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April 18, 1989

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
before the  
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
PUBLIC SERVICE COMPANY	)	Docket Nos. 50-443-OL
OF NEW HAMPSHIRE, <u>et al.</u>	)	50-444-OL
	)	
(Seabrook Station, Units 1	)	(Offsite Emergency
and 2)	)	Planning Issues)
	)	

APPLICANTS' FINAL TRIAL BRIEF

INTRODUCTION

This trial brief addresses the contentions which, by virtue of prior orders of this Board and stipulations of the parties,<sup>1</sup> have been set for hearing commencing March 21, 1989. This trial brief contains the entire contents of the trial brief filed by Applicants on February 28, 1989. It

<sup>1</sup> Memorandum and Order (Setting Schedule for Hearing (Jan. 24, 1989) at 2-3; Joint Stipulation Regarding Status of Admitted Contentions (Feb. 7, 1989) at 10; Stipulation Regarding Filing Date for Testimony on Evacuation Bed Buses (Feb. 9, 1989) at 1-2; Order Granting Motion for Approval of Stipulation (Feb. 10, 1989).

also references contentions which have been disposed of already and also addresses the contentions which were made part of the second phase of testimony filing. It covers every contention admitted as to either the SPMC or the Graded Exercise. This trial brief is broken into two major sections. The first section sets forth the Applicants' overall perception of the case and, in particular, the effect of the rebuttable presumptions accorded the Applicants in this proceeding by virtue of the provisions of 10 CFR § 50.47(a)(2). The second section addresses the contentions at bar within certain categories, describing, in summary form, the Applicants' testimony as to each. The discussion of each SPMC contention will also set out, where applicable, references to the Federal Emergency Management Agency (FEMA) findings set out in the Review and Evaluation of the Seabrook Plan for Massachusetts Communities ("SPMC Report") (App. Ex. 43C) which are of relevance to the contention. Further, the Applicants' understanding of the prefiled testimony of the opposition, and the "legal principles" applicable (including law of the case established in the Partial Initial Decision issued in the NHRERP portion of this proceeding) are set out.<sup>2</sup>

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<sup>2</sup> Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), LBP-88-32, 28 NRC (Dec. 30, 1988) (hereafter referred to as "PID" and cited to the Slip Opinion).

I. APPLICANTS' OVERALL POSITION WITH RESPECT TO THE LITIGATION AS TO THE EFFECT OF THE REBUTTABLE PRESUMPTIONS IN EFFECT AS THE RESULT OF THE FEMA FINDINGS.

A. Description and Scope of the Rebuttable Presumptions.

Under NRC regulations, emergency plans for nuclear facilities are to be reviewed for adequacy and capability of implementation by FEMA, and, "[i]n any NRC licensing proceeding a FEMA finding will constitute a rebuttable presumption on questions of adequacy and implementation capability." 10 CFR § 50.47(a)(2). In the case at bar, the emergency plan of interest, known as the Seabrook Plan for Massachusetts Communities (SPMC), has, subject to the installation of the vehicular alert and notification system (VANS), been found to be adequate and implementable by FEMA. This general finding is set forth in a letter, under date of December 14, 1988, to The NRC Executive Director of Operations from FEMA's Associate Director for State and Local Programs and Support.<sup>3</sup> It constitutes a rebuttable presumption that SPMC is adequate and capable of implementation. This overall finding, in turn, is based upon the SPMC Report (App. Ex. 43C) which sets forth FEMA's detailed review of SPMC and FEMA's Exercise Report (App. Ex.

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<sup>3</sup> Letter Peterson to Stello (Dec.14, 1988) at 2.

43F) which sets forth FEMA's review of the Graded Exercise. The SPMC Report contains a number of detailed findings of adequacy by FEMA with respect to various aspects of SPMC. The exercise report does the same with respect to the exercise. These findings too, of course, operate as rebuttable presumptions under 10 CFR § 50.47(a)(2). In addition, the fact that FEMA was able to reach its overall finding on the basis of those reports, constitutes a rebuttable presumption that the matters addressed in the SPMC Report and the Exercise Report are the only matters which require review in order to reach the overall general conclusion. In other words, the intervenors are precluded from arguing that some matter not reviewed by FEMA demonstrates the SPMC to be inadequate or not capable of implementation unless they first overcome the presumption that the matter they rely upon is irrelevant or unnecessary to an appropriate review of SPMC adequacy and implementation.

**B. The Effect of the Rebuttable  
Presumption Under 10 CFR §  
50.47(a)(2).**

In a comprehensive analysis of the then new 10 CFR § 50.47(a)(2), a Licensing Board ruled that the rebuttable presumption created by 10 CFR § 50.47(a)(2) should be viewed as having the same status as presumptions were accorded under

Rule 301 of the Federal Rules of Evidence.<sup>4</sup> The Licensing Board further held that:

"a rule 302 presumption dissolves in the face of contradictory evidence, provided of course that such evidence meets the always applicable tests that it is reliable."<sup>5</sup>

While there is at least one subsequent Licensing Board decision that suggests that any evidence, no matter how ephemeral, can rebut the 10 CFR § 50.47(a)(2) presumption,<sup>6</sup> the better reasoned decisions have adhered to the doctrine

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<sup>4</sup> Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), LBP-81-59, 14 NRC 1211, 1463 (1981).

<sup>5</sup> Id. at 1465 (emphasis supplied).

<sup>6</sup> Carolina Power & Light Company (Shearon Harris Nuclear Power Plant), 23 NRC 294, 365 (1986) (holding that 10 CFR § 50.47(a)(2) "means that a FEMA position may be accepted by a Licensing Board if that issue is uncontested. But if an intervenor contests such an issue, the rebuttable presumption 'dissolves' and the FEMA testimony is given no special weight 'beyond that to which [it] would be entitled by virtue of the expertise of the witnesses and the bases presented for their views'"). As authority for this proposition, the Licensing Board cited the Appeal Board decision which affirmed the TMI Licensing Board decision discussed above. Supra, n. 4 and accompanying text. However, the Appeal Board decision cited, noted that the Licensing Board ruling under discussion was not appealed to it, and what the Shearon Harris Licensing Board was relying upon was a truncated recitation by the Appeal Board of what the Licensing Board had, in fact, held. See Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit 1), ALAB-698, 16 NRC 1290, 1298 (1982).

that the evidence necessary to "dissolve" the presumption must be "reliable and probative"<sup>7</sup> or "persuasive."<sup>8</sup> The Commission has recently stated that at least as applied in the setting of exercise litigation, under 10 CFR § 50.47(a)(2) FEMA "findings are entitled to presumptive validity"<sup>9</sup> and that despite an earlier Appeal Board decision which suggested that rebuttal could be accomplished entirely by cross-examination,<sup>10</sup> the failure of an intervenor to prefile testimony in support of a contention would result in the contention being considered in default by virtue of the 10 CFR § 50.47(a)(2) presumption.<sup>11</sup> In short, then, in the setting of this case, the opponents of the facility are under an obligation to come forward with reliable, probative, and persuasive evidence on all contentions, and absent such an effort on their behalf, the contention must, by virtue of the

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7 Cincinnati Gas & Electric Company (Wm. H. Zimmer Nuclear Power Station, Unit 1), LBP-82-68, 16 NRC 741, 746 (1982).

8 Southern California Edison Company (San Onofre Nuclear Generating Station, Unit 2), LBP-82-39, 15 NRC 1163, 1213 (1982).

9 Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), CLI-88-9, 28 NRC \_\_\_\_ (Dec. 1, 1988), Slip Op. at 4.

10 See Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-864, 25 NRC 417, 428 (1987).

11 CLI-88-9, supra, at 5.

10 CFR § 50.47(a)(2) presumption be resolved in favor of the Applicants.

## II. ANALYSIS OF SPECIFIC CONTENTIONS

### A. EVACUATION TIME ESTIMATES

#### JI Contentions Nos. 1 - 3

The Contentions:

#### JI 1

##### Contention

No evacuation time estimate study has been done to assess what the realistic evacuation times would be in the Massachusetts portion of the EPZ in light of the special difficulties, circumstances, and delays in conducting an evacuation in Massachusetts under the SPMC. The Final Report of the KLD Evacuation Time Estimate Study and Traffic Management Plan Update, completed in August 1986, did not take into account these special circumstances, difficulties, and delays. A new evacuation time estimate study needs to be conducted before the SPMC can meet the requirements of 10 C.F.R. 50.47(a)(1), 50.47(b)(10), NUREG 0654, Rev. 1, Supp. 1, Section II.J.10.e, and Appendix 4 of NUREG 0654, Rev. 1.

##### Basis

#### A. [MAG 32A]

While reference is made at various points in the SPMC to the KLD Evacuation Time Study of August 12, 1986, there is no specific averment that the evacuation times listed in the SPMC came from the report. See Pro-2.5, Attachment 4. In fact, the actual ETEs listed in Pro-2.5, Attachment 4, are not listed in the KLD study. It may be that further ETE analyses were done. If so, this additional work and the assumptions and methods of calculation used have not been described. Such work needs to be disclosed and assessed to determine whether it qualifies as an ETE study for the SPMC and adequately takes into account all the relevant conditions

affecting ETEs in the context of the SPMC and the expected response of state and local officials when an evacuation is selected as a protective action for some or all of the six (6) Massachusetts communities.

B. [MAG 32C]

The old KLD ETE study simply did not take into account the many effects that result from an evacuation conducted under the SPMC. For example, the KLD study utilized a "planning basis" which assumed that as a precautionary action the public would be notified by loud speakers to clear the beaches at the Alert Level and that an order to evacuate would be transmitted to the public 25 minutes later. NHRERP, Vol. 6, 4-1. Given that the SPMC does not utilize early beach closing, that there are no longer any pole-mounted loud-speakers or sirens in the six Massachusetts communities, and that communication delays will inevitably result as ORO communicates a PAR to Massachusetts officials and waits for the response, this "planning basis" is inappropriate for generating realistic ETEs for Massachusetts. The KLD study also assumed use of a specific traffic management plan, but Massachusetts officials have rejected the use of that plan. In Amendment 3, almost all the TCP and ACP diagrams have been withdrawn from the SPMC. Cf. Amendment 2, App. J with Amend. 3, App. J. Any changes in the configuration of these posts will result in different ETEs. The KLD study also assumed that all traffic control posts would be immediately staffed at the time of an evacuation. This assumption is not realistic for a fast-breaking accident under the SPMC. The SPMC fails to meet the requirement that an evacuation time study be done on a case-by-case basis and that the study consider all relevant conditions. Piggybacking on the old KLD study is not sufficient to meet that requirement in light of the changed circumstances. A new study needs to be conducted.

JI 2

Contention

The evacuation time estimates contained in the SPMC, Pro-2.5 at Attachment 4, are too unrealistic to form the basis of adequate protective action decision-making. Realistic ETEs would be much longer. The SPMC, therefore, does not meet the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(10), NUREG 0654, Rev. 1, Supp. 1, II.J.10.1, and NUREG 0654, Appendix 4.

Basis

A. [MAG 39C, D, I, N, O, P]

Orderly and efficient traffic flow will not be maintained due to the inadequacies in planning for the use of traffic control personnel and for the removal of road blockages by tow trucks.

B. [MAG 39J, FF, K]

The ETES are based on incorrect assumptions concerning the number of cars that will flow through roads, intersections and ramps in Massachusetts.

C. [MAG 39S]

The ETES fail to account for the delays that will result from the confusion among the public caused by hearing different emergency messages from different sources.

D. [MAG 39U; TOA 4K]

The ETES are based on a traffic management plan that overestimates the traffic flow rate through the intersection at Route 110/I-95/Elm Street in Amesbury.

E. [MAG 39W, X, Y]

The ETES are based on an undercount of the number of vehicles evacuating from and through the Massachusetts portion of the EPZ.

F. [MAG 39AA]

The ETES are based on the implicit assumption that in implementing the traffic management plan the placement of cones and barricades will not actually block vehicles with legitimate reasons to travel against or across the flow of evacuation traffic. In fact, if the traffic management plan is implemented according to the diagrams in Appendix J and cones and barricades are placed as shown, these vehicles will be blocked at many intersections.

G. [MAG 39BB]

The ETES were calculated using an irrelevant "planning basis" which assumed that the public is notified to clear the beaches at the Alert level, that a General Emergency occurs

15 minutes later, and that the order to evacuate is transmitted to the public 10 minutes after the General Emergency is declared. This "planning basis" has no relationship to the SPMC.

H. [MAG 39DD]

The ETEs are based on the unrealistic assumption that the implementation of access control will not significantly delay or impede returning commuters as they travel back into the EPZ to residences in one of the six Massachusetts communities.

I. [MAG 39EE; MAG 47T]

Because there are no special population evacuation times in the SPMC, the ETEs in the SPMC appear to be based on the unrealistic assumption that the evacuation of the transport dependent population and those in special facilities and schools will take no longer than the evacuation times calculated for evacuees using private automobiles.

JI 3

Contention

The SPMC does not provide protective action decision-makers with sufficiently realistic ETEs for the Massachusetts EPZ population for a wide range of times and conditions in the summer months. Only one pre-determined ETE is provided for a summer weekend with good weather, despite the fact that ETEs for such occasions vary dramatically as the size of the beach population (a factor to which the ETEs are highly sensitive) rises and falls. These beach population changes are substantial and occur from hour to hour, day to day, and week to week. Absent a real-time, computer-based system to monitor the size of the beach population and compute real-time ETEs, the SPMC is deficient, because there is no reasonable assurance that adequate protective measures can and will be taken as required by 10 CFR § 50.47(a)(1).

Basis

A. [MAG 42, Basis ¶1]

A "real-time" computer-based data collection/ETE calculation system should be installed by linking a series of

roadway traffic counters that form a cordon around the Massachusetts beach areas with a small computer programmed to compute ETEs instantaneously. This system would enable PAR decision-makers to have realistic ETEs at the moment a decision must be made without having to make wildly uncertain extrapolations, as the SPMC now requires, from a single pre-determined ETE in a table which assumes a given fixed population at mid-day. The SPMC contains no guidance whatsoever on how these extrapolations are to be made, and even if there were such guidance, there is no real-time data collection system to enable that extrapolation to be made in a manner that produces evacuation time estimates of reasonable accuracy for the conditions at hand. Thus, for example, using the SPMC a decision-maker can only guess what the realistic ETE is for 4:00 p.m. on a Saturday in mid-August when many of the beach-goers who were there at 1:00 p.m. have left and the beaches at mid-day were somewhat crowded but not at capacity. Similarly, a decision-maker cannot know, with any reasonable assurance, what the realistic ETE is at 2:00 a.m. on a Thursday in late July, when relatively few day-trippers are present but an unknown number of seasonal, weekly, and overnight visitors are staying in rental units, beach cottages, motels, and campgrounds in the area. The population in the beach area fluctuates so dramatically (by tens of thousands of people) over the course of only a few hours that having a single ETE, as the SPMC does, for a summer weekend (good weather) leaves protective action decision-makers ill-equipped to make the calculations needed for protective action decisions.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.10.j at pp. 66-67; Criterion J.10.1 at pp. 68-69.

Opponents' Prefiled Testimony: MAG has prefiled the testimony of Dr. Loloff wherein he gives his view that, as of 1989, the population estimates utilized in connection with SPMC were as much as 9.2% too low. This testimony is offered apparently as a basis for MAG's main witness, Dr. Adler, to build on. MAG witness Adler has prefiled testimony in which he sets forth a number of complaints as to the SPMC ETEs.

First, although he realizes they were generated by the same model and methods, and by the same firm, that did the NHRERP ETEs, he is upset that this is not stated in the SPMC, and that there is no complete write up as to how the study was done. Dr. Adler claims such a write up is necessary both as a matter of law and to make the plan workable. Dr. Adler lists eight matters which he claims to exist with respect to the Massachusetts portion of the EPZ and which will affect ETEs; these are: (1) the fact that this Board has found that 35,000 cars is that "expectable maximum peak occupancy" which is a higher number than that used in the NHRERP study; (2) the access control points (ACPs) will not be activated for two hours after the Order to Evacuate (OTE), and traffic control points (TCPs) will not be manned immediately in a fast breaking accident; (3) the fact that SPMC TCPs and ACPs will be manned by traffic guides instead of trained police; (4) the configuration of certain TCP/ACP diagrams has changed; (5) the use of the mobile alert system as opposed to fixed pole sirens; (6) the alleged change of position as to the extent of shadow evacuation; (7) the fact that the Massachusetts beaches will not be closed until the site area emergency (SAE) level as opposed to the alert level; and (8) the populations are larger. In addition, Dr. Adler gives a number of reasons for his belief that the ETEs for the Massachusetts portion of the EPZ should be larger than those

set out in the SPMC; these included: the fact that civilian traffic guides will not be as efficient at handling the traffic as trained police officers would be, and the fact that the number of cars which will travel in the Massachusetts portion of the EPZ has been underestimated for various reasons. He also decries the lack of special facility ETEs, and the lack of a beach population monitoring system.

**Applicants' Prefiled Testimony:** Applicants have prefiled testimony addressing these ETE contentions contained in Applicants' Rebuttal Testimony No. 16.<sup>12</sup> This testimony discusses the background of the SPMC ETEs, the assumptions and inputs used, and demonstrates how the ETEs will be used in PAR generation.

