. Tr. 10600-01.

10.1.32. In addition to the audible alert system, a series of permanent signs which display emergency instructions will be posted in recreation areas, including on the beaches, throughout the EPZ. Currently 18 locations for placement of these signs have been identified in cooperation with the NH Department of Resources and Economic Development. The instructions explain what to do when sirens are heard and identify the emergency broadcast stations from which further information and instructions can be obtained. This information is also displayed in both English and French. Additional public information materials containing the same

information, again in both languages, will be available to transients at motels, hotels, and business establishments throughout the EPZ. App. Dir. No. 6, Post Tr. 10022 at 14-15.

10.1.33. Emergency Broadcast System (EBS) messages are to be broadcast at 15-minute intervals over radio stations identified on the public information signs and in other informational materials for transients. The content of the EBS message will depend on the actions recommended by State of New Hampshire decision makers. EBS messages containing instructions for the transient population, including transients without their own means of transportation, are presently being prepared. App. Dir. No. 6, Post Tr. 10022 at 15.

10.1.34. Precautionary actions planned for implementation for Hampton and Seabrook beaches pertain particularly to the beach areas in an approximate 2-mile radius of Seabrook Station which are those areas that could potentially be most immediately affected. This area is bounded by Great Boar's Head at Hampton Beach to the north ^{2/} and the New Hampshire-Massachusetts border at Route 286 and Ocean Boulevard at Seabrook Beach to the south. App. Dir. No. 6, Post Tr. 10022 at 15.

10.1.35. Precautionary actions prescribed for this area are:

(1) Closing beaches that attract seasonal populations and which are in close proximity to the plant;

2/ Certain procedures in the NHRERP erroneously defined the northern boundary as "Little Boar's Head," which is in North Hampton. The plan and procedures are being amended to correctly identify this boundary as Great Boar's Head, consistent with other plan provisions. App. Dir. No. 6, Post Tr. 10022 at 15-16.

(2) Implementation of traffic control to discourage transient traffic from flowing into the affected areas, including beach areas;

(3) Issuance of public announcements of actions taken through emergency broadcast and normal media channels; and

(4) Monitoring of traffic flow and local conditions in affected areas. App. Dir. No. 6, Post Tr. 10022 at 16.

10.1.36. To facilitate implementation of these actions, the following arrangements have been made:

(1) The Department of Resources and Economic Development (DRED), which has jurisdiction over State beaches and parks, has been designated to assist with closing beaches and parks and adjacent parking areas under its control. Procedures are in place for DRED to utilize lifeguards, park managers, and other available personnel for this purpose.

(2) Specific traffic control points have been designated for State and local police to discourage access of transient traffic into beach areas and to facilitate egress of outgoing traffic. These points are specified for implementation of early precautionary actions.

(3) Procedures are in place at the Rockingham County Dispatch Center and in the RERPs for the Towns of Hampton and Seabrook for activation of public alert sirens and public announcements for the beaches. Additionally, public information personnel at both the Media Center and the State EOC are activated at the Alert classification to issue public announcements to the media.

(4) Utility, State and local emergency response organizations will be activated at the Alert Emergency classification level, to monitor

conditions in the plant and in potentially affected areas. App. Dir. No. 6, Post Tr. 10022 at 16 - 17.

10.1.37. In the event that accident conditions do not allow time for implementation of early precautionary measures for the beach populations, evacuation, nevertheless, continues to be the preferred protective action. App. Dir. No. 6, Post Tr. 10022 at 17.

10.1.38. Numerous factors can influence the effectiveness of evacuation. These include the delay time between accident warning and initiation of evacuation, the radius within which the public is evacuated, evacuation speed, and changing meteorological conditions during the evacuation. App. Dir. No. 6, Post Tr. 10022 at 17 - 18.

10.1.39. Specific and detailed procedures are provided in the NHRERP to ensure early notification and evacuation of the beach population. Administrative provision for and coordination of emergency instructions to be broadcast have been provided in NHRERP, Volume 1, Section 2.1, and Volume 4, NHODA procedures, and Volume 43, State Police Communications Center procedures to ensure the flexibility to get the most appropriate message aired in a timely manner for the spectrum of accident conditions. The conditions covered by these provisions range from where the emergency organizations are fully staffed and are following a slowly developing situation to the case where a severe situation is developing rapidly prior to emergency organizations being able to fully staff or assess the situation. App. Dir. No. 6, Post Tr. 10022 at 18.

10.1.40. New Hampshire relies upon the shelter-in-place concept, which generally provides for sheltering at the location where the instruction to shelter is received. This means:

Those at home are to shelter at home, those at work or school are to shelter in the work place or school building. Transients located indoors or in private homes will be asked to shelter at the locations they are visiting if this is feasible. Transients without access to an indoor location will be advised to evacuate as quickly as possible in their own vehicles (i.e., the vehicles in which they arrived).

App. Dir. No. 6, Post Tr. 10022 at 18 - 19; NHRERP, Vol. 1 § 2.6.5; id. at p. 2.6-6.

10.1.40.1 In response to comments by FEMA, on February 11, 1988, the State provided a detailed explanation of the use it intends to make of sheltering as a protective response for Seabrook area beach populations, along with a rationale in support of its choice of protective actions for this population. App. Dir. No. 6, Post Tr. 10022, Appendix 1.

10.1.41. Beach closure or evacuation of the beach areas are the preferred courses of action for the beach area population. Sheltering as a protective action option for this segment of the population would be considered in only a very limited number of circumstances characterized by one or more of the following conditions:

1. Dose Savings

Sheltering could be recommended when it would be the most effective option in achieving maximum dose reduction. New Hampshire has chosen to base its protective action decision on the lowest values cited by EPA guidance, that is 1 rem whole body dose and 5 rem thyroid dose. The protective action guidelines contained in EPA 520/1-75-001, Manual of Protective Action Guides for Nuclear Incidents, Revised 1980, have been adopted in the protective action procedures of Appendix F and Appendix U.

2. Consideration of Local Conditions

The protective action recommendation procedure of the NHRERP ([modified] Appendix F, Volume 4 and Appendix U, Volume 4A) considers impediments to evacuation when evacuation is the

result of the detailed evaluation utilized in the decision-making process.

3. Transients Without Transportation

When evacuation is the recommended protective action for the beach population, certain transients may be without their own means of transportation. Shelter will be recommended for this category of transients to ensure they have recourse to some protection while awaiting transportation assistance.

App. Dir. No. 6, Post Tr. 10022 at 19 - 20 and Appendix 1.

10.1.42. The number of transients actually without transportation are likely to be few, if any, because those without their own transportation are likely to engage in ridesharing. Tr. 10104-05; Tr. 10108; Tr. 10118; Tr. 10120-21. See also No. 10.1.54, infra.

10.1.43. The choice as to the protective action ordered will, in the last analysis, be based upon the answer to the question of what action will maximize the dose savings to the beach population as a whole. Tr. 10413-14.

10.1.44. The likelihood that shelter will be the action of choice is extremely low. The circumstances required for such a decision would, at a minimum, be that (1) no earlier action had been taken (including precautionary beach closing), (2) that there existed a peak, or close to peak, beach population, and (3) the release was one of known short duration without particulates and projected to arrive at the beach in a short time. Tr. 10719-20. See also Tr. 10720-21. It is unlikely that it will be possible to predict the temporal length or amount of a release with any degree of reliability. Tr. 10720-21; Tr. 11481-82.

10.1.45. In the vast majority of severe accident sequences, if the dose reduction strategy is sheltering first, followed by an evacuation after plume passage, FEMA has found that the total dose reduction would

not be as great as that for the immediate evacuation strategy. FEMA Dir., Post Tr. 13968 at 9; Tr. 14230-31; Tr. 14238.

10.1.46. FEMA has further found that by implementation of the immediate evacuation strategy, dose reductions greater than those to be derived from a "shelter first-evacuate later" concept can be obtained by movement of the population relatively short distances even in the extremely unlikely case where the plume track and the evacuation routes coincide. FEMA Dir., Post Tr. 13968 at 11.

10.1.47. In particular, FEMA points out that although it is possible to hypothesize situations where greater dose savings may occur as a result of a "shelter first" approach and it may also be that, in a given circumstance, 20/20 hindsight might reveal that the "shelter first" option would have been the better choice, the fact is that when the decision-maker actually has to make the decision, too many unknowns will exist to permit a conclusion in favor of "shelter first" and, therefore, the option selected should, and will, be evacuation of persons within beach areas 2-3 miles from the plant, because this option gives the maximum protection against the biggest problem which is reasonably likely to exist, i.e., "ground shine." Tr. 14240-44; Tr. 14255-56. While this is true generically, it is also particularly true for Seabrook beach areas given the low dose reduction factor (d.r.f.) afforded by typical shelters in the area. Tr. 14243-44.

10.1.48. FEMA has further found that the requirement for a range of protective measures has been satisfied in the NHRERP even though the State of New Hampshire has chosen not to shelter the summer beach population except in limited circumstances; that, with respect to the

summer beach population, the planning elements J.9. and J.10.m^{3/} of NUREG-0654 have been met and that there exists a technically appropriate basis for the choice made by the State of New Hampshire not to shelter the summer beach population except in very limited circumstances. FEMA Dir., Post Tr. 13968 at 11; Tr. 13294; Tr. 14075. FEMA has found that extant provisions of NHRERP are inadequate, without further implementing detail for the limited and improbable circumstances in which ad hoc sheltering in place would be an option for the beach population which is not transportation dependent [~~dependant~~] Tr. 13294; Tr. 14075. See also Tr. 14254.