**Applicable Legal Principles:**

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<sup>12</sup> The testimony prefiled by the Applicants in this phase of the proceeding is all labelled "rebuttal" testimony and its numbering sequence begins with the number 6. This is because Applicants' Rebuttal Testimony Nos. 1-5 were filed and received in the NHRERP phase of the case and we wish to avoid confusion in the record by having two pieces of "rebuttal" with the same number. Also, it should be understood that the filing of any testimony by the Applicants in this phase of the hearing is not a pledge actually to offer the testimony. If the Opponents have not rebutted the presumptions applicable at the close of their cross-examination of FEMA and their own direct cases, the Applicants may elect not to offer all or any of their prefiled testimony.

1. An ETE should not reflect a worst case scenario, rather, it should reflect realistic conditions so that it is of use to the decision makers; for an ETE to be too conservative in its assumptions is as detrimental as it would be for all assumptions to be made in a highly unconservative manner. Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 246 (1986); Philadelphia Electric Co., ALAB-836, 23 NRC 479, 491 (1986); Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), LBP-85-25, 22 NRC 101, 106 (1985).

2. Licensing Boards are not required to deal with details of implementation in proceedings with respect to off-site emergency planning. See Cincinnati Gas & Electric Company (Wm. H. Zimmer Nuclear Power Station, Unit No. 1), ALAB-727, 17 NRC 760, 770, 773 (1983); Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), LBP-82-100, 16 NRC 1550, 1563 (1982).

**B. EVACUATION PROCESS - TRAFFIC MANAGEMENT PLAN**

**JI Contention No. 4**

**The Contention:** "The evacuation plan contained in the SPMC is so poorly designed and so inadequately staffed that, even if state and local officials are assumed to make a best efforts response, there is no reasonable assurance that either the permanent residents or the transients can or will be evacuated as efficiently as

possible, therefore, the SPMC does not provide reasonable assurance that adequate protective measures can and will be taken, and it fails to comply with 10 CFR §§ 50.47(a)(1), 50.47(b)(10), 50.47(c)(1), and NUREG 0654, Rev. 1, Supp. 1, Section II.J.

#### Basis

A. The number of traffic control personnel relied upon by the SPMC is inadequate.

B. Insufficient capacity-enhancing measures and other poorly conceived traffic control strategies are utilized by the SPMC's traffic management plan. The SPMC has not adequately addressed the problems that will occur during an evacuation in the event that the Gillis Bridge is closed to traffic in order to facilitate the passage of boats.

C. The traffic control diagrams contained in the SPMC are not sufficiently clear to allow the SPMC's traffic management plan to be implemented.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.4 at p. 13; Criterion J.9 at pp. 56-58; Criterion J.10.j at pp. 66-67.

Opponents' Prefiled Testimony: The Attorney General for The Commonwealth of Massachusetts (MAG) has filed the testimony of Dr. Thomas J. Adler. Dr. Adler criticizes the design and planned operation of certain of the traffic control posts (TCPs) and access control posts (ACPs) in the traffic management plan of the SPMC. These criticisms allegedly are made against the requirements of the Manual on Uniform Traffic Control (MUTCD) which Dr. Adler asserts to be the proper standard by which to judge such posts in a

radiological emergency plan. In addition, Dr. Adler recommends the use of barricades, as opposed to traffic cones at certain "key" TCPs and ACPs. He criticizes certain procedures and instructions for ambiguity, and argues that ununiformed traffic control guides will not command the respect necessary to control traffic. MAG has also filed the testimony of Frank Beevers, the acting Chief of Police of the Town of Salisbury Massachusetts. Basically, Chief Beevers sets out a rerun of the alleged problems and difficulties that will occur in the Town of Salisbury and its environs that were testified to by his predecessor in office during the NHRERP phase of the hearings. He concludes that the situation in Salisbury on a busy Sunday summer day would require the use of fifty trained police officers to handle the situation and opines that the small number of ununiformed traffic guides assigned the task in SPMC cannot do the job adequately.

The Town of Amesbury (TOA) has filed the testimony of Police Chief Michael A. Cronin. His testimony relevant to JI 4 appears at pages 3-12 of that testimony wherein he makes the following allegations: he and his officers did not cooperate in the drafting of the SPMC as it affects TOA; the drafters of SPMC did not properly take into account the heavy influx of transients that occurs during certain summer and holiday periods in TOA; the diagrams of certain specific TOA

TCPs contain errors; the designs of TCPs in SPMC, in general, are not good; there is a need for traffic guides (and presumably TCP diagrams) at an additional 20 intersections in TOA; it is wrong to use traffic cones, as opposed to prepositioned concrete barriers (which he says would also be useless without prepositioned trained public safety officers to put them in place with a good deal of warning of an imminent radiological emergency); and, finally, the Seabrook Offsite Response Organization (ORO) does not have sufficient staffing to properly manage traffic.

The Town of West Newbury (TOWN) has filed a document entitled "Town of West Newbury's Direct Testimony" which purports to set out what TOWN's Superintendent of Streets, Chairman of the Board of Selectmen and a Member of the Board of Selectmen "will testify" to.<sup>13</sup> The points made relevant to JI 4 appear at pages 3-12 of the document and are: certain specified TCP diagrams are confusing or inadequate; certain TCPs are poorly designed for the purpose intended; TCPs are needed at an additional eight intersections and at three facility entrances; 35-40 additional traffic guides are needed; a lack of parking spaces for emergency personnel is

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<sup>13</sup> We leave to another filing what should be done inasmuch as in its present form the document is not prefiled testimony, but rather a lawyer's description as to what presumably will be late filed in the future without prior leave sought.

decried; the blocking of traffic by disabled or improperly parked vehicles is surmised; the existence of certain narrow roads is noted; and finally it is stated that if TOWN itself were to attempt to implement SPMC, it would not have the personnel necessary to do so.

The Town of Newbury (TON) has filed direct testimony by the Chairman of its Board of Selectmen, Angelo Machiros, and its Chief of Police, Roger Merry. The points made with respect to JI 4 appear at pages 4-13 of the prefilled testimony and are the following: there are large traffic jams on sunny summer days on Plum Island and 6-10 traffic guides would be necessary to control the situation on the Plum Island Turnpike in the event of an evacuation, as opposed to the one traffic guide called for in SPMC, therefore, SPMC would result in an evacuation of Plum Island that was no more rapid or efficient than an uncontrolled evacuation; there are errors in the diagrams of certain specified TCPs; and there are an additional 13 TCPs needed in addition to those now called in TON by SPMC.

The City of Newburyport (CON) has submitted a piece of prefilled testimony bearing upon JI 4. The testimony is by City Marshall<sup>14</sup> Francis E. O'Connor. Mr. O'Connor makes the following allegations: CON's police department did not

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<sup>14</sup> This position is the equivalent of the more familiar term "Police Chief."

participate in the drafting of SPMC; he opines that the use of wooden barriers prepositioned in the field would be a preferable traffic control device to cones; he criticizes various TCP diagrams and designs; he opines that there should be a traffic guide at all intersections involving a major thoroughfare in CON; he points to a certain conglomeration of schools and a hospital which would be extremely difficult to reach in congested traffic; he states that CON does not have the police resources itself to execute SPMC and concludes that an evacuation carried out pursuant to SPMC would be the equivalent of, and no better than, an uncontrolled evacuation.

**Applicants' Prefiled Testimony:** The Applicants have prefiled testimony addressing JI 4 which is contained in Applicants' Rebuttal Testimony No. 9. The testimony begins by describing the process that was utilized in selecting and designing the TCPs and ACPs. Next, it is explained that while it would be possible to have additional TCPs which would, in fact, expedite local traffic flows slightly, this would be of little benefit because downstream choke points which are manned are the controlling factors with respect to evacuation times. The testimony points out, with respect to TOA, that all help sought in the selection and design of TCPs was refused by TOA and its officials. It is pointed out that, despite the prefiled testimony of TCA, TOA does have an

emergency plan for the town; this plan has only two TCPs and both of them are, in fact, included in SPMC. It is noted that, while traffic guides are shown in specific locations on the diagrams, these locations are not static and the Traffic Guides are free to move around the TCP as conditions may necessitate. It is also acknowledged that the Applicants stand ready to make any changes shown to be necessary to the diagrams if the opposition will simply point the need out instead of continuing their "gotcha" attitude.

The Applicants' testimony goes on to explain why the choice of cones was made over barricades and why the Applicants believe the choice to be a correct one in light of the portability, size and reflectorization of the cones. Next, the process of mobilizing the Traffic Guides is explained, in particular pointing out that the manning sequence assures the manning of the critical TCPs before evacuation commences except in the extremely unlikely event of a very early release. The Traffic Guides' procedures are next explained and the reasons given for why the Applicants believe they are appropriate, and it is pointed out that the exercise objectives relevant to these procedures were met during the June 1988 exercise. Finally, the testimony addresses a desirable change to be made in a specific TCP in TOA.

**Applicable Legal Principles:**

1. This Board has previously found:

"Traffic control posts are designed to perform a number of rather obvious functions: (1) facilitate evacuating traffic movements which serve to expedite travel out of the EPZ along the planned evacuation routes; (2) discourage traffic movements which permit evacuating vehicles to travel in a direction which takes them significantly closer to the power station; and (3) resolve potential conflicts between traffic streams at intersections by assigning right-of-way so as to promote safe operations and to keep traffic moving." PID at ¶ 9.65.

2. This Board has also previously concluded that "Unstable or aberrant driver behavior is not expected to be a significant factor in the event of an emergency at Seabrook" and "there is no aspect of human behavior in the population of the Seabrook EPZ which will prevent an adequate emergency response in the event of a radiological emergency at Seabrook," PID ¶¶ 7.89, 7.96 (subparagraph 9 at p. 174).

3. "There are accidents that could progress to the general emergency stage before the EOC or staging areas could be activated, and that would allow inadequate time to go through LILCO's planned mobilization process before evacuation began. The Board can find no defect in planning, however, since complete and timely mobilization under those conditions is simply impossible. The consequences of a failure to mobilize LERC before evacuation begins are

relatively small because an evacuation unaided by LILCO traffic guides could still be accomplished although it would take more time than the controlled evacuation." Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), LBP-85-12, 21 NRC 644, 724 (1985). Additionally, as this Board has concluded on this same issue: "the staffing problem arises from a postulated rapidly developing accident at the very end of the spectrum of accidents within the NUREG-0654 planning basis" and "[t]hat particular accident sequence need not be isolated from all others for emergency traffic management purposes." PID ¶ 9.87. Further, this Board has recognized that "evacuation would be implemented on a municipality-by-municipality basis" and "an evacuation of only a portion of the EPZ, even in a fast-breaking accident, will ameliorate or eliminate the problem of limited police mobilization". Id.

#### JI Contention No. 5

**The Contention:** "The method utilized by the SPMC for surveillance and removal of road blockages is not adequate to ensure that road blockages will be identified and removed promptly enough and the communications procedures for dispatching tow vehicles once blockages have been spotted are too cumbersome and ineffective."

## Basis

### A. [MAG 73D]

The method utilized by the SPMC for surveillance for road blockages is not adequate to ensure that road blockages will be identified promptly enough to dispatch tow trucks to remove them in a timely fashion. Route Guides assigned to buses are to "report any obstacles, stalled cars or other impediments by radio." Pro. 2.10, Attachment 3. Route Guides for the hearing impaired are to report "obstacles, stalled cars or other impediments to traffic flow." Pro. 2.11, Attachments 3. Also, Traffic Guides are to report "if traffic is blocked or if there is no evacuating traffic." App. J, p. J-3. Route Guides in buses, however, will not arrive for many hours into an evacuation, and when they do arrive their routes do not take them along all the key evacuation links. Indeed, bus routes seek to avoid the most heavily traveled evacuation routes. So Route Guides in buses will not provide an effective means of surveillance for road blockages. Route Guides for the hearing impaired, similarly, will likely avoid travel along major evacuation links, and they are not out in sufficient numbers nor throughout the full duration of an emergency. Stationary Traffic Guides are even less effective. Most of the many miles of key evacuation roads will not be visible to them, especially at night.

### B. [MAG 73E]

The communications procedures for dispatching tow vehicles from the "transfer points" once road blockages have been spotted by Route Guides or Traffic Guides is too cumbersome to provide reasonable assurance of a timely response. Route Guides for the hearing impaired report blockages to the Evacuation Support Dispatcher. Pro. 2.11, Attachment 3. Route Guides in buses going to schools and special facilities report blockages to the Staging Area Leader, but Route Guides in buses assigned to "transfer points" report blockages to the Transfer Point Dispatcher. Pro. 2.10, Attachment 3. Traffic Guides report blockages to the Evacuation Support Dispatcher. App. J, p. J-3. Thus, three separate ORO personnel receive reports of road blockages. Only the Transfer Point Dispatcher, however, is authorized to dispatch tow trucks to an impediment. Pro. 2.10, Attachment 8. Thus, unnecessary communication is generated which impairs an efficient dispatch of tow trucks.

C. [TOWN 8.2]

The plan fails to identify an adequate means of dealing with disabled vehicles or those which are inoperable due to fuel exhaustion or accidents. It simply provides for tow facilities at some unidentified site in Groveland with access to Route 113.

D. [TON 5, Basis ¶]

The SPMC fails to adequately identify how impediments to the use of evacuation routes will realistically be corrected or addressed.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.10.k at p. 67.

Opponents' Prefiled Testimony: In his trial brief MAG says that the intervenors have no witnesses on this contention except the hearsay testimony of two MAG investigators as to a survey they did of the availability of tow trucks.<sup>15</sup> This testimony states that there is in place a letter of agreement (LOA) for 15 tow trucks and 22 drivers with Coady Towing Service. MAG says that he will try to make his case on this contention through the cross-examination of FEMA's and Applicants' witnesses.<sup>16</sup>

Applicants' Prefiled Testimony: The Applicants' prefiled testimony with respect to JI 5 appears in Applicants' Rebuttal No. 9. Therein the following topics are addressed. Two tow trucks are assigned to each community in

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<sup>15</sup> Testimony of Maureen Mangan and John Paolillo (M&P) at 38-39.

<sup>16</sup> MAG Trial Brief at 7.

the Massachusetts portion of the EPZ. Travel time studies have been made to learn the likely travel time between the various transfer points since they represent most likely distances to impediments to be traveled by the tow trucks. Statistics indicate that only four or five accidents can be expected to occur during an evacuation in the Massachusetts portion of the EPZ, and not all of those would be disabling in nature. Sensitivity runs have been made with the IDYNEV traffic model which show that the evacuation time is relatively insensitive to a total of as many as ten random accidents. The testimony describes how impediments will be located and information concerning them transmitted. The June Exercise demonstrated the ability of the ORO to deal with accidents. Finally, there is a discussion of the topics of the Gillis and B&M Bridges as possible impediments.

**Applicable Legal Principles:**

1. "Members of the public, without specific direction, would remove impediments to evacuation and other such tasks." PID ¶ 7.96 (subparagraph 7 at p. 173).

JI Contention No. 6

Withdrawn by Stipulation.

C. EVACUATION PROCESS - TRANSIT DEPENDENT

JI Contention No. 7

The Contention: "No adequate planning has been done for the transit dependent population because the bus routes proposed for Newbury, Newburyport, [and] West Newbury will not expedite the evacuation of this population.

Basis

A. [TON 1.a]

The SPMC, Appendix D-5, relies on the Seabrook Station Evacuation Time Estimate Study in projecting the capability of evacuation routes. The time study recognizes that control at critical intersections, to a large extent, determines the capacity of a roadway (Time Study, 3-1). The SPMC provides for the control of one intersection on Plum Island, i.e., Plum Island Turnpike and Sunset Drive. A second major intersection, Plum Island Boulevard and Northern Boulevard, is uncontrolled. Approximately 60% of the traffic evacuating Plum Island would converge at the second intersection and would result in a significant bottleneck and impediment to timely evacuation. The SPMC accordingly does not provide a reasonable assurance that adequate protective measures regarding relocating and traffic capabilities exist.

D. [TON 1.d]

1. Appendix J, p. N-6 depicts Newbury Bus Route #1. That route provides for buses to travel onto Plum Island via the Plum Island Turnpike and then turn left (north) on Old Point Road. Following that road to its end, the bus is then to turn 360 degrees and return via Old Point Road.

a. Old Point Road is narrow. It actually is approximately 1-1/2 lanes in width with narrow or no shoulders. The SPMC unrealistically assumes that outflowing traffic will not impede the ingress of vehicles into the evacuation zone. At the terminus of Old Point Road there is insufficient room for the bus to turn around as is provided in the route map.

3. The SPMC calls for the bus to turn right (east) from Northern Boulevard onto 58th Street, follow that street to its end, turn left (north) onto Reservation Terrace and follow that road to its end. There, the bus is to turn around and follow these same roads back to Northern Boulevard.