10.1.49. There are, in fact, many emergency plans for nuclear power plants with no sheltering provisions in some circumstances which have been approved by FEMA. Tr. 14120; Tr. 14130. And prior to the filing of certain prefiled testimony, never actually offered, in this

3/ These planning elements provide as follows:

J.9. Each State and local organization shall establish a capability for implementing protective measures based upon protective action guides and other criteria. This shall be consistent with the recommendations of EPA regarding exposure resulting from passage of radioactive airborne plumes, (EPA-520/1-75-001) and with those of DHEW (DHHS)/FDA regarding radioactive contamination of human food and animal feeds as published in the Federal Register of December 15, 1978 (43 FR 58790).

J.10. The organization's plans to implement protective measures for the plume exposure pathway shall include:

m. The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions. This shall include expected local protection afforded in residential units or other shelter for direct and inhalation exposure, as well as evacuation time estimates (footnote omitted).

proceeding, the consistent position of FEMA had been that a sheltering alternative was not a prerequisite to a reasonable assurance finding. Tr. 14130.

10.1.50. A number of allegations were made to the effect that the above described findings of FEMA should be accorded little weight because they were the result, not of sound technical and legal analysis, but rather, improper pressure placed upon FEMA by the "White House," the Governor of New Hampshire, the Applicants and the NRC. The Board permitted extensive inquiry into the development of the FEMA position alluded to above, including searching examination into the reasons for the change in position represented by FEMA's testimony as given as opposed to that originally prefiled in the proceeding. See generally Tr. 12645 - 13298.

10.1.51. As a result of this inquiry, which included extensive examination and cross-examination of FEMA's Associate Director for State and Local Programs and Support, FEMA's Deputy Associate Director for State and Local Programs and Support, and FEMA's Assistant Associate Director for the Office of Natural and Technological Hazards, State and Local Programs and Support, the Board is fully satisfied that the FEMA position on the so-called beach shelter issue is in no way the result of any improper influence from any source. Tr. 12649-782; Tr. 13253-54; Tr. 13272-75. See also Tr. 14039; Tr. 14127; App. Ex. 38 at 2-3. ^{4/} Rather,

4/ For instance, Mr. Thomas alleged, based on a hearsay account of a meeting which he did not attend, that the NRC's Executive Director for Operations had threatened to "wage war" on FEMA if FEMA did not change its position on the beach issues. Tr. 13774-78, Tr. 13784-86.

that change in position was quite clearly the result of extensive and thorough discussions within FEMA, as that agency sought to arrive at a correct legal and technical position with respect to these issues. Id. See also Tr. 8541-43; App. Ex. 38. 5/

10.1.52. Indeed, the Board finds that the FEMA testimony initially prefiled in this proceeding, but never actually offered, which reached conclusions opposite to those finally taken by FEMA, was, in fact, at variance with what had been the consistent position taken by FEMA with respect to a number of nuclear power facilities, Tr. 14130, including the Shoreham facility, Tr. 14178.

(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

This account was refuted by FEMA officials who were at the meeting, and who testified that they never perceived that the EDO or NRC Staff had ever threatened FEMA concerning these matters. E.g., Tr. 12721-27; Tr. 12751-55; Tr. 13255-57.

5/

Many of the Intervenor's' proposed findings with respect to the beach shelter issues relied upon testimony and exhibits concerning FEMA's prior position on this issue. Those materials, however, were admitted for historical purposes only, and as such it was understood that they were not to be -- and they were not -- subjected to cross-examination on their merits or validity. Accordingly, no use may properly be made of those materials other than as an historical record of positions which were, at some prior point in time, espoused by certain persons within FEMA. Further, while Mr. Thomas was initially designated to appear as FEMA's witness on beach issues, he ultimately withdrew from that position. Mr. Thomas was never sponsored by any other party as a witness on the merits of these matters, nor was there any understanding that his testimony was to be cross-examined on the merits.

Similarly, many of the Intervenor's' findings, particularly those filed by NECNP, focused on the historical development of FEMA's position. We need not, and do not, address those at length herein, as they are largely not material to this decision.

10.1.52.1. FEMA, including FEMA Region I, highly values the advice of its Regional Assistance Committee (RAC). Tr. 12713; Tr. 13409. ^{6/} However, FEMA's initial position was filed without review by the RAC -- while, in contrast, its final position took the RAC's subsequent advice into consideration and was consistent with the views of the majority of the RAC members. Tr. 8838; Tr. 8883; Tr. 11913-15; Tr. 11917-57; Tr. 12013-14; Tr. 12042-43; Tr. 12222-24; Tr. 12762-63; Tr. 13826-27; Staff Ex. 2(a) at (5) and (76); Staff Ex. 3; App. Ex. 38 at 3. ^{7/}

10.1.52.2. The NRC and FEMA have approved emergency plans for other nuclear plants where only sheltering or evacuation may have been available as a protective action for some portion of the population in some accident scenarios. Tr. 14130.

10.1.53. For implementation of the sheltering protective action option under any of the three conditions discussed in paragraph 10.1.41, supra, New Hampshire decision makers will rely on the mechanisms now in place, or to be put in place, in the NHRERP for recommending shelter to the public whether on the beach or any place else. These mechanisms include rapid assessment of accident conditions; activation of the public alert system, which include the beach public address system; and EBS

6/ The RAC is an interagency advisory committee comprised of the representatives of nine federal agencies: FEMA, NRC, the Environmental Protection Agency, and the Departments of Energy, Interior, Health and Human Services, Transportation, Commerce (NOAA), and Agriculture. FEMA Dir. Post Tr. 3088 at (5).

7/ While Mr. Thomas of FEMA at first failed to disclose fully that the RAC disagreed with FEMA's initial position on beach shelter issues (e.g., Tr. 3123-26, Tr. 3138, Tr. 5112-13, Tr. 5119-30), he ultimately conceded this point after the facts were disclosed by NRC Staff witnesses. See, e.g., Staff Ex. 2A; Tr. 13596.

announcements. It is expected that people will comply with ERS announcements to take shelter and that owners/operators of public access facilities will make their facilities available for this very limited instance. App. Dir. No. 6, Post Tr. 10022 at 20.

10.1.54. Should evacuation be the recommended protective action for the beach population, certain transients may be without their own means of transportation. Their number is estimated at 2% of the peak beach population. Recent estimates of the peak beach population for Hampton and Seabrook were made using the results of vehicle occupancy rate surveys and counts of projected peak number of vehicles. The summer weekend peak population estimates calculated 23,841 for Hampton Beach South and 7,398 for Seabrook Beach. Use of the 2% estimate and the peak population figures yields peak numbers of transients without transportation of 477 at Hampton Beach and 148 at Seabrook Beach. These are considered to be peak numbers because they do not take into account ride sharing which FEMA's Regional Assistance Committee advises is a significant factor in estimating transportation resource requirements. With ride sharing considered, it is believed that more than enough capacity exists for all transients without their own transportation. However, bus routes have been planned and sufficient bus resources identified to provide transportation for persons in the beach areas including summer transients who may lack their own. The NHRERP is being amended to provide protection to the transients while they are awaiting transportation assistance. App. Dir. No. 6, Post Tr. 10022 at 20 - 21.

10.1.55. The NHRERP will identify potential shelter locations for the transient beach population without transportation. A shelter

study performed by Stone & Webster, App. Ex. 2, and analyzed by New Hampshire Yankee, App. Dir. No. 6, Post Tr. 10022, Attach. 3, was provided to the State as a resource document. In its review, the State found the document to be of some value. It identified a large number of shelters that may serve as a pool from which public shelter choices will be made. The appropriate EBS message will be modified to provide for instructions to persons on the beach who have no means of transportation to go to public shelters to await assistance in the event evacuation of the beach is recommended. App. Dir. No. 6, Post Tr. 10022 at 21; id. App. 1 at 10.

10.1.56. Although the State of New Hampshire has formed a judgment that adequate shelter exists for the beach population under the circumstances in which sheltering may be required, Tr. 10693-95; Tr. 10698, the State does not intend at this time to incorporate the shelter study or the analysis of this study into the NHRERP nor rely on the shelter study as a planning basis. As a compilation of available resources, the shelter study may be used, as previously noted, to assist in identifying those public buildings to which beach transients without their own means of transportation may be directed for shelter while awaiting transportation assistance. App. Dir. No. 6, Post Tr. 10022 at 22.

10.1.57. Despite this fact a great deal of testimony was offered by the intervenors in criticism of the Stone & Webster shelter study. Goble et al. Dir., Post Tr. 10963 at 6 - 7, 36 - 67; Moughan et al. Dir., Post Tr. 10857, passim; Hollingworth Dir., Post Tr. 10832, passim.