4. The SPMC provides that the bus, upon returning to Northern Blvd. will turn right (north) and follow that road to its end, turn around and reverse its course back to Plum Island Turnpike/Boulevard and off Plum Island.

a. The SPMC fails to provide for bus evacuation of any portion of Plum Island south of Plum Island Turnpike/Boulevard despite the location of numerous streets and dwellings south of that street. The SPMC wholly fails to provide for the evacuation of those residents or transients without transportation on that portion of Plum Island.

5. Once the bus is on Plum Island Turnpike, it follows that road to Rolfe's Lane (aka Ocean Ave.) where it turns left (southeasterly). Rolfe's Lane intersects Route 1A when one has traveled about 3/4 mile.

b. While traffic on Rolfe's Lane apparently has the option of turning left (south) onto Route 1A or of proceeding straight to Hanover Street, the SPMC fails to provide any information as to which route will be chosen by most drivers or what criteria, if any, the drivers should consider in making that choice. Drivers familiar with the area will probably proceed straight to Hanover Street as that road provides relatively straight access to Route 1 and brings one closer to I-95.

c. At the three-way intersection of Route 1A, Parker Street and Green Street (providing egress from Newburyport), traffic is discouraged from turning right onto Parker Street from Route 1A. One traffic guide is located in that area but is sited at Route 1A and Green Street, apparently to encourage drivers to turn onto Green Street instead of continuing south on Route 1A. Thus, no guide will discourage drivers from turning right from Route 1A onto Parker Street.

d. At the intersection of Rolfe's Lane, Green Street and Hanover Street (Appendix J., p. N-4), traffic from three directions will merge and flow onto Hanover Street. One traffic guide is located at that intersection. As this intersection will be handling evacuation traffic from Plum

Island and Newburyport, it is unrealistic to assume that one guide will be able to adequately direct the traffic flow and ensure that opposite travel for emergency vehicles will be possible. Moreover, the merging of these traffic flows will create a significant bottleneck and vast reductions in or the cessation of travel speed.

6. Once on Hanover Street, the evacuation bus is to cross Route 1, travel onto Middle Street, turn right onto Highfield Road and end the route at the Newbury transfer point.

a. At the intersection of Hanover Street and Route 1, cones are placed so as to discourage travel in any direction except south on Route 1. The SPMC, if followed, would require the cones to be temporarily moved or for the bus to drive over them. The bus also will have to cross southbound traffic on Route 1. Route 1 is a major southbound evacuation route and the SPMC fails to address the problem the Route 1 southbound drivers who will not permit the bus to cross, an eventuality patently possible in the event of an emergency evacuation. If the bus does somehow cross Route 1, it is likely that automobiles will follow it as their drivers may realistically conclude that the bus is following a preferred or less congested route.

b. Highfield Road is unmarked and not readily visible.

c. It is likely that vehicles exiting Newburyport on Scotland Road will, due to traffic congestion, turn onto Highfield Road in the opposite direction to that taken by the evacuation buses in order to gain access to Route 1 south. Highfield Road is merely 1-1/2 lanes in width and drivers attempting to gain access to Route 1 will render opposing travel impossible.

d. The transfer point is a narrow (approximately 15' wide) driveway which leads from Highfield Road to a Massachusetts Electric transformer which is in a fenced enclosure at the end of the approximately 100' drive. No area is provided for buses to be able to turn around or for vehicles to park. The area around the transfer point is heavily wooded and overgrown with brush. No area is available for use of those evacuees who are dropped off at the transfer point.

E. [TON 1.e]

1. Newbury Bus Route #2 (Appendix J, p. N-7) commences at the Highfield Road transfer point and follows that road to Middle Road where the driver turns left (north). The bus then follows Middle Road to Route 1 where it turns right (south). The bus follows Route 1 to Elm Street where the driver is to turn right (westerly).

a. The SPMC is defective in that the intersection of Route 1 and Elm Street is marked by no sign indicating the name of latter street. A driver unfamiliar with the area will be unable to identify the road he/she is expected to follow when exiting Route 1.

2. The bus continues on Elm Street until it reaches School Street where it turns right (northwest). School Street is followed to what is depicted on the SPMC as Orchard Street where the bus turns left (south). The route follows Orchard Street to Elm Street where it turns left (east) until Elm Street intersects again with School Street where the bus turns left (northwesterly). The route again follows School Street to what appears on the SPMC to be Orchard Street where the bus turns right (northerly).

a. The intersection of School Street and Elm Street is unmarked by any signs identifying either road for drivers traveling in any direction. The SPMC thus fails to provide a reasonable assurance that the bus driver will be able to correctly follow Route #2.

b. No signs identify Orchard Street where the bus is to turn left (south) from School Street. Indeed, what appears to be Orchard Street at that intersection in fact is Central Street. The SPMC fails to demonstrate that the driver will correctly follow Route #2.

c. Central Street is narrow, approximately 1-1/2 lanes in width without shoulders. The SPMC fails to provide an adequate assurance that this portion of Route #2 will remain passable in the event of opposing traffic.

3. After the bus turns from School Street onto what is correctly Central Street, it follows that latter road north to Orchard Street where it turns right (northeast). Orchard Street is taken to Boston Road where the route turns right (east). The route follows Boston Road across Route 1 to Green Street where it turns left (northerly).

b. Boston Road intersects with Route 1, a major southbound evacuation route from the entire EPZ south of

Seabrook Station. Route 1 will thus be heavily congested. The SPMC calls for no traffic control points at that intersection and it is unlikely that the bus will be able to cross Route 1, particularly in light of the fact that two lanes of southbound traffic will be encouraged only one mile, more or less, north of that intersection.

c. The map of Route #2 (Appendix 7, p. N-7) indicates that Boston Road intersects at a right angle an unidentified road about 1/4 mile east of Route 1 but that the route continues straight on Boston Road. In actuality, that intersection is a "Y" intersection, or fork in the road, with Boston Road bearing to the left and the other road bearing to the right. No sign identifies which of the roads is Boston Road. The SPMC lacks reasonable assurance that the bus drivers will be able to accurately follow Route #2 at this intersection.

d. Boston Road, particularly after the fork, is about 1-1/2 lanes in width without shoulders. Persons familiar with Newbury can be expected to evacuate the EPZ to the south via Boston Road to Route 1, especially if travel on Hanover Street (see Newbury Bus Route #1, App. J, p. N-6) becomes congested. This portion of Route #2 will accordingly become impassable for northeast bound traffic.

e. The intersection of Boston Road and Green Street is unmarked. Bus drivers thus will be unable to follow Route #2 in the absence of route guides and/or directional signs.

4. The bus is to follow Green Street to Hanover Street where evacuation Route #2 merges with traffic evacuating Newburyport and Plum Island via Hanover Street to Route 1 (see Traffic Control Post No. E-NB-02, Appendix J, p. N-4).

a. Green Street (southbound) will in all likelihood be recognized by drivers as an alternative route to Route 1 or Route 1A, both of which are major southbound routes. As Green Street is approximately 1-1/2 lanes in width, southbound traffic will render travel to the north on that street impossible.

b. Green Street, as well as other roads on all Newbury bus routes, is subject to flooding and becoming impassable. The SPMC makes no provision for such an eventuality.

5. After merging with Hanover Street evacuation traffic, the bus follows Newbury Bus Route 1 to the transfer point. The bases for the preceding contention regarding the adequacy of this portion of the route are incorporated herein by reference.

F. [TON 1.f]

1. Newbury Bus Route #3 (Appendix J, p. N-8) commences at the Highfield Road transfer point where the bus turns right (southeast) from the transfer point driveway onto Highfield Road. The inadequacies of the transfer point set forth supra are incorporated herein by reference. The bus follows Highfield Road to Middle Road which it follows south until turning left (east) onto Boston Road. Bus Route #3 indicates that the bus then makes a 90 degree turn right (southeasterly) onto Hay Street.

a. The inadequacy of Boston Road for eastbound traffic noted supra is incorporated herein by reference.

b. The intersection of Boston Road and Hay Street is not a right angle as Route #3 depicts. Rather, it is a "Y" intersection or fork which will cause the driver, if unfamiliar with the area, to become disoriented or lost.

c. Hay Street is inadequately marked for vehicles traveling northeast on Boston Road.

d. Hay Street is about 1-1/2 lanes in width and has no shoulders. Opposing traffic to Route 1 via Boston Road, which is called for in Newbury Bus Route #3, will render travel in both directions impossible.

e. Portions of Hay Street are within a flood plain and are subject to flooding, but the SPMC identifies no means of dealing with the impassability of Hay Street due to flood waters.

2. From Hay Street, the route turns right (easterly) onto Newman Road. The route follows that road to Route 1A where the bus is to merge with southbound evacuees, cross Parker River and turn right (southeasterly) onto Old Rowley Road.

a. Newman Road is not identified by any sign.

b. Newman Road is approximately 1-1/2 lanes in

width, has no shoulders and crosses about 1/2 mile of marsh. Opposing traffic will render southeasterly travel impossible.

c. Newman Road is extremely low and, for approximately 1/2 mile, is within a flood plain area. The road is subject to flooding and becoming impassable.

d. No intersection control is provided by the SPMC to enable the bus to merge onto Route 1A southbound. As that road is one of few southerly evacuation routes, it will be necessary to provide some form of control if the bus will realistically be able to join the Route 1A traffic.

e. Old Rowley Road is 1-1/2 lanes in width and has no shoulders. It is unpaved, crosses a flood plain area and is subject to flooding and becoming impassable due to flood waters.

3. The bus continues on Old Rowley Road to its intersection with Route 1A. There the bus is to turn left (north) and follow Route 1A to Hay Street where it is to turn left (west).

a. To travel north on Route 1A from Old Rowley Road will require southbound evacuees on Route 1A to permit the bus to gain access to a northbound lane. Yet no traffic control or route guide is provided at that intersection. It is thus unlikely that access to a northbound lane will be achieved.

d. Hay Street is inadequately marked.

4. The bus, after turning onto Hay Street, travels southerly past the intersection with Newman Road. Hay Street then curves to the right (easterly then northeasterly) until it intersects Boston Road where the route turns left (southeasterly).

a. Before arriving at its intersection with Newman Road, Hay Street is very low and, indeed, is in a flood plain area. Hay Street is subject to flooding and becoming impassable.

b. After passing Newman Road, evacuation buses on Hay Street will be traveling in opposite directions. The road is of insufficient width to readily permit two-way bus traffic.

5. After turning onto Boston Road, Newbury Bus Route #3 crosses Route 1 and continues to Middle Road where the bus is to turn right (north), following that latter road to Highfield Road and, from there, gaining access to the transfer point.

a. The impracticability of crossing Route 1, as noted supra, is incorporated herein by reference.

b. Highfield Road is marked by no sign and drivers will likely miss the turn onto this portion of the route.

G. [TON 1.g]

1. Newbury Bus Route #4 (Appendix J, p. N-9) commences at the Highfield transfer point and turns left onto Highfield Road. The bus then turns left (southwesterly) onto Scotland Road and follows that road for approximately four miles to Moody Street where the route turns left (southeast). Scotland Road, before reaching Moody Street is renamed South Street after passing I95 and again renamed Spring Hill Road about one mile further on.

a. In the likely event that traffic is congested on Scotland Road, drivers will realistically attempt to use Highfield Road to gain access to alternate southbound evacuation routes. As Highfield Road is merely 1-1/2 lanes in width with no shoulders, cars traveling to those alternate routes via Highfield Road will render travel from the transfer point to Scotland Road difficult or impossible.

b. Moreover, vehicles on I95 will likely exit onto South Street if the former is congested while the latter is lightly traveled. Yet no traffic control at the intersection (I95 and Scotland Road/South Street) exists.

c. The turn the bus driver is to make from Spring Hill to the left (southeast) onto Moody Street is poorly marked and would easily be missed. Indeed, South Street intersects Main Street before intersecting Moody Street and it is likely that incorrect turns onto Main Street will be made as the roads are inadequately marked.

2. From Moody Street, the route turns left (east) onto what appears on the Route #4 map to be Lunt Street which takes the bus to the left (east) to Church Street. There, the route turns right (southeasterly) and crosses I95 where it is renamed Central Street. The route turns left

(northeast) onto Orchard Street approximately one mile after crossing I95.

a. These series of turns are poorly marked and it is likely that drivers will become disoriented or lost in this area.

b. Vehicles traveling south on I95 will likely exit to Church Street/Central Street in the likely event of congestion on I95 and travel west, thereby impeding eastbound travel.

c. The turn onto Orchard Street is unmarked.

3. Orchard Street is renamed Middle Road approximately two miles northeast of Central Street. The route follows Middle Road past Highfield Road and across Route 1 where it becomes Hanover Street. Hanover Street is followed to Green Street where the route turns left (north).

b. Buses will likely not be able to cross Route 1 without control of evacuees utilizing that major southbound route.

4. Evacuation Route #4 follows Green Street to Parker Street where it turns left (westerly), crosses State Street in the City of Newburyport and continues east to cross Route 1. After crossing Route 1 in Newburyport, the bus route turns left (southerly) at the intersection of Graf Road. The route follows that road to Highfield Street and the Newbury transfer point.

b. Left (easterly) turns from Green Street to Parker Street are discouraged (see Traffic Control Post No. E-NB-02, Appendix J, p. N-4). The bus driver would thus be required to disregard traffic cones located at the turn or be obstructed by inbound traffic on Parker Street.

c. It is unrealistic to expect that evacuation buses will be permitted by traffic flows to cross State Street and Route 1 in Newburyport as provided by the bus route. State Street will be congested and Route 1 will contain heavy numbers of southbound evacuees. To cross Route 1, the bus will need to cross two northbound and two southbound lanes. Inadequate traffic control exists at these crossings.

d. Congestion of Route 1 will result in evacuees turning from that road onto Parker Street and the eventual

congestion of traffic there. The bus route will thus likely be impassable.

e. Graf Road/Scotland Road will in all likelihood be jammed with evacuees attempting to gain access to I95. Timely travel on this portion of the bus route is accordingly unlikely.

f. Entry onto Highfield Road from Scotland Road will be impeded or blocked by evacuees and buses attempting to reach I95 via Scotland Road from Plum Island, Newbury and Newburyport.

H. [TON 1.h]

Appendix J., p. N-10, of the SPMC includes a map showing a proposed bus evacuation route. The route depicted in that map includes Downfall Road as one of the streets the evacuation bus is to travel upon. Downfall Road is a "paper" street only and, in actuality, is nonexistent and impassable.

I. [TON 1.i]

Many of the roads, e.g. Boston Road, Hay Street, Old Rowley Road, constituting bus routes and potential evacuation routes lie in whole or in part within flood plain areas and are subject to periodic flooding. The SPMC fails to provide a reasonable assurance that these routes will be passable during flooding periods. The SPMC fails to identify alternate bus routes in the event that those which have been identified become impassable due to flooding, other seasonable impediments.

J. [TOWN 7.2A, B, D]

Appendix J, Amendment 2, the prior version now replaced by the applicant, did contain the town map, sketch maps and bus evacuation routes described above. That version was also inadequate to comply with the planning standards or to provide reasonable assurance that adequate protective measures can and will be taken in the event evacuation is necessary for the following reasons:

1. Appendix J, Amendment 2, p.WN 9-11 consisted of evacuation bus routes in West Newbury. There are no street signs at a number of the intersections at which bus drivers were required to turn in order to follow the routes. Parts of River Road (Route #1) are subject to flooding, rendering segments of the road impassable at certain times of the year.

A part of Ash Street (Route #2) is a dirt road which is regularly underwater during portions of the year and is closed to traffic during portions of the year.

2. The transfer site for the bus routes, located at Stewart Street, is inadequate. It consists of a 26 foot by 29 foot paved area which is inadequate for a bus turn around. Nor is there any area for people to congregate in the area while awaiting transfer or for emergency personnel vehicle parking. There are no sidewalks in that area of Stewart Street, and the sides of the road fall off into gullies which are often wet. There was no provision for traffic guides to assist and facilitate bus movement at the transfer site.

3. Appendix J, Amendment 2, p.WN-3-8 consisted of sketch maps of traffic control points in West Newbury. The control point at Crane Neck Street and Georgetown Road provided for traffic cones blocking the turn north on to Georgetown Road -- a turn used on prior bus route #2. The control point at Church Street and Main Street provided for cones blocking the turn from Main Street to Church Street -- a turn used on prior bus route #1.

K. [TOWN 8.1]

Parts of various streets in West Newbury are subject to flooding and may be closed during part of the year. The plan does not adequately address the seasonable impassability of the roads as required by NUREG-0654 J.10.k or provide a reasonable assurance that adequate means exist to deal with seasonal impassability of roads due to flooding. Nor does it identify contingency measures to deal with such impediments.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.10.g at pp. 64-65.