10.1.58. In particular, Mass AG and TOH presented evidence that many of the owners of the shelters listed in the shelter study had never been contacted by Stone & Webster, that a number of the shelters in fact were unsuitable for various reasons, and that a number of the owners claimed that in the event of a real emergency, they would not open their establishments to shelterees. Goble et al. Dir., Post Tr. 10963 at 6 - 7, 36 - 67; Moughan et al. Dir., Post Tr. 10857, passim; Hollingworth Dir., Post Tr. 10832, passim.

10.1.59. The testimony was not altogether consistent as in some cases the survey sponsored by TOH Moughan et al. Dir., Post Tr. 10857, attach. & supp. attach., and that sponsored by Mass AG, Goble et al. Dir., Post Tr. 10963, attach. 12, showed different responses with respect to the same properties. Compare TOH Ex. 18, Attach. at 24, 21, 4, & Supp. Attach. at 7, 9, 16, 47, 55, 77, 48, 63 with Mass. AG Ex. 19 at 36, 28, [120], 129, 83, 14, [12- & 12A] 96 and 86A (back of page), 82, 51, 53, 107.

10.1.60. In addition, the survey sponsored by Mass AG has a built in bias in that it identified the survey as being done for the Massachusetts Attorney General, Tr. 11423; Mass. AG Ex. 19, passim; which is clearly a so-called "value position group," see Tr. 11055-56. Admittedly, no attempt was made to ascertain whether responses to the survey were motivated primarily by personal feelings against the utilities and the plant. Tr. 11550-51; [115514] Tr. 11582. Indeed, so concerned with this potential bias problem was one of Mass AG's witnesses that when he sought to survey a sample of shelters he [~~misrepresented~~] identified himself to the realtor selecting the sample as a potential renter rather than identifying himself as associated with Mass AG. Tr. 11346-47.

This problem of potential bias in the Mass AG's survey response drew criticism from another of Mass AG's witnesses. Tr. 11090-91.

10.1.61. Dealing with the issue of shelter refusal first, there appears to be general agreement that preemergency statements of intention are a poor predictor of actual performance of an emergency. App. Reb. No. 3, Post Tr. 9154 at 2-3; App. Reb. No. 4, Post Tr. 9155 at 10-11; App. Dir. No. 7, Post Tr. 5622 at 143-49. Indeed, the Mass AG witnesses acknowledge this to be the case, particularly here where the shelter survey responses admittedly may reflect local opposition to the Seabrook plant. Goble et al. Dir., Post Tr. 10963 at 81. However, they go on to [but] argue that Seabrook's situation may be unique for various enumerated reasons. Goble et al. Dir., Post Tr. 10963 at 80 - 84; Tr. 11050. TOH's witnesses seemed to offer a similar opinion concerning shelter unavailability, Moughan et al. Dir., Post Tr. 10857 at 6, but admitted to lacking any competence in the area of expertise involved, Tr. 10895-99.

10.1.62. There is no basis of record for finding that the population surrounding Seabrook is unique except insofar as it may be that there are many people said to be in the area with strong feelings against the Seabrook plant. See Goble et al. Dir., Post Tr. 10963 at 81. However, what empirical data exists indicates that even those who have strong feelings about the owners of the source of a technological emergency or the source itself, would, nevertheless, act with compassion and assist those in need. Tr. 10136-38. It was also suggested that persons contaminated with radiation might be refused shelter, Goble et al. Dir., Post Tr. 10963 at 82 - 83, but contamination is not likely to be

such a factor in the case of an emergency surrounding a nuclear plant when sheltering is selected as the protective action. Tr. 10131-32.

10.1.63. As to the second major point, i.e., shelter unsuitability: we note that the shelter survey indicates that some three times as much potential shelter space as is necessary is available, App. Dir. No. 6, Post Tr. 10022, attach. 3 at 1; Tr. 10687-88; with an average d.r.f. of better than 0.9, Tr. 10764-65. Materials offered by the intervenors as to unsuitable accommodations included within the study, even if fully credited, only eliminate some [~~30%~~] 20% of the existing shelter potential. Compare Goble et al. Dir., Post Tr. 10963 at 58 with App. Ex 2 at 7. Indeed, even accepting Mass AG's witnesses' estimate of the peak population involved and their further estimates of inaccessible shelter space, see Goble et al. Dir., Post Tr. 10963 at 35, there is sufficient available space to adequately accommodate that population. Tr. 11415-18. Compare Tr. 11606-13. This is especially true if one considers the degree of spontaneous evacuation which the Mass AG's witnesses expect to occur. See Tr. 10999-11001.

10.1.64. In addition to the above-referenced testimony, Mass AG offered testimony concerning other aspects of the beach sheltering issue.

10.1.65. One point raised was that it was necessary to have in place a sheltering program at Seabrook because this would be the preferable course of action when the accident was fast breaking and involved only a "puff" release. Goble et al. Dir., Post Tr. 10963 at 15 - 16.

10.1.66. The problem with this postulation, as the Mass AG's witnesses agree, is that decision makers are generally not able to predict with any reliability that any particular release to occur will, in fact,

be a "puff" release. Tr. 10372-73; Tr. 10374-75; Tr. 11481. See also Tr. 11680-81.

10.1.67. In addition, witnesses for the Mass AG offered testimony to the effect that it would take anywhere from one hour and forty minutes and four hours and thirty five minutes to accomplish sheltering of the beach population. Goble et al. Dir., Post Tr. 10963 at 70 - 80. Prescinding from the fact that the elements of the model which produced these figures included an "orientation" period derived from studies of behavior after accidents have occurred, Tr. 10980, and the fact that acceptance of the theory would require us to accept the hypothesis that 90% of the beachgoers will not move from the beach for a period of 38 - 72 minutes after a siren sounds, Tr. 11032-33, the entire exercise would seem to support the view of the State of New Hampshire that sheltering virtually never will be the preferred alternative when the beaches are crowded.

10.1.68. Mass AG also offered testimony as to the number of cars that would still remain within a three mile radius of the plant at various times after beach closing. Adler et al. Dir., Post Tr. 10911, passim.

10.1.69. Assuming that one accepts the Adler et al. view of how many cars are there at the time of the accident, which would mean accepting population figures based upon highly theoretical parking space counts, an approach which we have already rejected, No. 6.1.142, supra, the fact is that the effect of his testimony is to demonstrate that evacuation will result in substantial dose savings inasmuch as several thousand cars with more than twice as many people will leave in a relatively short time. Tr.

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10920-24. Thus it is difficult to see how this testimony undercuts the New Hampshire decision to utilize evacuation as the protective action of choice in almost all cases.

10.1.70. Specific plans have been developed for campgrounds located in the various municipalities in the New Hampshire portion of the Seabrook Station EPZ and are to be included in the appropriate appendix to each of the local plans. App. Dir. No. 6, Post Tr. 10022 at 22 - 23.

10.1.71. All campgrounds in the New Hampshire portion of the EPZ are covered by the system of fixed sirens. As a supplement to the sirens, campgrounds will be offered tone-alert radios which will enable proprietors or managers to be advised of any protective measures recommended for the public. The tone-alert radios will be activated by the EBS radio signal over which emergency instructions will be transmitted. A supply of public information materials, including posters and brochures, will be provided to all campgrounds; and the plans call for campground operators to ensure that public information materials containing emergency instructions are available for users of their facilities. App. Dir. No. 6, Post Tr. 10022 at 23.

10.1.72. Therefore, there are two methods of campground notification. One is the siren signal. The second is the tone-alert radios by which operators will be alerted and which provide notification and emergency instructions. App. Dir. No. 6, Post Tr. 10022 at 23.

10.1.73. The campground plans provide that at a Site Area or General Emergency, campgrounds may be directed to undertake a protective response or to close on a precautionary basis. If the facility is advised to close as a precaution or if there is a sheltering recommendation

announced for any part of the EPZ, campground operators are to instruct campers to leave the area. App. Dir. No. 6, Post Tr. 10022 at 23 - 24.

10.1.74. If an evacuation is recommended in any part of the EPZ, campground operators are to make an accounting of all current users of the campground and instruct campers to evacuate the area by evacuation routes specified in the campground plan. App. Dir. No. 6, Post Tr. 10022 at 24.

10.1.75. The maximum capacity of available campgrounds in the Seabrook Station EPZ is approximately 8500 campers. This maximum capacity is distributed over a total of 1889 camp sites in 18 campgrounds situated within 11 of the 17 municipalities of the Seabrook Station EPZ. Thus, campground users constitute neither a significantly large number nor an inordinate concentration of persons in any one area of the EPZ. Therefore, it is reasonable to conclude that campground users would be able to depart the area rapidly whether their leaving was to occur prior to an evacuation of the general population or during such an evacuation. Maximum total vehicle capacity of campgrounds is approximately 2950, or 1 vehicle for every 2.9 campers. Five of these campgrounds are day and youth camps for which nineteen buses have been allocated for emergency response use. Consequently, there is ample transportation capacity for campground users to depart from the area. App. Dir. No. 6, Post Tr. 10022 at 24.

10.1.76. Except for institutionalized populations, sheltering and evacuation will be implemented on a municipality by municipality basis in New Hampshire. One town may be advised to take shelter, while an abutting town is advised to evacuate or take no protective action.

Therefore, shelter areas in New Hampshire are defined as municipalities. The decision to implement sheltering or evacuation of a particular municipality in the EPZ will be based on a prediction that projected doses to the general population will equal or exceed EPA PAGs for these areas. App. Dir. No. 6, Post Tr. 10022 at 25.