Opponents' Prefiled Testimony: TOWN has indicated that its Superintendent of Streets "will testify"<sup>17</sup> that there are no street signs at certain intersections on the bus routes; others are not easily read; certain streets on the bus routes

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<sup>17</sup> See n. 12, supra, and accompanying text.

are subject to flooding and/or blockage during a snowstorm; that the bus transfer point is in a bad location, is too small, and is subject to being inaccessible in a snowstorm; certain streets are subject to blockage during snowstorms; and, finally, he states that delays in the bus runs may result from the inadequacies previously detailed in the TCPS.<sup>18</sup> TON has filed direct testimony which sets out various difficulties alleged to infect the four bus routes in the SPMC for TON. These include alleged congestion, misplacement of traffic cones, a lack of an alternative route if there is the reoccurrence of a washout on one route which apparently has occurred some time in the past, an alleged inability of buses to cross Route 1, and the requiring of difficult maneuvers. It is also alleged that the transfer point is inadequate in size and lacks shelter. Finally, it is stated that one of the evacuation routes includes a nonextant road.<sup>19</sup> TON has submitted a piece of direct testimony on JI 7 by CON's Director of Planning and Development, E. James Gaines. Mr Gaines' testimony criticizes the selection of the Water Street transfer Point in CON because it is located in a flood plain, too small in

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18 TOWN Direct Testimony at 12-14.

19 All of the foregoing appears in TON's Direct Testimony at pp. 13-16. It is interesting that the entire testimony is some four double-spaced pages; the original contention was 12 single-spaced pages.

area; and certain contemplated construction projects will result in traffic congestion in the area through at least 1991. In addition, CON witness O'Connor has submitted prefiled testimony which makes the following alleged criticisms of the bus plans: the routes only "skirt" the large centers of the city's population, and the routes do not have sufficient TCPs. Like witness Gaines, witness O'Connor criticizes the transfer point. He says that it is too small, and requires difficult turns by the buses.<sup>20</sup>

**Applicants' Prefiled Testimony:** The Applicants address JI 7 in Applicants' Rebuttal No. 9. Therein, the following points are made: the bus routes used were originally developed by the Massachusetts Civil Defense Agency (the criteria used are described); maps are being updated to assure uniformity. Transfer point operations are described. In addition, the testimony sets forth how the number of runs was determined; the functions of the route guides; the Applicants rationale for assuming that the buses can successfully cross evacuation traffic; the fact that the flood plain allegations involve areas which are in the 100 or 500 year flood plain; the manner for coping with local flooding; and, finally, a detailed response to the myriad of bases for the contention.

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<sup>20</sup> This testimony appears at pages 12-14 of the O'Connor testimony.

**Applicable Legal Principles:**

1. "Any evacuation -- tornado, earthquake, hurricane or chemical hazard related -- may require evacuees to brave adverse weather conditions." PID ¶ 4.22.

2. "Unstable or aberrant driver behavior is not expected to be a significant factor in the event of an emergency at Seabrook" and "there is no aspect of human behavior in the population of the Seabrook EPZ which will prevent an adequate emergency response in the event of a radiological emergency at Seabrook," PID ¶¶ 7.89, 7.96 (subparagraph 9 at p. 174).

**JI Contention No. 8**

This contention has been withdrawn by stipulation.

**D. PERSONNEL AND TRAINING**

**JI Contention No. 9**

**The Contention:** "No provision is made in the SPMC for procedures to be employed in the event of a strike or other form of job action affecting the availability of the emergency personnel relied on to adequately staff and maintain the NHY ORO. In the absence of such procedures, this utility plan does not provide reasonable assurance that adequate protective measures can and will be taken. See Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), 21 NRC 644, 886 (1985).

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.4 at p. 13.

Opponents' Prefiled Testimony: No direct testimony has been filed. MAG states that the case will be made by cross-examination of FEMA.<sup>21</sup>

Applicants' Prefiled Testimony: *In light of the developments in the case to date, Applicants have announced their intention not to offer any direct testimony, being content to rely upon the rebuttable presumption to supply the prima facie case which will carry the issue for the Applicants in the circumstances now existing.* Applicants originally addressed this contention in Applicants' Rebuttal No. 14. Therein, an analysis is made showing that the percentage of ORO members who are unionized is only 11%; loss of all these persons due to job action would require the coincidental striking of three separate companies by 12 unions; strikes by separate companies are analyzed; the conclusion is that there are sufficient personnel to sustain the ORO in each case. In addition, it is pointed out that the ORO commitment by each ORO member is a commitment made separate and apart from his or her employment as such. Thus, there is no basis for assuming that a striker would not honor his or her ORO commitment in the event of an emergency.

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<sup>21</sup> MAG Trial Brief at 8.

**Applicable Legal Principles:** At least as of this juncture union contracts governing employment do not govern the relationship of individuals with ORO.

JI Contention No. 10

This contention was withdrawn by stipulation.

JI Contentions Nos. 11 and 12

*(These contentions are treated together because they overlap and are treated in a single piece of testimony by MAG)*

Contention JI 11: "The SPMC fails to provide for the adequate or continuous staffing of ORO personnel to maintain or sustain an emergency response. For these reasons, the SPMC fails to meet the standards set forth at 50.47(b)(1), (2), and (5), and the regulatory guidance established by NUREG 0654 II. A.1.e.4., B, and E.2.

**Basis**

A. [MAG 77A]

The SPMC does not provide for the capability of continuous operations for a protracted period of time. Personnel are required to report to staging areas at a Site Area Emergency; however, the SPMC fails to specify the number of personnel in each response category who are required to report on first shift, fails to identify adequate mechanisms for providing second shifts and backup personnel, fails to identify mechanisms for instructing contract personnel as to which shift they should report for, and fails to provide assurance of continuity of personnel from the contracted companies.

B. [MAG 77B]

The NHY Offsite Emergency Response organization fails to provide adequate staffing for evacuation specific positions. The SPMC states "evacuation specific positions will have one

compliment only with additional personnel (at least 20%) available as backup as noted on Figure 2.1-1." Plan 2.2.1. Plan 2.1.1. The justification for only providing a single shift for these positions is stated as "If an evacuation is required, the functions will be performed over a relatively short period of time as opposed to the entire emergency situation which may last for a protracted period." The justification is flawed in that implementing procedures require these positions to be staffed at the Alert and Site Area Emergency declarations. The time between call out of personnel and deployment to execute evacuation support duties may be many hours or even days. Since these positions must be available to execute protective actions at any time from declaration of an Alert to termination of the emergency situation, alternate shifts must be available to provide evacuation support capability during an "emergency situation which may last for a protracted period."

D. [MAG 77D]

The ORO staffing lists in Appendix H indicate that there are fewer staff available for some positions than will be reasonably necessary on a 24-hour basis during protracted emergency, especially for such positions as Route Guides, Traffic Guides, Dosimetry Record Keeping, Reception Center Staff and Reception Center Monitoring/Decontamination.

Contention JI 12: "There is no reasonable assurance that there will be adequate second shift manpower capability for certain evacuation-specific positions. Therefore, the SPMC fails to comply with 10 CFR 50.47(a), 50.47(b)(1), 50.47(b)(15) and NUREG 0654, Rev. 1, Supp. 1, II.A.4. and II.0.

Basis

A. [MAG 78A]

Given the length of time that it could reasonably take to evacuate the general population, special facilities, hospitals, schools, day care/nurseries, and the transit-depend/mobility-impaired population, there is no reasonable assurance that an evacuation can be completed within one shift. The SPMC, App. H provides the names of no second shift personnel for the NHY ORO for the evacuation-specific

positions of Traffic Guides, Monitoring/Decontamination Personnel and Reception Center Staff. Instead the plans asserts that NHY ORO will request second-shift manpower assistance from Yankee Atomic Electric Company pursuant to a mutual assistance plan. Plan, § 3.2.2, p. 3.2-9. There is no reasonable assurance, however, that during a radiological emergency at Seabrook Station which is serious enough to warrant a second shift for these evacuation-specific positions, enough volunteers can be recruited by Yankee Atomic to fill all such positions. This is not to be confused with role abandonment, because these workers did not previously have assigned emergency roles to fulfill. They simply will not volunteer in sufficient numbers or in a timely fashion during a radiological emergency.

B. [MAG 78B]

There is no assurance that the Yankee Atomic volunteers who do show up for second-shift duty will have received adequate training. There is no indication in the SPMC that these workers will have received job-specific pre-emergency training. The SPMC merely instructs the first-shift evacuation-specific workers to give the second-shift volunteers a "thorough briefing" upon their arrival. See, e.g., App. J, p. J-3 (Traffic Guide Procedures). Such on-the-job training during an emergency, offered by first-shift workers who want to minimize dose consequences by getting out of the EPZ as quickly as possible, is very likely to be inadequate. Thus, there is no reasonable assurance that these second-shift workers will have the capability of performing their assigned tasks in the proper manner.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.2.a at pp. 10-11 and Criterion A.4 at p. 13.

Opponents' Prefiled Testimony: MAG has prefiled the testimony of Geary W. Sikich ("Sikich-3")<sup>22</sup> with respect to these contentions. Therein, Mr. Sikich devotes himself

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<sup>22</sup> Testimony of Geary W. Sikich on Behalf of The Commonwealth of Massachusetts Regarding the Adequacy of Second-Shift Staffing for Certain Evacuation Specific Positions (JI 11 and JI 12).

exclusively to the concept of having only one shift of evacuation specific personnel. It is his position that the concept itself is bad, and that, in particular, what he calls "on-the-job" training for replacement personnel is not workable. He criticizes the use of Yankee Atomic Electric Company (YAEC) personnel as a back-up in the unlikely event that the evacuation specific positions do have to be staffed with a replacement shift. In particular, he addresses perceived difficulties with respect to back-up personnel for the positions of traffic guide, monitoring and decontamination personnel, and dosimetry readers.

**Applicants' Prefiled Testimony:** The Applicants' prefiled testimony which addresses JI 11 and JI 12 is Applicants' Rebuttal No. 10. Herein, it is pointed out that in the event of an extended emergency situation, there will be substantial resources beyond the ORO available, including the resources of The Commonwealth. The testimony goes on to describe personnel categories, the concepts of shift and complement, the fact that primary response personnel positions are staffed with enough persons to cover two full shifts plus backup personnel beyond that number. Next, the five "evacuation specific" positions are described and it is pointed out that each of these positions is staffed at 120% of need. The testimony next addresses the situation where there is a substantial period of time between the declaration

of a site area emergency (when most evacuation specific personnel are called out) and the order to evacuate. This discussion includes descriptions of how the YAEC personnel are mobilized and the fact that YAEC personnel who will engage in dosimetry reading and monitoring/decontamination are already technically qualified. Next, it is pointed out that the reserve personnel are placed on standby when five hours have passed since the initial response. The procedures for each position are explained. It is pointed out that it is expected that personnel will stand by their posts until properly relieved by a person who has been trained. Finally, the point is made that a shift turnover was exercised successfully in the June exercise.

**Applicable Legal Principles:** "Emergency workers, as a group will not abandon their roles in a radiological emergency." PID ¶ 7.96 (subparagraph 3).

#### JI Contention No. 13

**The Contention:** The SPMC states that "[p]rerequisite experience in public information is required for training and qualification as a Public Notification Coordinator." Plan, 2.1.1, p 2.1-13 (Amend. 3). The Public Notification Coordinator is responsible for a timely and coordinated activation of the Public Alert and Notification System, development of appropriate EBS messages, and coordination of EBS messages with New Hampshire and Massachusetts. The Plan fails to

address such qualifications as a professional degree, knowledge of the research record regarding the characteristics of good and poor emergency information, prior experience in drafting emergency warnings, knowledge of human behavior in emergencies. The training provided by the SPMC (see Plan, Table 6.3-1) is not adequate to compensate for this deficiency.

C. [Stipulation dated February 7, 1989]

The prerequisite experience required for and the training provided to the following ORO personnel are inadequate to enable them to make appropriate PAR decisions: the Offsite Response Director; the Assistant Offsite Response Directors for Response Implementation and for Support Liason; the Radiological Health Advisor; the Technical Advisor. (See IP 2.5, page 5.)

D. [MAG 79P, Stipulation dated February 7, 1989]

The NHY Plan identifies the qualifications for Bus Drivers as "prerequisite experience as a Bus Driver and a requisite license." Plan, 2.1.1, p. 2.1-30. The Plan fails to quantify the experience and training needed for these contract positions. Bus drivers are responsible for providing evacuation services to the general public and special populations by driving pre-designated routes and reporting to special facilities/reception centers. At a minimum these personnel need training in the transport of special populations, training in designated routes, and training in the rules and regulations of the state and towns they will be servicing. The training provided by the SPMC (See Plan, Table 6.3-1) is not adequate to compensate for this deficiency.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.2.a at pp. 10-11; Criterion O.4 at pp. 95-100.

Opponents' Prefiled Testimony: MAG has filed the testimony of four witnesses with respect to this contention.

The first is witness Harris. This testimony criticizes the training given to ORO Traffic Guides, EBS Message drafters, and PAR decision makers. The testimony is that of an educational theoretician which seems to argue that the training program does not have, "meaningful verbal learning situations," that the training program suffered from an imprecise definition of prerequisite experience for the three positions, a supposed lack of any overall instructional plan, the use of an approach of "short term recall," absence of "instructional linkages" between classroom and exercise, a lack of instructor training, and use of open book tests. He concludes that the training is fragmented, and must be totally revamped and a new exercise run.

The second MAG witness is the ubiquitous Dr. Adler. According to Dr. Adler there are three deficiencies in the training program. These are: (1) an absence of instruction on how to direct traffic efficiently, (2) a lack of detail in describing traffic control function, (3) a lack of guidance on how to deal with routine physical needs. Dr. Adler is concerned that the traffic guides are not told the assumed cycle lengths that are used in ETE calculations (75 seconds). He further worries that no formal instruction is given on hand motions. Another problem is that the traffic guides are not instructed as to the overall meaning of their post, and thus do not know when it would be all right to hold up

traffic to answer questions because it makes no difference in the long run anyway; they are to tell everyone to listen to the EBS. Dr Adler decries the fact that there is no training on how to place traffic cones; it is his view that the sketches are not clear enough. He is concerned that there is no training on how to give an accident report; no instruction on when a traffic guide without a radio should leave his or her post to tell a traffic guide with a radio something; and no instruction on when and how to take breaks. He also states that there is a need for formal printed hand outs on all these matters. He also claims that there is a need to have all traffic guides actually direct traffic at a busy intersection in order to assure that they can do their assigned job.

MAG's third witness with respect to this contention is T. Michael Carter. Basically, his contribution on this particular contention is a dissertation as to why he believes that the ORO public information coordinators are not well educated and trained. Finally, Dr. Goble has filed a piece of testimony in which he claims among other things that the ORO personnel are not sufficiently trained to assure that they will issue proper PARs.

**Applicants' Prefiled Testimony:** Applicants testimony with respect to this contention is contained in **Applicants' Rebuttal Testimony No. 20.** Therein the prerequisites for

positions, and the training with respect thereto, are gone into in detail.

Applicable Legal Principles: None.

JI Contention No. 14

This contention was withdrawn by stipulation.

JI Contention No. 15

The Contention: "ORO emergency workers will be liable for damages resulting from their actions and the SPMC does not discuss at all what, if any, provisions or agreements for indemnification exist. As a result, the emergency response by ORO workers is unpredictable. Moreover, although state emergency workers are indemnified by the Commonwealth pursuant to statute, the SPMC is silent on the relationship, if any, between authorization of police powers and indemnification for ORO workers."

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.2.a at pp. 10-11; Criterion A.2.b at p. 11.

Opponents' Prefiled Testimony: MAG has stated in his trial brief that he will rely on cross-examination of FEMA personnel to establish his case. It is to be noted that under prior rulings of this Board MAG had the burden of going

forward with evidence separate and apart from the order entered scheduling the filing of testimony.<sup>23</sup>

**Applicants' Prefiled Testimony:** Applicants' prefiled testimony with respect to this contention appears in Applicants' Rebuttal No. 15. This is testimony by Dr. Dennis S. Mileti. Dr. Mileti describes the results of a study he and others conducted for DOE concerning, inter alia, how liability questions have influenced evacuation decisions in the past. Dr. Mileti indicates that while there are documented cases where liability concerns influenced emergency response at the organizational level, there are no known cases where such matters influenced the activities of individuals actually engaged in a response.

**Applicable Legal Principles:** Emergency workers as a group stand by their posts and do not abandon a well-defined role in emergency situations. PID at ¶ 7.96 (subparagraph 3 at p. 172).

#### *E. PAR GENERATION*

#### JI Contention No. 16

This contention was withdrawn by stipulation.

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<sup>23</sup> Memorandum and Order (Admitting SPMC Contentions)-- I at 107.

The MAG Contentions  
(Contentions 17-19 in this subject matter  
category are treated together because they  
are so treated by MAG)

JI Contention No. 17

The Contention: "The SPMC fails to provide a range of protective actions for the public within the Seabrook plume exposure EPZ. No choice of protective actions is set forth in the SPMC for large numbers of people. Thus, the SPMC does not meet the standards set forth at 50.47(b)(10) and NUREG 0654 II.J.9, 10.m. and does not provide reasonable assurance that adequate protective measures can and will be taken. 50.47(a)(1).

Basis

A. The SPMC does not provide an alternative to evacuation for the beach areas in the Massachusetts portions of the EPZ. Evacuation alone does not constitute a range of protective measures. Secondary mitigating measures, including decontamination, are not protective "measures" or "actions" under 50.47(b)(10). In fact, the Commission itself has identified "appropriate protective measures" as evacuation or sheltering. 10 C.F.R. § 100.3(b).