10.1.77. NHRERP, Volume 1, Table 2.6-4 provides representative values of cloud dose reduction factors for typical structures that can be found in the Seabrook Station EPZ. On the basis of these values, New Hampshire decision makers can approximate the level of protection that would be afforded to the population by a protective action recommendation to shelter. The d.r.f. values range from 0.2 or less (80% protection) for large office or industrial type buildings to 0.9 (10% protection) for wood-frame houses with no basements. Based on the documents, Structure Shielding from Cloud and Fallout Gamma Ray Sources for Assessing the Consequences of Reactor Accidents, EG&G, Inc., Las Vegas, Nevada, EGG-1183-1670 (1975) and Public Protection Strategies for Potential Nuclear Reactor Accidents: Sheltering Concepts With Existing Public and Private Shelters by Aldrich, et al., February 1978, and their analysis of typical structures to be found in the Northeast region of the United States, Seabrook Station EPZ structures have a cloud dose reduction factor of at least 0.9; and this is, therefore, a reasonable dose reduction factor to be assumed by the NHRERP. As an assumed dose reduction factor, New Hampshire decision makers would apply this factor to calculations of projected doses to determine the level of protection that would be provided by implementation of sheltering. The only exceptions to this rule are certain institutions, including hospitals, nursing homes, and

correctional facilities, where risks from evacuation are higher than that for the general population. For these institutions, shielding factors of the individual structures have been determined and would be applied to calculation of projected doses to the resident populations according to instructions contained in NHRERP, Volume 4A, Appendix U. App. Dir. No. 6, Post Tr. 10022 at 25 - 26; App. Ex. 34.

10.1.78. Because of their location in the Northeast region of the United States, year-round residences in the Seabrook Station EPZ can be expected to consist of substantial construction materials and to be of airtight construction. Essentially any indoor location, even a wood-frame house with no basement, provides at least a 10% reduction for a cloud source. This assessment of the relative shelter effectiveness of structures in the Seabrook Station EPZ indicates that typical residential structures afford a cloud shielding factor of at least 0.9. App. Dir. No. 6, Post Tr. 10022 at 26 - 27.

10.1.79. It is reasonable to assume that schools and day care centers share the prevailing characteristics of typical structures of the Seabrook Station EPZ, and are airtight, winterized structures. App. Dir. No. 6, Post Tr. 10022 at 27.

10.1.80. Because protective action recommendations for the general population are applied to schools and day care centers, evaluation of protection afforded by these structures would neither make them more suitable for sheltering, nor affect the choice of the sheltering option. Specific protective action recommendations would not be made for schools (which, for the purpose of the plan, include day care centers) based on the relative sheltering factors of their structures. The NHRERP

explicitly says in NHRERP, Volume 4A, Appendix U that sheltering factors other than 0.9 are not to be considered for school facilities. Schools (and day care centers) will follow the same protective actions prescribed for the general population. App. Dir. No. 6, Post Tr. 10022 at 27.

10.1.80.1. The Board concludes, as did FEMA and the majority of the RAC, that the NHRERP's provisions for Seabrook area beach populations are adequate with respect to NUREG-0654 planning criteria J-9 and J-10(m). See Tr. 8686-90; Tr. 8695-98; Tr. 8701-03; Tr. 11922-57.

10.2. Rulings of Law

10.2.1. FEMA findings constitute a rebuttable presumption on questions of adequacy and implementation capability of State and local emergency plans. 10 CFR 50.47(a)(2).

10.2.1.1. NUREG-0654 provides guidance to emergency planners with respect to the manner in which the Commission's emergency planning regulations may be satisfied. As set forth therein (at 6):

The overall objective of emergency response plans is to provide dose savings (and in some cases immediate life saving) for a spectrum of accidents that could produce offsite doses in excess of Protective Action Guides (PAGs).

10.2.1.2. 10 C.F.R. § 50.47(a) requires, as a condition of licensing, that the NRC find there is "reasonable assurance that adequate protective measures can and will be taken" in the event of an emergency. This does not equate with intervenors' insistence that an "adequate level of protection" be afforded for every postulated accident sequence or emergency. Indeed, it is possible to postulate for any nuclear plant, some severe accident which, regardless of its extremely low likelihood, may result in unavoidable severe and/or life-threatening consequences.

This potential does not contravene the Commission's emergency planning regulations.

10.2.1.3. Further, NUREG-0654 indicates that planning is not required for particular accidents or accident sequences:

No specific accident sequence should be isolated as the one for which to plan because each accident could have different consequences, both in degree and nature.

NUREG-0654, at 6.

10.2.2. There is no requirement in the regulations or applicable law that sheltering be available as an option to evacuation for all persons in a nuclear power plant EPZ. ASLB MEMORANDUM AND ORDER (Ruling on Contentions and Establishing Date and Location for a Hearing) (April 29, 1986) at 43 - 45.

10.2.2.1. The requirement in 10 C.F.R. § 50.47(b)(10) that "a range of protective actions have been developed for the plume exposure pathway EPZ for emergency workers and the public" does not require that a range of protective actions exist for each particular accident scenario that may be postulated. Similarly, there is no requirement that there be a range of protective actions, including both sheltering and evacuation, for all accidents at all times and at all locations within the EPZ. For example, hurricanes or severe winter storms at many nuclear plants may preclude evacuation of some or all of the population, leaving only sheltering as an available protective action for those persons. Similarly, the lack of sheltering as an effective option in the vicinity of a given plant may result in evacuation being the only available protective action for some or all of the population.

10.2.3. There is no requirement that the Applicant demonstrate that any preset minimum dose savings can and will be achieved in all circumstances. Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC 22, 30 (1986); Southern California Edison Co. (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528, 533 (1983); Notice of Rulemaking, Licensing of Nuclear Power Plants Where State and/or Local Governments Decline to Cooperate in Offsite Emergency Planning, 52 Fed. Reg. 6980, 6982 (March 6, 1987); Notice of Promulgation of Rule, Evaluation of the Adequacy of Off-Site Emergency Planning for Nuclear Power Plants at the Operating License Stage Review Where State and/or Local Governments Decline To Participate in Off-Site Emergency Planning, 52 Fed. Reg. 42078, 42084-85 (Nov. 3, 1987); Ruling Precluding Admission of Sholly et al. Testimony, Tr. 5594 - 0009.

10.2.3.1. Planning is not required to assure the avoidance of any particular dose level or to demonstrate that any or all of an EPZ can be evacuated within any particular time frame.

10.2.4. Sheltering is a protective action consisting of doing the best that can be done in the circumstances of the area as it exists. It does not require a detailed house to house or building to building canvas to determine exactly what space is, or will be, available. See Commonwealth Edison Co. (Byron Nuclear Power Station, Units 1 and 2), LBP-84-2, 19 NRC 36, 268-69 (1984). Nor does it require the construction of additional shelters or shelters affording any particular level of dose protection. Southern California Edison Co. (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528, 533 (1983); NUREG-0396, EPA 520/1-78-016, "Planning Basis for the Development of

State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants" (December 1978), at 13-14, referred to in NUREG-0654 at 6.

10.2.5. If the Board were to accept Mass AG's position that effective sheltering is, in fact, impossible for the beach population at Seabrook, then the result of the Board's evaluation would not change, because, if sheltering is not a possible protective action, then [~~no investigation of it is required and~~] the plan would properly assume that sheltering is not an alternative and evacuation would be the protective action of choice. [~~Acceptance of this premise also would, of course, have the effect of meeting much, if not all, discrete ETE issues as they affect beach populations, because if there is no shelter alternative, then beach population evacuation will be ordered every time without reference to the possible radiation consequences.~~

10.2.5.1 Where, as here, an emergency plan provides reasonable and feasible dose savings available under the circumstances for the population at large, the Commission's emergency planning regulations are satisfied.

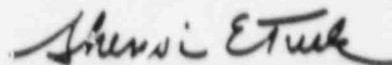
10.3. Conclusions

10.3.1. The rebuttable presumption accorded to FEMA's findings as to adequacy and implementability has not been overcome by reliable and probative evidence in this proceeding.

10.3.2. The Board finds and rules that adequate consideration has been given by the State of New Hampshire to the protective action of sheltering for Seabrook area beach populations in the NHRERP.

10.3.3. Consistent with 10 C.F.R. § 50.47(a), the NHRERP provides reasonable assurance that adequate protective measures can and will be taken, with respect to Seabrook area beach populations, in the event of a radiological emergency.

Respectfully submitted,



Sherwin E. Turk
Senior Supervisory
Trial Attorney

Dated at Rockville, Maryland
this 26th day of August, 1988

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

DOCKETED
USNRC

88 SEP -1 P1:18

In the Matter of

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.

(Seabrook Station, Units 1 and 2)

OFFICE OF THE SECRETARY
DOCKET NO. 50-443 OL
50-444 OL
Off-site Emergency Planning

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW WITH RESPECT TO SHELTERING ISSUES" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or, as indicated by an asterisk, by deposit in the Nuclear Regulatory Commission's internal mail system, this 26th day of August 1988.

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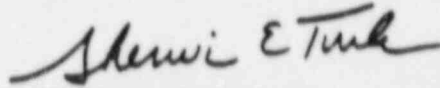
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