B. In the absence of sheltering for the transient beach populations, the SPMC does not provide adequate protective measures under 50.47(a)(1) because for all fast-paced serious accidents that produce offsite consequences in less time than the transient beach populations can effect an evacuation, those populations have no adequate protection from severe radiological doses. Substantial portions of the beach population are entrapped by the traffic congestion generated by an order to evacuate and cannot remove themselves from areas close-in to the plant for many hours.

JI Contention No. 18

The Contention: "The SPMC does not establish or describe coherent decision criteria

to be used by emergency decision-makers in formulating an appropriate PAR and otherwise fails to provide guidelines for the choice of protective actions consistent with federal policy. The SPMC's decision-making criteria for selecting a sheltering as opposed to an evacuation PAR is inadequate and inaccurate, and, therefore, fails to meet the planning standards set forth at 50.47(b)(10) and NUREG 0654 II.J.10.m. and Appendix E, IV, A.4. As a result, the SPMC fails to provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.  
50.47(a)(1).

#### Basis

##### A. [MAG 27A]

There is no study presented in the SPMC setting forth the time required for effecting a sheltering PAR for various sectors of the plume exposure EPZ and for various populations in the EPZ as required by 10 CFR Part 50, Appendix E, Part IV. The effectiveness of sheltering as a dose reduction strategy is significantly influenced by the time required to implement a sheltering response. (See D. Aldrich, D. Ericson, Jr. and J. Johnson, Public Protection Strategies for Potential Nuclear Reactor Accidents: Sheltering Concepts with Existing Public and Private Structures, SAND77-1725, Feb. 1978, at 13). Therefore, decision criteria must include the time required for the various segments of the population to implement a sheltering PAR.

##### B. [MAG 27B]

The SPMC's decision-making criteria calculates a wholebody shelter dose based on a shelter protection factor of .9. According to the 1970 U.S. Housing Census, approximately 93% of the year-round housing units in Massachusetts have basements (SAND 77-1725, App. C, Table C1), which would afford shielding factors of .6 for cloudshine and .05 for groundshine. Therefore, the SPMC's decision criteria are inaccurate and could result in

decisions to evacuate the population when a sheltering PAR would afford greater reduction.

C. [MAG 27C]

The SPMC's decision criteria do not adequately consider dose from groundshine in determining whether to evacuate or shelter the population. The decision criteria do not adequately consider the shielding factor for groundshine afforded by shelters in the Massachusetts EPZ, and do not adequately consider the skin and car deposition doses that persons sitting in cars while waiting to evacuate could receive if, due to traffic congestion, they are unable to evacuate the area prior to plume arrival.

D. [MAG 27D]

The formula used in the SPMC's decision criteria for calculating thyroid shelter assumes an air exchange rate that is too high for the predominantly winterized structures that would serve as shelters in the Massachusetts EPZ, and, therefore, inaccurately calculates projected thyroid dose.

E. [MAG 27E]

The decision criteria fails to account for exposures from inhalation other than thyroid exposure.

F. [TON 9, Basis ¶]

The SPMC relies on two protective actions for the public, sheltering and evacuation, but fails to provide anything other than the vaguest of criteria for determining which protective action should be undertaken in a given emergency.

G. [MAG 56B]

The SPMC ignores the entrapment phenomenon described by NUREG 1210, V.4 at 19-20, which will occur at the Seabrook site during times of high beach population and also fails to adequately consider and plan for the possibility of entrapment due to bad weather, such as blizzards or flooding conditions.

H. [MAG 56C]

The SPMC does not project doses correctly because it under-estimates doses from iodine and other ground deposited

material, including failing to recognize in its dose calculations the increased risk from ground deposition as individuals await evacuation and the possibility of further increased dose from skin deposition and deposition on automobiles.

I. [MAG 56D]

The SPMC totally ignores the protective action that combines sheltering with rapid identification after plume passage of "hot spots" and relocation although this strategy is recommended by NUREG 1210 as appropriate for certain situations.

JI Contention No. 19

The Contention: "The SPMC, in conjunction with the NHRERP, allows and encourages decision-makers to call for an evacuation of EPZ by sectors (S, SW, NE, SE, N), even within 5 miles, depending on which way the wind is blowing. This is a deficiency in violation of 10 C.F.R. 50.47(a)(1), 50.47(b)(10), and NUREG 0654, Rev. 1, Supp. 1, Section II.J.

Basis

A. [MAG 31, Basis ¶]

Because wind-shifts in the area of the plant are so frequent, and because the phenomena of seabreezes at this site makes actual direction of plume travel difficult to predict, if an evacuation is required for any segment, there should always be a 360° evacuation out to the distance necessary. The sudden 180° wind shift during the course of a serious hazardous materials fire at Seabrook, New Hampshire in March 1988 demonstrates the folly of evacuating by sectors rather than by 360° increments. Instead, the SPMC's procedures direct decision-makers first to determine the wind direction and, if conditions warrant an evacuation, to evacuate (beyond two miles) only the downwind sectors. See IP 2.5, Attachments 1, 2, 3 and 6. For this plant site, the normal potential results of high and low wind speeds as shown on Attachment 6 to IP 2.5 simply are not reliable.

B. [MAG 56F]

There is insufficient and untimely incorporation of meteorological data into PAR decision-making. Further, meteorological assumptions made are not appropriate for the Seabrook site and will result in inaccurate dose projections because they do not adequately reflect or account for features of shoreline meteorology, including the frequent change of wind direction and the phenomena associated with sea breezes along the coastline.

Reference to FEMA Findings of Adequacy and Capability of Implementation: Criterion J.9 at pp. 56-58; J.10 at pp. 69-70.

Opponents' Prefiled Testimony: The MAG testimony on PARs was excluded by Board order. Tr. 18879-85, 18905.

Applicants' Prefiled Testimony: *As a result of this ruling, the Applicants withdrew their prefiled testimony with respect to these contentions and, given the present posture of the case, intend to rely on the rebuttable presumption with respect to these contentions.* Applicants originally addressed these contentions in Applicants' Rebuttal Testimony No. 11. Therein is spelled out the purpose of protective actions, the basis for the decision criteria used, the concept of shelter in place, the use made of radiological data, the keyhole evacuation concept, the emergency classification levels and protective actions that will be taken at each, and the radiation data that will be used. It is explained that the initial PAR's will be based upon in-containment data, but that these may be refined by

utilization of dose projections accomplished through the use of a PAR work sheet. The kinds of doses considered and how they are calculated are described. Finally, the testimony describes how SPMC deals with the "Entrapment Phenomenon."

**Applicable Legal Principles:**

1. "Our emergency planning requirements do not require that an adequate plan achieve a preset minimum radiation dose saving or a minimum evacuation time for the plume exposure pathway emergency planning zone in the event of a serious accident. Rather, they attempt to achieve reasonable and feasible dose reduction under the circumstances; what may be reasonable or feasible for one plant site may not be for another." Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC 22, 30 (1986). (Emphasis added).

2. "The existing emergency planning [regulation] does not require that plans achieve any preestablished minimum dose savings in the event of an accident. For example, approved emergency plans with full State and local governmental cooperation have highly variable evacuation time estimates ranging from several hours to over ten hours and the projected dose savings for such plans would vary widely. Thus, the regulation is inherently variable in effect and there are no bright line mandatory minimum projected dose savings or evacuation time limits which could be viewed as

performance standards for emergency plans in the existing regulations. Moreover, the dose savings achieved by implementation of an emergency plan under adverse conditions, e.g., during or following heavy snow, could be substantially less than under perfect conditions. This variability is consistent with a concept or approach to emergency planning and preparedness that is flexible rather than rigid."

Licensing of Nuclear Power Plants Where State and/or Local Governments Decline To Cooperate in Offsite Emergency Planning (Proposed Rule), 52 Fed. Reg. 6980, 6982 (March 6, 1987).

3. "The Commission presumes as does FEMA that offsite individuals in the EPZ may, as a result of a nuclear plant accident, either become externally contaminated with radioactive materials or become exposed to dangerous levels of radiation, or both." Southern California Edison Co. (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528, 534-35 (1983).

#### JI Contentions Nos. 20-23

#### JI 20 [MAG 33]

#### Contention

Even if there were an appropriate ETE study accompanying the SPMC, the SPMC's procedures do not instruct ORO workers to refer to it at all, let alone describe how to use it to adjust an ETE contained in the table in Attachment 4 of IP 2.5. Absent such procedures, the SPMC fails to assure that the ETES used by protective

action decision-makers can or will be adequately adjusted to account for conditions that vary from those assumed in the ETE study.

## Basis

### A. [MAG 33, Basis ¶]

The ETEs to be referenced in the SPMC are those found in Pro-2.5, Attachment 4. There is no indication on Attachment 4 where the times presented came from, who calculated them, how they were calculated, or what their sensitivities are. Pro-2.5 and Attachment 4 are to be used by the Accident Assessment Coordinator in completing the Protective Action Recommendation Worksheet (Attachment 3). Pro. 2.5, § 5.3.1.B instructs him to "[s]elect the appropriate estimated evacuation time from Attachment 4 for Item 8 [worksheet]. If unsure of which scenario to select, consult with Radiological Health Advisor." When one reviews the Implementing Procedures for the Radiological Health Advisor at Pro-2.5, §§ 5.2.3 and 5.2.4, however, one finds no reference to providing this function. Instead, he is instructed to "[r]eview the completed [sic] Attachment 4 Estimated Evacuation Times for the Massachusetts Communities." § 5.2.3. He is also instructed to "[c]onfer with the Assistant Offsite Response Director, Response Implementation." In Attachment 1 of Pro-1.3 we find that it is the Assistant Offsite Response Director for Response Implementation who is to "evaluate constraints to the Evacuation Time Estimate (ETE) (e.g., road conditions, current weather conditions and special evacuation problems)." However, the Implementing Procedures for this position in Pro-2.5 do not specify how and to what extent evacuation constraints should affect ETEs. Thus, nowhere in the SPMC is there a procedure which specifically directs anyone in the ORO to refer to any ETE study to assess the accuracy of an ETE in Attachment 4 of IP 2.5 in light of such variables as road conditions, weather, delays in implementing traffic control or access control, or road blockages. Ip 2.5 does contain a section (6.0) labeled "References." The last item listed in this section is the "Seabrook Station Evacuation Time Study, August 12, 1986, KLD Associates, Inc." Simply listing this ETE study as a reference, however, provides no reasonable assurance that it will be located when needed, that it will be referred to at all when needed, or that if it is referred to it will be used correctly.

## Contention

In making the choice of protective actions during an emergency, it is extremely important for the decision-makers to have ready access to maps which accurately show the population distribution around the nuclear facility. The SPMC fails to include such maps. NUREG 0654, Rev. 1, Supp. 1, Section II.J.10 states: "The offsite response organization's plans to implement protective measures for the plume exposure pathway shall include: . . . (5) Maps showing population distribution around the nuclear facility. This shall be by evacuation areas (licensees shall also present the information in a sector format)." Absent such maps, the SPMC fails to comply with 10 C.F.R. 50.47(a)(1), 50.47(b)(10), and NUREG 0654, Rev. 1, Supp. 1, Section II.J.10.b.

## Basis

### A. [MAG 40, Basis ¶]

The SPMC's map section is Appendix A. It contains no population distribution maps. Table 3.6-1 found at the end of a subsection labeled "Evacuation Process" in Section 3 of the SPMC, lists what is described as the "maximum evacuating population" by town for both the "permanent residents" and the "peak population." The figures listed for the permanent residents are incorrect for the current time period. The "peak" population totals for both "summer midweek" and "summer weekend" are significantly too low. Regardless of the accuracy of these figures, however, this format -- a table -- does not provide population distribution information to decision-makers in the more accurate and useful fashion that a population distribution map does. It is, therefore, not an effective substitute for the NUREG 0654 criteria. This criteria also cannot be met by reference to KLD's ETE study of August 12, 1986, as the Applicants themselves have acknowledged throughout their testimony in the NHRERP hearings that the peak population figures contained therein are not accurate for 1988. Moreover, that study uses "roses" or "pie" graphs to present population data in a sector format; it does not include "maps" showing population distribution "by evacuation areas," as required by Section II.J.10.b. Prudent protective-action decision-makers for

Massachusetts would find the outdated, inaccurate KLD "pie" sector graphs to be of no value.

B. [TON 6, Basis ¶]

The SPMC contains no map showing population distribution within the EPZ area of Massachusetts. The only population distribution references contained within the SPMC are Table 1.3-1 and 3.6-1. Those tables merely assert the total population of the effected municipalities. Moreover, the tables are inadequate in that they are not based on adequate empirical data and appear to exclude the transient population of the Parker River National Wildlife Refuge ("Refuge") portion of Plum Island, which is part of no Massachusetts municipality.

JI 22 [MAG 43]

Contention

Because the SPMC's evacuation time estimates have been rejected by state and local officials as totally unrealistic and unreliable, in the event of an emergency at Seabrook Station, Massachusetts state and local decision-makers will always reject any immediate implementation of ORO's protective action recommendations based on those ETES. As a result, and because those decision makers have no alternative set of ETES available to them, state and local decision-makers will make an ad hoc judgment regarding what protective actions are likely to maximize dose reductions. However, there is no reasonable assurance that adequate protective measures can or will be taken through such an ad hoc decision-making process. Therefore, the SPMC does not meet the requirements of 10 CFR 50.47(a)(1), (b)(10), (c)(10), and NUREG 0654, Supp. 1, Sections II.J.10.1 and 10.m.

Basis

A. [MAG 43, Basis ¶]

While state and local Massachusetts officials have not read or reviewed the SPMC, they have been informed by consultants retained by the Attorney General that the ETES contained in the SPMC are not reliable and that realistic evacuation times are likely to be much longer. They also understand that the ETES in the SPMC were calculated using incorrect assumptions about notification times, beach

population, times to staff traffic posts, an "early beach closing," and traffic orderliness. If NHY's ORO ever were to forward a recommendation for a protective action to state or local decision-makers, and that recommendation was based on the SPMC's ETES, there is no question that these officials would always reject any immediate implementation of that PAR. Having no set of pre-calculated, realistic ETES of their own, these decision-makers would necessarily have to make their own PAR judgment on an ad hoc basis.

JI 23 [MAG 59; TOA 2.B]

Contention

The decision criteria described in the SPMC are not coordinated with those set forth in the NHRERP. Thus, the possibility exists for delayed and conflicting PARs being formulated, transmitted and recommended to the relevant state governments. The SPMC has no adequate procedures to prevent this and therefore does not meet the planning standards set forth at 50.47(b)(1) and (10) and the guidance of NUREG 0654 II.A. and J.

Basis

A. [TOA 2B]

Even assuming prompt authorization by the Commonwealth for NHY to direct all PARs, the SPMC indicates that additional time will be required for coordination of EBS messages and PARs between the Commonwealth and the State of New Hampshire. SPMC Plan, p.3.2-16. There has not been, nor is there anticipated, however, any joint training or emergency exercises between government officials from New Hampshire and Massachusetts. Many governmental officials in both states are unfamiliar with the planning documents. Public notification, and coordinated PARs between the states, will at a minimum, be unreasonably delayed under actual emergency conditions.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.9 at pp. 56-58; Criterion J.10.b at p. 59; Criterion J.10.m at pp. 69-70; Criterion A.3 at p. 12.

**Opponents' Prefiled Testimony:** The opponents have filed no direct testimony with respect to JI-21 or JI-22. With respect to JI-20 and JI-23, MAG has filed testimony by Dr. Goble. Dr. Goble begins by describing the accident scenario used in the graded exercise. Next he describes the PARs made by the Seabrook Station personnel and the protective actions (PAs) taken by New Hampshire and the ORO. Next he claims that, while he does not have much direct evidence, he is concerned that the PAs taken were not the result of sufficient independent evaluation by the decision makers in New Hampshire or at ORO. Next, while stating it to be a difficult question to answer, we are told that, in his opinion, the PARs would have been ineffective in a real emergency. Next he is asked what PARs would have been more effective, and his answer is to describe what would have happened in a real event in his judgment and why he thinks there would have been problems. He then goes on to state that some of the difficulties he described could have been anticipated and gives his views as to what should have been done instead. He admits that faults themselves are not sufficient evidence to show that the plan and implementation were deficient, but does say that the faults observed were not specific to the accident. Dr. Goble then gives some general observations on how to handle the problem of wind shifts, compliments the Applicants on their preparation to

acquire regional weather information and forecasts, decries their reliance on only one (Seabrook Station's) meteorology tower for local conditions, and levels some general criticism against one facet of the METPAC model. Finally he gives his view that the exercise shows that the plans cannot be used effectively in a large early release. It is to be noted that the testimony, as filed, relies upon the testimony already excluded by the Board as transgressing the prior rulings and as less than adequate technical analysis.

TOA has also filed testimony which it claims is directed to JI-23. This is testimony by Chief Cronin that he is unfamiliar with NHRERP. It was filed with the first phase of testimony and has already been cross-examined.

**Applicants' Prefiled Testimony:** Applicants' testimony with respect to these contentions is to be found in **Applicants' Rebuttal Testimony No. 16** and **Applicants' Rebuttal Testimony No. 26**. Applicants' Rebuttal Testimony No. 16 has already been described supra in connection with JI Contentions 1-3. **Applicants' Rebuttal Testimony No. 26** describes protective action decision making in the SPMC; the recommendations with other response organizations; the process used for protective action decision making used during the exercise; the independent assessment of the PARs done by ORO; the response to certain specific allegations made in connection with this subject; the use of the METPAC

model during the exercise; and the use which is made of ETEs in the SPMC.

**Applicable Legal Principles:**

1. An ETE should not reflect a worst case scenario, rather, it should reflect realistic conditions so that it is of use to the decision makers; for an ETE to be too conservative in its assumptions is as detrimental as it would be for all assumptions to be made in a highly unconservative manner. Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 246 (1986); Philadelphia Electric Co., ALAB-836, 23 NRC 479, 491 (1986); Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), LBP-85-25, 22 NRC 101, 106 (1985).

2. Licensing Boards are not required to deal with details of implementation in proceedings with respect to off-site emergency planning. See Cincinnati Gas & Electric Company (Wm. H. Zimmer Nuclear Power Station, Unit No. 1), ALAB-727, 17 NRC 760, 770, 773 (1983); Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), LBP-82-100, 16 NRC 1550, 1563 (1982).

**JI Contention No. 24**

**The Contention:** "Assuming the Commonwealth and EPZ municipalities would delegate authority to NHY to perform governmental emergency response functions, see, SPMC Plan, p. 3.1-2, an assumption the Town of Amesbury

denies, the anticipated protracted delay in obtaining this authority under emergency conditions would preclude prompt public notification or a timely public emergency response. See, NUREG-0654 II.E.6 and NUREG-0654 Appendix 3(b)(2)(a). For example, following NHY notification to the Commonwealth of an emergency, NHY must explain its own capabilities, and brief the Commonwealth on the emergency. PROCEDURES 2.14, p. 5. The Commonwealth, under the SPMC, then is required to assess its protective action response (PAR) capabilities and, if inadequate, purportedly may authorize NHY to implement police powers to provide assistance. Id; SPMC Plan, p. 3.1-2. The cumulative effect of these delays, briefings, multiple notifications, and communications through numerous lines of authority, will result in substantial delay in public notification and in timely PARs by the public, even if it is assumed that police power authority ultimately may be delegated by the Commonwealth and EPZ towns.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.2.a at pp. 10-11.

Opponents' Prefiled Testimony: The only testimony filed by the opponents on this contention is filed by TOA. At the outset there is a problem because TOA actually addressed such testimony as it did file mainly to JI 23<sup>24</sup>. The testimony

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<sup>24</sup> "The decision criteria described in the SPMC are not coordinated with those set forth in the NHRERP. Thus, the possibility exists for delayed and

that they apparently rely upon according to their trial brief<sup>25</sup> is testimony by Chief Cronin that he is unfamiliar with NHRERP or any emergency plan for other Massachusetts communities, that the Board of Selectmen members are sometimes hard to contact, and that he has only assigned police duties to duly sworn officers or auxiliary officers. We admit to being unclear as to how any of this is relevant to JI 24.

**Applicants' Prefiled Testimony:** *Applicants have withdrawn their prefiled testimony directed to this contention and will rely upon the rebuttable presumption.*

The subject of the notification of and coordination of PARs was addressed in Applicants' Rebuttal Testimony No. 11. The methods of obtaining permission from the Commonwealth to notify the public of, and implement, a PAR are described as are the methods and routes of the transmittal of PARs prior to, and after, ORO activation. In addition, the methods of performing public notification are described.

**Applicable Legal Principles:** None.

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conflicting PARs being formulated, transmitted and recommended to the relevant state governments. The SPMC has no adequate procedures to prevent this and therefore does not meet the planning standards set forth at 50.47(b)(1) and (10) and the guidance of NUREG 0654 II.A. and J."

<sup>25</sup> TOA Trial Brief at 7-10.

## JI Contentions Nos. 25 and 26

These contentions have been withdrawn by stipulation.

### F. Communication - Notification

#### JI Contention No. 27

**The Contention:** At an organizational level, the SPMC fails to adequately establish and define the relationships between the ORO and other organizations which are expected and relied upon to perform emergency response activities. Further, the SPMC does not adequately provide for effective coordination of effort between or clearly delineate the primary responsibilities of these other organizations and the ORO. As such, the SPMC does not meet the planning standards set forth at 50.47(b)(1), (2), (3), (5) and (6); 10 CFR Part 50, Appendix E, IV, A.6, 7, 8; and the planning guidance set forth in NUREG 0654 II. A.1.b., c, 2.a., b, 3; B.6, 9; C.5 (Supp. 1); E.1; and F.1.

#### Basis

A. The SPMC creates nine liaison positions staffed by ORO personnel, one local EOC liaison for each Massachusetts town and three state liaisons, one for the state EOC, one for the Area 1 EOC and one for the Massachusetts Department of Public Health. The function and role of these liaison personnel is left completely undefined. There is no procedure in the SPMC to insure that these liaison personnel are themselves knowledgeable about the SPMC so that they could intelligibly respond to inquiries concerning its structure and function, or otherwise "advise and assist state and local officials in implementing" portions of the SPMC. NUREG 0654, Supp 1, II.C.5. Moreover, there is no portion of the SPMC which would provide any indication to a local governmental official of the actual role to be performed by specific local organizations. The liaisons fail to establish any organizational or communicational link between the ORO

and the local organization which are relied upon to perform certain emergency activities. See Plan, Table 2.0-1.

B. The SPMC states that "law enforcement, fire and rescue needs and snow removal agencies are expected to be within local capabilities supported by mutual aid agreements and it is assumed that in an emergency, these agencies will continue to carry out their normal emergency functions." Plan 2.4-3, -4. The ORO will assist these "agencies" with "appropriate emergency information and exposure control." Plan 2.4-4.

1. There is no basis for the assumption in the SPMC that local capabilities will be augmented or supported by "mutual aid agreements." Obviously, other EPZ towns will not be able to provide such assistance and no prior arrangements or procedures are set forth in the SPMC to enable non-EPZ towns to identify the need for resources or to penetrate the EPZ access control to supply such resources. Thus, there is only an assumed coordination of effort described by the SPMC.

2. What is needed during a radiological emergency is something different from "normal emergency functions." The particular problems of security, public health, timely evacuation and emergency-specific rescue needs in addition to the overall scope and extent of the emergency response make the SPMC's reliance on business as usual totally inadequate. Because the SPMC has not even adequately identified the emergency responsibilities of police, fire and rescue agencies during a radiological emergency, it certainly has not assigned or established them adequately. See 50.47 (b)(1). Moreover, the SPMC would be of absolutely no assistance to local emergency workers or officials at the time of an emergency if they desire to participate in an ad hoc fashion.

C. The SPMC totally lacks local plans that are specific to the six Massachusetts communities and totally ignores the particular established routines existing in these communities for response to emergencies. Thus, no effective ad hoc relationship will develop between the ORO and the local communities making effective emergency response on the basis of the SPMC impossible.

D. There is no procedure for the notification of supporting organizations concerning which mix of authorization -- as to activity and jurisdiction -- is to be implemented by the ORO. As a result, none of the supporting organizations will be informed as to who has control and

command over any particular portion of the response. Further there is no delineated relationship between ORO personnel and non-ORO employees of support organizations as to issues of control and command, responsibility and liability.

E. The SPMC does not detail how a delegation of authority during an emergency would actually take place. No verification procedures are set forth that would insure that the specific content of state authorization is understood and verified. Further, no verification procedure exists as to the identity of those giving and receiving such authorization.

F. The SPMC does not detail what emergency response activities can be implemented or what mitigating actions will be taken for those activities for which no authorization is forthcoming from the state. The SPMC does not indicate how the ORO will modulate and specify its response to accord with the specific authorization mix --as to activity and jurisdiction-- that results at the time of an emergency. See Pro-2.14, Attachments 7 and 8.

G. The SPMC fails to indicate that effective planning has been done to coordinate the ORO and the SPMC with the State of New Hampshire's emergency response organizations. In fact, the SPMC does not even indicate that necessary New Hampshire personnel have read the SPMC or been trained with it. See App C, pages C-1a-1d.

*[Basis E, we have been advised by MAG, will be withdrawn.]*

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.2.a at pp. 10-11; A.3 at p. 12.

Opponents' Prefiled Testimony: With respect to Basis A, MAG has filed the testimony of Charles D. Jones. He states that the ORO liaisons will not be able to function effectively in a Mode 1 or mode 2 partial response, because they do not know enough about how Massachusetts operates to

interpret the plan to Massachusetts officials and personnel. He also says that there is a need for two liaisons at each location: one who knows the facility and one who knows the plan. In addition, he says that these liaisons should be concentrating on harmonizing the Massachusetts response with that of New Hampshire. With respect to Basis G, MAG filed the testimony of T. Michael Carter. He states that the exercise revealed that the coordination between ORO and the State of New Hampshire was less than optimal because the State of New Hampshire had closed its beaches before ORO gave its first public announcements and those announcements, when given, did not say what had been done in New Hampshire or give a recommendation for the New Hampshire beaches. In addition, the State of New Hampshire acted on and gave out recommendations on schools before ORO did. and, in the witness' opinion, this would cause parental concern in Massachusetts.

**Applicants' Prefiled Testimony:** Applicants address this contention in **Applicants' Rebuttal Testimony No. 21**. Therein is described the planning basis used with respect to SPMC as it relates to eventual Massachusetts participation; the existing capabilities of The Commonwealth; the SPMC conceptual basis and spectrum of response; the definition of liaison roles; the roles assigned to government by SPMC; the provisions for local communities and finally the coordination

of response with support organizations, The Commonwealth of Massachusetts officials, and the State of New Hampshire.

**Applicable Legal Principles:**

1. State officials and agencies will do their utmost to protect the public health and safety in an emergency situation, and can be assumed to follow SPMC in such circumstances.

**JI Contentions Nos. 28 & 29**

These two contentions have been withdrawn by stipulation.

**JI Contention No. 30**

**The Contention:** "The SPMC relies too heavily on commercial telephone links for critical and essential emergency communications. Because commercial telephone lines will be and should be assumed to be overloaded shortly after the onset of an accident at Seabrook, no essential emergency communications should be based in the first instance on commercial telephone communications. As such the SPMC fails to meet the planning standards set forth at 50.47 (b)(6) and planning guidance of NUREG 0654 II F.

**Basis**

**A. [TOWN 3, Basis ¶]**

Moreover, communications with local governments rely essentially on the use of commercial telephone service and do not provide for adequate backup in the event of the failure of commercial telephone service. Accordingly there is no reasonable assurance that timely notification and local

response can be made in the event of an emergency at Seabrook Station.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion F.1.a-e at pp. 29-34.

Opponents' Prefiled Testimony: CON has prefiled the testimony of Mr. O'Connor in which he states his opinion that reliance on commercial telephones for communication is inappropriate because there are no public telephones available at four TCPs in CON. MAG has filed some testimony on this issue. There is an unvarnished conclusory opinion by Mr. Sikich that there is "foreseeable line overload,"<sup>26</sup> and also a statement that phones at special facilities may not be manned.<sup>27</sup> MAG witness Barnicle indicates that at a number of special facilities and schools there are a limited number of telephone lines and in her hearsay testimony she reports alleged statements by officials at such institutions that these lines may become overloaded

Applicants' Prefiled Testimony: Applicants' prefiled testimony as to this contention is set forth in Applicants' Rebuttal Testimony No. 12. Therein, it is explained that the commercial telephone system is not relied upon for initial notification of offsite authorities. The backup

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26 Sikich 1 at 2.

27 Id. 41.

communication methodology in all cases where ORO rely on the telephone system are described. The steps which have been taken to mitigate the use of the telephone by the general public are described. Also set out is a description of the central office switching systems that are, or will be, in effect in the Massachusetts portion of the EPZ and how those systems prioritize in an emergency. Finally, it is pointed out that the primary method of communication for the Traffic Guides is not the telephone, but, rather, portable, multi-channel radios.

**Applicable Legal Principles:** None.

#### JI Contention No. 31

**The Contention:** The SPMC fails to meet the standards of 50.47 (b)(6) because there is no provision for an effective horizontal or lateral network of communications directly linking emergency field personnel with each other. As a result, all communications must be first vertically transmitted, processed and recommunicated leading to delay, miscommunication and gaps in the communications network. The failure to provide a lateral communications system is a defect in the SPMC which will affect traffic management and evacuation, security, timely response to emergencies-within-the emergency and otherwise result in a wooden and ineffective emergency response. See Long Island

Lighting Company (Shoreham  
Nuclear Power Station, Unit 1),  
LBP-88-2 at 50 et seq.  
(February 1, 1988).

References to FEMA Findings of Adequacy and Capability  
of Implementation: SPMC Report - Criterion F.1.a-e at pp.  
29-34.

Opponents' Prefiled Testimony: MAG has prefiled a piece  
of testimony sponsored by Mr. Sikich and Stan Cohn. It is  
the thrust of this testimony that the Emergency Radio Network  
(ERN) cannot reach buses outside the EPZ. This means that  
route guides are not reachable for some of the time. Next  
the point is made that too many people are assigned to the  
route guides radio channel. Next, the testimony criticizes  
the roll call procedure to be sure route guides have all  
received a general message (such as to ingest KI) because it  
will add to channel overload. Next the testimony criticizes  
the fact that there appears to be no procedure whereby a  
route guide who spots an impediment can call to an upstream  
guide and have him reroute traffic rather than having to  
communicate up the line to ORO and back down again.

Applicants' Prefiled Testimony: Applicants address this  
contention in Applicants' Rebuttal Testimony No. 22. This  
testimony addresses the provisions for prompt communication  
among ORO field personnel, ERN system capabilities,  
communications with route and traffic guides, transfer point

dispatchers, road crews, and ambulance drivers, control of the ERN and information gathering, and communications training.

Applicable Legal Principles: None.

JI Contentions Nos. 32 & 33

These contentions have been withdrawn by stipulation.

JI Contention No. 34

The Contention: "The SPMC fails to meet the planning standards set forth at 50.47 (b)(5) and the guidance provided in NUREG 0654, II. E. 1., E.2 and F.1 because the notification and mobilization of response organizations and personnel is not adequate.

Basis

C. The SPMC provides no adequate means of alerting, notifying and mobilizing key emergency personnel such as bus drivers, ambulance drivers and others. The SPMC simply leaves this function to the contracting employers, but provides no detail on who, how and when such notification will take place. This fails to meet the standard set forth at NUREG 0654, II.E.2.

*Bases A, B, and D for this contention have been withdrawn by stipulation. It has been represented to the Applicants that Basis E will be withdrawn also.*

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion F.1.a-e at pp. 29-34; Criterion E.2, at p.23.

Opponents' Prefiled Testimony: The only testimony prefiled on the subject of this contention is contained in the Mangan et al. testimony. It consists of a paragraph

which says in effect that if the emergency occurs during late afternoon or early evening or on weekends, the drivers may not be home to get a phone call.<sup>28</sup> Beyond this, MAG apparently intends to rely on cross-examination.<sup>29</sup>

**Applicants' Prefiled Testimony:** Applicants' prefiled testimony on this contention appears in Applicants' Rebuttal Testimony No. 8. Therein, it is stated that the bus companies will be notified by the Melita Emergency Telenotification System (METS) and the companies will, in turn, notify and ascertain the availability of their drivers by means of a procedure distributed to them.

**Applicable Legal Principles:** None.

#### JI Contentions Nos. 35 & 36

##### The Contentions:

##### JI 35

##### Contention

The emergency messages to be utilized by the ORO in the event of an emergency at Seabrook are inadequate and will not be effective in communicating necessary information to the public. As a result, the SPMC does not meet the planning standards set forth at 50.47(b)(1), (5) and (6) and the guidance provided by NUREG 0654 at II E.3, 4, 5, 6, 7, and 8, and F.1.

##### Basis

A. The messages prepared by the ORO are misleading, confusing, self-contradictory, and ignore important

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28 Mangan at 37.

29 MAG Trial brief at 62.

characteristics of the recipient public in Massachusetts and its response to a radiological emergency at Seabrook.

B. The SPMC makes no provision and provides no procedure for coordinating emergency messages with participating and non-participating state and local governments as required by NUREG 0654, II.B.7.d. and Supp. 1, II.E.8.

C. The messages do not adequately address the issue of their source and do not explain who and what is controlling and directing the emergency response. There is no discussion in the messages of the emergency relationship between ORO and the state and/or local governments. See NUREG 0654, Supp. 1, II E.7.

D. The SPMC provides no adequate procedures for insuring that the emergency messages broadcast to the public correlate with the messages and information provided to the media by the NHY ORO and other officials.

E. The pre-established messages set forth in the SPMC at Pro-2.13, Attachments 2-24, may be altered or modified by the Public Notification Coordinator. Pro-2.13 at 8. No guidance or training is provided this individual on the essential components of an effective emergency message. As a result, the messages(s) actually broadcast may be less effective than those set forth in the SPMC.

JI 36

#### Contention

The SPMC does not provide adequate procedures for coordination with the news media, and therefore does not meet the planning standards of 10 C.F.R. 50.47(b)(7) and (8).

#### Basis

##### A. [MAG 21A]

No provision has been made in the SPMC for the news media at the Emergency Operations Facility ("EOF"). The Media Center is located in the Town Hall, Newington, New Hampshire (Plan 3.7-6) which is three to four miles from the EOF and the EOC (Plan 5.1-2). However, the Public Information Advisor who is responsible for issuing news releases and directing public information activities is located at the EOC and not the Media Center. No adequate

procedures for coordinating the activities of the public information staff at the EOC and the personnel at the Media Center are provided. Adequate procedures also do not exist for the coordination of the activities of Media relations representatives who will be communicating directly with the press by telephone.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion E.5 at p. 27; Criterion E.8 at p. 28; Criterion G.3 at p. 39; Criterion G.4.a at pp. 40-41.

Opponents' Prefiled Testimony: With respect to JI-36, MAG has filed the testimony of T. Michael Carter. He criticizes the way ORO is set up to handle the media; he feels that it is necessary to be ready for a potentially disruptive and highly charged atmosphere. It is his view that during the graded exercise, messages were haphazard and delayed and in a real emergency, a hostile press would have used these matters to say that those in charge did not know what they were doing.

Applicants' Prefiled Testimony: Applicants address these contentions in Applicants' Rebuttal Testimony No. 19. Therein is full description of the SPMC's public information resources and personnel and a description of how emergency information material is coordinated and disseminated to the public. The testimony also sets forth a description of the concepts for effective emergency information and a basis by basis rebuttal with respect to the two contentions.

Applicable Legal Principles: None.

JI Contentions Nos. 37 & 38

JI-37 has been withdrawn by notice; MAG has represented to Applicants that he will be withdrawing JI-38.

JI Contention No. 39

The Contention: "The information to be made available to the public pursuant to the SPMC prior to an emergency does not meet the regulatory standards as set forth at 50.47 (b)(7), NUREG 0654 II. G. and 10 CFR Part 50, Appendix E, IV. D.2.

Basis

A. [MAG 24A]

Plans and procedures for disseminating pre-emergency information is inadequate. There is no assurance that the many thousands of transients who frequent the Massachusetts portions of the Seabrook EPZ will have available to them either prior to or at the time of an emergency any information concerning the methods and times required for notification, the protective actions planned, the nature and effects of radiation or a list of sources of additional information.

B. [MAG 24C]

Inadequate provisions have been made to insure that the special needs population receive necessary pre-emergency information.

C. [MAG 24D.1, 2, 6 - 9]

The content of the pre-emergency information made available to the public is not adequate and does not meet the regulatory requirements.

1. The information is not adequately presented to the reader as important emergency information that should be retained.

2. The discussion of the health risks of radiation is inadequate and will confuse the reader as to the need for and proper circumstances of emergency response. The information fails to state or indicate that radiation can be harmful and life-threatening and that a release of radiation would be and should be considered an emergency.

3. The public is not informed about the lack of participation in emergency planning by the state and local governments and the basis for that non-participation. No adequate discussion is presented concerning the ORO and the nature of the SPMC as a utility plan, and the relationship(s) during an emergency between the ORO and state and local governments.

4. Inadequate information is provided to parents regarding procedures to be employed in the event of an evacuation of school children.

5. Inadequate information is provided with respect to "How To Take Shelter." The information fails to instruct people to seek shelter in basements or the lowest level possible, and in rooms with the fewest number of doors and windows. Inadequate and inappropriate information is provided with respect to respiratory protection.

6. Inappropriate information is provided with respect to pets. Most pet owners would be unwilling to leave their pets at home in the event of a radiological emergency and therefore might be discouraged from reporting to reception centers if accompanied by a pet, even when they are instructed to do so for monitoring and decontamination. The information also fails to inform pet owners that they could be gone from their homes for at least several days or weeks, or even indefinitely.

D. [MAG 53A]

With respect to public education materials, the types of materials to be utilized will not be effective in reaching many special needs persons.

E. [MAG 53C]

The public information materials which have been provided contain too little and inadequate information to establish adequate preparedness for those who have disabilities.

F. [MAG 53D]

The materials have not been designed using channels or methodologies which are appropriate to specific handicapped types. The information is all in the form of printed words.

G. [MAG 53E]

To adequately prepare for addressing the needs of those who have special needs during an emergency, specific information about the needs of those individuals must be targeted to the general public and emergency workers. The SPMC does not do this.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion G.1 at pp. 36-38; Criterion G.2 at p. 38 & App. A at pp. A-1 -- A-29, App. B at pp. B1 -- B23.

Opponents' Prefiled Testimony: As to this contention, MAG offers the prefiled testimony of Lynne D. Filderman. Ms. Filderman criticizes the failure to use public media and the lack of any statement in the materials used to the effect that SPMC is not endorsed by The Commonwealth. She then engages in criticism of various aspects of the calendar and other print materials being used by the Applicants. Finally, she expresses concern that transients may not, in fact, receive pre-emergency information.

Applicants' Prefiled Testimony: Applicants address this contention in Applicants' Rebuttal Testimony No. 7. Therein are described the FEMA guidance on the issue and the point is made that some of the materials have been distributed and

others are in draft form. It is pointed out that, in fact, multi-media efforts are made. The point is also made that instructions for pets are not required and that, in fact, The Commonwealth has a phone message that instructs owners to leave their pets at home in time of emergency. The methods of getting information to transients are described as are the distribution and content of special needs public information. Finally, there is a section of the testimony that directly confronts some of Ms. Filderman's theories of the purpose of preemergency public information.

Applicable Legal Principles: None.

JI Contention No. 40

This contention has been withdrawn by stipulation.

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*[It is to be noted that JI Contentions 41-44A&B are legal in nature. JI-44A and JI-44B have been disposed of on summary disposition]*

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G. SPECIAL NEEDS

JI Contention No. 45

The Contention: "The SPMC fails to offer reasonable assurance that adequate protective measures can and will be taken in a timely fashion for schools and day care centers. Thus, it fails to comply with 10 CFR 50.47(a)(1), 50.47(b)(10), 50.47(b)(14), 50.47(b)(15), 50.47(c)(1); NUREG

## Basis

### A. [MAG 47A]

The SPMC does not contain separate emergency response plans for the staff and students at each of the schools, including day care centers and nursery schools, in the six Massachusetts EPZ communities, and those outside the EPZ which receive students from inside the EPZ. Nor does the SPMC provide any reasonable assurance that each of these schools has an adequate school-specific plan for responding appropriately or in a coordinated or integrated manner with the SPMC in the event of a radiological emergency at Seabrook Station. Without adequate school-specific plans for each school, there is no reasonable assurance that adequate protective measures can and will be taken for school children. Most schools have no such plans. Existing emergency plans, while adequate for responding to fires and snow storms, are wholly inadequate for responding to a radiological emergency, especially one which is serious and fast-developing. While reference is made in Appendix F of the SPMC to a "Generic Massachusetts Public School Plan," the schools have no knowledge of such plans and would not keep or use them if offered by NHY. Nor could any "generic" plan ever be adequate for the wide range of different types of schools, which have vastly different student populations, student age groupings, student/teacher ratios, class sizes, layouts and construction (for sheltering), organizational capabilities, compositions of special needs children, different methods of notifying parents, etc. Absent the existence of institution-specific radiological emergency response plans to address the different preparedness needs of each school, there is no reasonable assurance that adequate protective measures can and will be provided to school children.

### B. [MAG 47B]

The implementing procedures for the School Coordinator and School Liaisons are poorly drafted, vague, and confusing. For example, Pro-1.9 § 5.2.1 instructs the School Population Liaisons upon arrival at the Staging Area to "proceed to your location as shown in Attachment 3, Layout of Staging Area, of Implementing Procedure 3.2." The Attachment referred to is

the NHY ORO Message Form, not the staging area layout, which is Attachment 5 of Pro. 3.2. Moreover, the procedures for the Coordinator and School Liaisons are set forth in two separate Implementing Procedures (1.9 and 2.7) which are neither identical nor sufficiently integrated with each other to ensure that confusion and mistakes will not occur.

E. [MAG 47E]

The Implementing Procedures do not make it clear what the School Coordinator will tell the Liaisons to do when the Coordinator is informed that NHY's ORO has "recommended" a PAR to state or local officials but is awaiting a response. The procedures for Special Population Coordinators and Special Population Liaisons do not differentiate clearly between a PAR which has been recommended by NHY's ORO but is not yet authorized (or rejected) and a PAR being recommended after having been authorized by state/local officials. If the SPMC contemplates sending buses to schools upon ORO's mere recommendation of an evacuation PAR to state/local officials, this would create a host of problems, especially if the state/local officials were to decide sometime later when the buses were loading to direct the population to shelter. If the SPMC does not contemplate that buses/ambulances would be sent upon the issuance by ORO of a mere PAR recommendation to state/local officials, it should clearly state this in the Implementing Procedures and eliminate this confusion.

F. [MAG 47F]

The SPMC's reliance on the 16 bus companies listed in Appendix M, pp. M-4, 5, to provide the drivers, vans and buses listed is unfounded. At least eight of the 16 companies have either confirmed that they will not participate or that they will offer only the buses, vans and drivers that might be available, if any, at the time of an emergency. Thus, there is no reasonable assurance that a single bus, van or driver will be available from at least eight of the 16 companies relied upon. The remaining companies do not have sufficient drivers and buses to transport all school children out of the EPZ in a timely fashion.

G. [MAG 47G]

The SPMC underestimates the number of school buses that will be needed. There are more students than have been estimated, especially in day care and nurseries, but also in

the schools. In addition, during an emergency additional adult supervision will be needed on each bus, and the average capacity of the buses has been overestimated.

H. [MAG 47H]

The SPMC procedures for notification to the School Coordinator and the confusing implementing procedures for the School Coordinator in both Pro. 1.9 and 2.7, prohibit a timely offer of information and transport resources to School Superintendents for all public schools, especially in fast breaking accidents at Seabrook Station. The School Coordinator has to be briefed himself, and then must then call each Superintendent one by one. See Pro-1.9, § 5.1 and Attachment 2. Some of the school Superintendent phone numbers are not even listed in Appendix M. Clearly the phone conversations with each Superintendent could be quite lengthy, especially since they will have had no prior emergency response training and will not know a great deal. The last Superintendent may not be notified for a number of hours after an Alert is declared. Where school officials have not already heard EBS messages, such time-consuming procedures may prevent school officials from considering early dismissal or other early protective actions. Those school officials who may have already "heard" of a problem at Seabrook Station may already have begun ad hoc protective action which are inconsistent with the SPMC, e.g., instructing parents to pick up children or busing students to some location other than a reception center or a host school facility.

I. [MAG 47I]

The SPMC's procedures for providing information and offering transport resources to private schools, day care and nurseries is even more time-consuming than that for notifying School Superintendents. Such notification is done by School Liaisons after they have reported to the Staging Area, been briefed by the School Coordinator and, if permitted access, driven to a local EOC, where a telephone may not be available immediately. See Pro. 1.9, § 5.2 and Attachment 4; Pro. 2.7, § 5.3. Then calls must be made, one by one, again with lengthy conversations likely occurring for each call. The last school will not be notified for many hours after an Alert has been declared. As a result, these school officials may be prevented from considering early dismissal or other protective actions. Those private school officials who may have already "heard" of a problem at Seabrook Station may already have begun ad hoc protective actions which are

inconsistent with the SPMC, e.g., instructing parents to pick up children for busing students to places other than reception centers or the host school facility.

J. [MAG 47J]

The SPMC proposed to include school information in the EBS messages if the schools request that this be done. If most of the schools respond to this offer, the EBS messages will become extremely long and drawn out.

K. [MAG 47K]

The SPMC's provisions offer no reasonable assurance that sheltering can or will be implemented appropriately or in a timely fashion in the schools. The SPMC contains procedures for having the School Liaisons call the special facilities and read a prescribed School Protective Action Message. Pro-2.7, Attachment 1. If sheltering is recommended, however, the Liaison provides no information whatsoever of how this is to be done. Cf. Pro-2.7, Attachment 3. It assumes without any basis for doing so that the school has its own sheltering procedures. For those facilities which have no sheltering plan, the message simply affords inadequate guidance on how to implement a timely, safe and effective sheltering response. There are no instructions, for example, as to where in the school shelter should be sought (i.e., in basements or interior rooms), no instructions regarding the closing of windows and doors, and no instructions regarding what actions should be taken for respiratory protection (such as placing several layers of toilet paper over the mouth and nose). No specific TV or radio stations are mentioned for receiving EBS information about sheltering instructions. There is therefore, no reasonable assurance that adequate sheltering will be provided.

L. [MAG 47L]

There are a significant number of schools throughout the Massachusetts EPZ that would be totally inappropriate for sheltering school children -- the population most sensitive to radiation exposure -- because the schools have no basements or interior rooms, and have exterior walls which are almost entirely, or substantially, comprised of glass. In addition, there are a number of newer schools with climate control systems that are totally reliant on outside air.

M. [MAG 47M]

The SPMC does purport to offer schools transportation assistance in the event that an evacuation is recommended but it makes this offer in less than a timely fashion (as noted above) and when the offer is made it does so in a way which does not give schools the option of choosing to use their own staff and equipment to effect evacuation. The School Protective Action Message read by the School Liaison first has the Liaison "verify your transportation requirements in the event of an evacuation." Pro. 2.7, Attachment 3. The Liaison then reads this sentence: "We will have the vehicles you identify dispatched to your school [ ] to support your immediate evacuation." This is inconsistent with the Liaison's "conditional response activities" in Pro. 1.9, Attachment 3, p. 4, which suggests that the Liaison at least "inquire" whether the school's regular contracted bus company is assisting with transportation and, if so, whether they know the route to the appropriate reception center.

N. [MAG 47O]

When schools are asked to verify their transportation needs, most schools will not be able to respond with any reasonable degree of certainty if they try to guess how many of their regular contracted buses will show up.

O. [MAG 47P]

The School Liaisons will not be able to state how quickly the SPMC/ORO buses will arrive at given schools. As a result, prudent school officials will not wait for ORO's buses but will seek to implement an ad hoc transportation scheme or will ask parents to pick up children.

P. [MAG 47S2]

The SPMC fails to ensure that school students who walk or drive themselves to school will take appropriate action during an evacuation when they leave the schools on foot or in their own vehicles. There is no assurance that they will go to Reception Centers or the Host School Facility. There is also no assurance that they will go home and meet up with their families.

Q. [TOWN 7.3]

Appendix M, Amendment 3 fails to accurately reflect the number of day care providers and children being cared for by these providers in West Newbury. Appendix M, Amendment 3 also fails to accurately reflect the number of students and staff at the schools in West Newbury.

*[N.B. Bases C and D have been  
withdrawn by stipulation]*

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.9 at pp. 56-58; Criterion J.10.d at pp. 60-62; Criterion J.10.g, at pp. 64-65.

Opponents' Prefiled Testimony: Relying upon the hearsay testimony of Witness Barnicle as to a survey she took of schools and special needs facilities and Witnesses Mangan and Paolillo as to a survey of bus companies, MAG witness Sikich has prefiled testimony as to this contention in which he makes the following points: He says there are not enough liaisons for the schools and they will be so busy answering questions during the initial phone calls that they will not be able to complete all their calls in an appropriate amount of time. He claims there are not enough telephone lines into the schools and as a result they will be tied up by anxious parents; he believes ORO should supply staff at each school to explain things and thus avoid confusion which he surmises will otherwise occur; he claims there are not enough buses which will be available to evacuate the schools; and,

finally, he argues that a site specific plan for each school is required. In addition, Mr. Sikich has filed a piece of testimony addressed to this contention in which he gives his view, based on his understanding of things that happened during the graded exercise, that the ORO is unable to coordinate the timing and content of messages to schools and parents of school children satisfactorily.

**Applicants' Prefiled Testimony:** In Applicants' Exhibit 41 it is demonstrated that there are more than enough buses to evacuate the entire Massachusetts portion of the EPZ, including the schools. This contention is also addressed in Applicants' Rebuttal Testimony No. 6. There the point is made that information provided by ORO and received from the schools at the time of the emergency is adequate to support the PAR. In the event the ORO is unable to get through to a school or other special facility, conservative "default values" will be assumed for the purpose of dispatching buses and other forms of transportation. In addition, it is observed that there is no requirement that an individual plan be developed for each school and special facility. In addition, Applicants address in Applicants' Rebuttal Testimony No. 18 the issues raised with respect to the handling of schools during the graded exercise.

**Applicable Legal Principles:** None.

JI Contention No. 46

The Contention: "The SPMC fails to provide reasonable assurance that adequate protective measures can and will be implemented for all those persons who are patients in the two hospitals within the Massachusetts EPZ and for those who become injured during the emergency, from radiation contamination/exposure. The SPMC therefore fails to comply with 10 CFR 50.47(a)(1), 50.47(b)(10), 50.47(b)(12) and NUREG 0654, Rev. 1, Supp. 1, II.J.10.d, 10.e, 10.g; and II.L.

Basis

A. [MAG 48A]

In the event of an evacuation, the two hospitals located within the EPZ have more patients than can be accommodated by the hospitals with which NHY has reached agreements. The Amesbury Hospital currently has approximately 44 beds in use. They are at full capacity at this time and will be expanding to 58 beds in August, 1988. The Anna Jacques Hospital in Newburyport has approximately 156 beds and is presently operating at 58% capacity (or approximately 90 patients). Thus, in the event of an evacuation, accommodations would be required for approximately 148 patients.

The hospitals with which NHY purports to have agreements would not be able to provide the required beds for these patients. A summary of the services offered by the hospitals designated in the SPMC are as follows:

Hospital A has eleven physicians to handle simple contamination cases. However, in regard to the relocation of patients from hospitals within the EPZ, or accommodating radiologically injured persons, the hospital would be able to provide only five beds at best.

Hospital B has signed a letter of agreement to care for patients located at the Anna Jaques Hospital in the event of a radiological emergency. However, Hospital B has no intention of treating radiologically contaminated individuals.

Hospital C has contracted with NHY officials to provide emergency disaster services. They would be able to activate these services within a twenty-four hour period. Hospital C would only be able to accommodate approximately ten very severely injured patients. The hospital has a capacity of 730 beds of which 85-90% are usually occupied.

Hospital D has no agreements with NHY to care for relocated patients or to provide decontamination facilities.

Hospital E has agreed with NHY officials to accept transferred patients from other hospitals. Its capacity is 300 beds, of which 20 are usually available. It does not have the facilities to handle radiologically contaminated individuals.

Hospital F has agreed to provide only acute care services to nursing home patients. They have declined to offer decontamination facilities after being approached by NHY. It has a capacity of 108 beds of which 90 are usually filled.

Hospital G has agreed to assist in the relocation of patients from Anna Jacques Hospital. They have not agreed to provide treatment for radiologically contaminated individuals. Hospital G could accommodate approximately forty patients in the event of an emergency.

Hospital H has not made any agreements with NHY regarding the relocation of patients within the EPZ, or for treatment of radiologically contaminated individuals, in the event of an emergency. The hospital is equipped to treat up to three "chemically affected" patients. The hospital is licensed to accommodate 365 patients and might have approximately ten beds available in the event of an emergency.

Hospital I has reached no definite agreement with NHY. It was the understanding of the Chief Operating Officer, from discussions with NHY conducted over one year ago, that Hospital I would act as a "back-up" to Anna Jaques Hospital. Hospital I can accommodate 311 patients and operates at about 64% of capacity. They do not have any decontamination facilities. In the event of an emergency, it could provide approximately thirty beds.

In summary, the hospitals identified in the SPMC would be able to accommodate, at best, approximately 133 patients.

This total includes beds to be provided by Hospitals D and I which have not entered into any agreements with NHY. Even assuming that these hospitals would provide accommodations in the event of an emergency, the total number of beds provided would fall short of the approximate 148 beds required just to relocate Amesbury Hospital and Anna Jaques Hospital.

The SPMC also fails to ensure that adequate accommodations will be available for the radiologically injured in the event of an emergency. It fails to take into consideration that during a radiological emergency it is highly likely that hospitalization will be required for people suffering non-radiological injuries sustained during an evacuation (as a result of auto accidents, heart attacks, etc.) Reasonable estimates of the number of persons who may need to be hospitalized as a result of radiation from a serious radiological accident at Seabrook Station greatly exceed the beds available. These estimates are based on the size of the beach population on busy summer days, the lack of sheltering available to them, and the fact that severe traffic congestion will entrap thousands of persons in the beach areas and prevent their evacuation for many hours. The arrangements in the SPMC for their care are grossly inadequate. Reasonable estimates of the number of people who may sustain non-radiological injuries during an evacuation also greatly exceed the beds available.

Furthermore, decontamination facilities are inadequate at the hospitals identified in the NHY plan. Only Hospital A and Hospital C have stated they have the ability to treat radiologically contaminated persons. Hospital C would only be able to treat ten cases, at most, of radiological contamination. Hospital H is equipped to treat up to three "chemically affected" patients. It is reasonably estimated that a number of persons who will need hospital decontamination services will greatly exceed the capacity of these hospitals to provide this service.

B. [MAG 48B]

The SPMC makes inadequate preparations for the safe, efficient evacuation of patients located within the EPZ at Amesbury Hospital and Anna Jaques Hospital, Newburyport. Amesbury Hospital has been contacted by NHY officials but the role and/or responsibilities of the hospital were unclear to hospital administrators. It does not have any agreements with any other hospitals at this time regarding the relocation of patients during a radiological emergency. In the event that an evacuation was ordered, it would have to be

accomplished in an ad hoc fashion by the town ambulance service, private ambulance service, or by patient's families. These sources of transportation would be unreliable. However, assuming that transportation were available, an evacuation of the hospital would take many hours. No institution-specific evacuation time estimate has been prepared. At Anna Jaques Hospital, no evacuation plan has been developed to provide for the evacuation and relocation of patients in the event of a radiological emergency. Any evacuation which would occur would be ad hoc, accomplished through private ambulance services with which the hospital has "working relationships" but no written agreements. These sources would be unreliable, however, in the event of a radiological emergency. Assuming that adequate transportation were available, an ad hoc evacuation of the hospital would take many hours. No institution-specific evacuation time estimate has been prepared.

C. [MAG 48D]

The SPMC has arrangements for an inadequate number of ambulances to evacuate all those who may reasonably need such transportation so there is no reasonable assurance that NHY ORO can implement a timely evacuation of the two hospitals in the Massachusetts EPZ.

D. [MAG 48E]

The SPMC provides no reasonable assurance that the Amesbury and Ann Jaques hospitals are suitable as shelter in a radiological emergency.

E. [MAG 48F]

The sheltering instructions provided to hospitals by ORO are wholly inadequate to provide reasonable assurance that adequate sheltering measures can and will be taken by hospitals.

F. [MAG 48G]

The Generic EPZ Hospital Plan mentioned in Appendix G is too vague to be of any real benefit to the hospitals. Amesbury Hospital received such a plan but has not kept it. There is no indication that Anna Jaques would keep it or find it of any benefit either. Only site-specific EPZ hospital plans can provide reasonable assurance of adequate preparedness, and then only when backed up with a staff trained in appropriate emergency response actions.

H. [SAPL 5, Basis ¶]

There are only 4 hospitals identified in the SPMC from which letters have been obtained having anything to do with a radiological emergency at Seabrook Station. The letter from New England Deaconess Hospital, dated Sept. 10, 1987 states that the hospital has agreed to work with New Hampshire Yankee only to the extent "to assess feasibility and appropriateness" of the hospital providing services as a host facility. There is no agreement or even mention that New England Deaconess Hospital might provide any monitoring or decontamination services for evacuees from hospitals in the EPZ. The letter of agreement with The Hunt Hospital commits that facility only to the provision of acute care beds for nursing home patients and states specifically that The Hunt Hospital "would not be utilized for evaluation and treatment of 'contaminated injured' members of the public." The letter of agreement with St. Joseph's Hospital in Lowell, Massachusetts, dated 8/31/87, requires only that the hospital have a minimum of one physician and one nurse on call within 2 hours capable of supervising, evaluating and treating radiologically contaminated injured members of the general public. No estimate of the number of evacuees St. Joseph's could treat is provided. The letter of agreement with St. John's Hospital has only to do with the hospital's acceptance of hospital patients. No mention whatsoever is made of monitoring or decontamination capability. The letter of agreement with Brigham and Women's does not specify the extent of services to be provided. Further, the arrangements for transporting victims of radiological accidents to medical facilities are inadequate. The SPMC states at 2.4-3 that the NHY-ORO maintains letters of agreement and/or contracts with ambulance companies capable of transporting non-ambulatory and contaminated and/or injured individuals as listed in Appendix M. However, the Ambulance letters of Agreement in Appendix C only support a total of 42 ambulances, at least 4 of which will not be available since Amoskeag Ambulance has gone out of business. Furthermore, these same ambulances are to be drawn upon to transport special facilities populations to host facilities. According to Appendix M, all 42 of the ambulances from Appendix C are needed for evacuation of the listed special facilities, leaving none for the functions stated at 2.4-3.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.9 at pp. 56-58; Criterion J.10.k at pp. 60-62; Criterion J.10.g at pp. 64-65.

Opponents' Prefiled Testimony: Again relying on the hearsay testimony of Ms. Barnicle, MAG witness Sikich addresses this contention. He alleges that there are not enough telephone lines into the hospitals and they will become jammed as relatives of patients call in, thus preventing ORO from reaching the hospital, to ascertain transportation needs. He decries the lack of individual plans for each hospital and claims that there is not enough host hospital bed capacity for those who will be evacuated. MAG witness Leaning has prefiled testimony as to the need for an ability to care for the contaminated injured.

Applicants' Prefiled Testimony: Applicants address this contention in Applicants' Rebuttal Testimony No. 6. As in the case of the schools the point is made that an adequate response will be implemented without existing facility specific plans. If there is an inability on the part of the liaison to get through to the hospital, transportation resources will be assigned out on the basis of conservative default values. As to facility specific plans, the point is made that all hospitals and nursing homes subject to Federal regulation are required to have, and regularly exercise, an

emergency plan. The testimony further describes in detail the provisions and agreements made for care of the contaminated injured. As to the availability of host hospital beds, the testimony demonstrates that there are 350 beds under an LOA for an expected need of 259.

**Applicable Legal Principles:**

1. Hospitalization for most people who are contaminated (but not injured) would not be an emergency matter. Southern California Edison Co. (San Onofre Nuclear Generating Station), ALAB-680, 16 NRC 127, 136-38 (1982).

2. To be accredited by the joint Commission on Hospital Accreditation, a hospital must have the capability to treat contaminated injured individuals. Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), CLI-85-15, 2 NRC 184, 186 (1985).

**JY Contention No. 47**

**The Contention:** "There is no reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Seabrook Station for institutionalized persons (e.g., patients in medical facilities) who cannot be evacuated. The SPMC therefore fails to comply with 10 CFR 50.47(a)(1), 50.47(b)(10) and NUREG 0654, Supp. 1, II.J.9, II.J.10.d, and II.J.10.e.

## Basis

### A. [MAG 49A]

Although the SPMC at Plan 3.6-6 acknowledges that there may be some institutionalized persons who cannot be evacuated, there is no reasonable assurance in the event of an emergency in which the general population is advised to evacuate that there will be sufficient medical and other support staff available to care for the patients who are unable to evacuate. The SPMC makes no provision for staffing hospitals under these circumstances.

### C. [MAG 49C]

Although the SPMC at Plan 3.6-6, acknowledges that some institutionalized persons cannot be evacuated, there are no special decision-making criteria for the institutionalized population that take into account the special factors associated with sheltering or evacuating that population such as the greater risk to that special population from evacuation and the relatively better shielding protection that would be afforded by sheltering in a large building such as a hospital. Moreover, the message to be given to hospitals in the event of an emergency where the general population is instructed to evacuate, provides no instructions at all with respect to sheltering, and in fact, only speaks of the hospital's evacuation needs (see Pro-2.7 at 15) thus implying that all hospital patients will be evacuated regardless of the situation. Thus, the SPMC fails to provide reasonable assurance that adequate measures will be taken for institutionalized persons who cannot evacuate.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.9 at pp.56-58; Criterion J.10.d at pp. 60-62; Criterion J.10.g at pp. 64-65.

Opponents' Prefiled Testimony: MAG witness Sikich, again relying on the hearsay testimony of Ms. Barnicle, testifies that the SPMC does not contain enough information on the shelter potential of the hospitals; that there will not be sufficient hospital staff to care for those remaining

in the hospital, especially at night; that there are not enough ORO staff to assist in the cases of people who have to shelter in a hospital for lack of ability to move; and, the somewhat surprising assertion that no one at hospitals will know how to administer KI.

**Applicants' Prefiled Testimony:** In Applicants' Rebuttal Testimony No. 6 the point is made that the decision to require the sheltering in a hospital of a patient because movement would be unwise is an option always open to the administration of the hospital. Provision is made for that decision to be conveyed to the ORO so that permission can be sought from The Commonwealth to distribute KI to protect the well-being of the patient.

**Applicable Legal Principles:** None.

#### JI Contention No. 48

**The Contention:** "The SPMC is deficient because it has not identified all or even most of the special needs resident population, has not sufficiently assured the security of acquired information about special needs individuals, has not adequately determined the specific assistance needed by identified individuals to cope with a radiological emergency, has not identified other individuals and organizations capable of assisting and the type of assistance required, and has no adequate procedures for assuring that this data is periodically validated. Thus, the SPMC does not comply with 10 CFR 50.47(a)(1), 50.47(b)(7),

50.47(b)(10), 50.47(c)(1), and  
NUREG-0654, Rev. 1, Supp. 1,  
Sections II.G and II.J.

## Basis

### A. [MAG 50A]

The plan proposes to conduct periodic special needs surveys by mail. Plan 3.7. This method is unreliable for a number of reasons. All homebound persons in need of special assistance will therefore not be known to NHY and thus cannot be assisted in sheltering themselves or evacuation in the event of an emergency. The identification proposal is inadequate in the following respects:

1. \* The survey already conducted to identify persons with special needs produced unreliable results because of the wide-spread opposition to Seabrook. Future surveys will likely product similarly unreliable results.

a) Some persons refused to complete forms in protest;

b) Some persons reported that members of their families had special needs when, in fact, they did not;

c) Forms were collected by opposition groups and not sent in.

2. The deeply-felt and widespread opposition to Seabrook does not engender confidence on the part of special needs persons that the information they might submit will be kept confidential, thereby discouraging submission of such data.

### B. [MAG 50B]

It appears that each special needs resident will be listed by name in Appendix M. This listing will also show each person's address, phone number, and an identification of those who are hearing-impaired, sight impaired, or mobility-impaired (in need of an ambulance, wheelchair van or curbside pickup). Section 7.2.3 of the SPMC states that because of the confidential nature of the contents, Appendix M will have "limited distribution." It will also be "maintained at [all] emergency response facilities and provided to Federal Regulatory agencies." Conceivably, there could be dozens of

copies of Appendix M which contain this private information. The SPMC provides no procedures for assuring the effective security of this information. Any ad hoc procedures that may be devised by NHY do not provide reasonable assurance of adequate security.

C. [MAG 50C]

Individualized determinations of functional characteristics of special needs persons necessary to cope with a radiological emergency are not sufficiently specific. Appendix M utilizes a "Needs Code" with only 5 general categories. Much information on functional characteristics and needs could and should be obtained to enable appropriate and timely assistance to be provided.

D. [MAG 50D]

With the exception of transporters during evacuation, individuals and organizations capable of assisting handicapped persons on an individual basis have not been identified. The plan also fails to identify people resources within the handicapped community who may be utilized in the development, review and exercise of plans for the homebound and other special needs residents.

E. [MAG 50E]

The proposal provides no reasonable assurance that the information collected will be validated, updated, or maintained, but merely asserts that periodic surveys will be mailed which, for the reasons stated above, is an unreliable method.

**References to FEMA Findings of Adequacy and Capability of Implementation:** SPMC Report - Criterion G.2 at pp. 38-39; Criterion J.9 at pp. 56-58; Criterion J.10.d at pp. 60-62; Criterion J.10.g at pp. 64-65.

**Opponents' Prefiled Testimony:** MAG has prefiled the testimony of Dr. Don A. Dillman and Sharon Moriearty with respect to this contention. The basic thrust of this testimony is to criticize the methodology of the survey which

the Applicants performed to learn who the transportation dependent are. In addition, Ms. Moriearty questions the premise that what has to be learned is only the names of those transportation dependant. She argues that much more is needed. The testimony questions the use of utility billing lists and voter registration lists on the ground that not everyone is on such lists and especially because persons with disabilities are more inclined to not be on such lists for financial reasons. Finally, each of the witnesses by different methodologies comes up with a figure between 2,000 and 2,500 as the number of special needs persons who will need assistance. In addition, MAG witness Daines argues that the card survey method utilized by Applicants is deficient because of the hesitancy of the population with disabilities to self-identify. It is his assertion that there are likely to be many people who should be, but are not, on the list and they will come out in an emergency and there will be no facilities to cope with them.

**Applicants' Prefiled Testimony:** Applicants' testimony with respect to this contention is to be found in Applicants' Rebuttal Testimony No. 6. Therein the survey used to locate the special needs homebound population is described and the Applicants' reasons for believing that it was adequate for the purpose are given. The methodology has been deemed adequate by FEMA. In addition, more recent efforts to update

the information are described including extensive advertising in the media. Further, the point is made that there are procedures for permitting those not reached by the survey to seek help in an actual emergency. It is also pointed out that history demonstrates that persons who have disabilities are usually helped in time of emergency by friends and neighbors.

**Applicable Legal Principles:**

1. Card surveys have been held to be an adequate method for determining special needs populations in this and other NRC proceedings. See Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), Memorandum and Order (Ruling on Summary Disposition Motions of Applicants and State of New Hampshire) (Unpublished) (Nov. 4, 1986) at 16-17; Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-836, 23 NRC 479, 487-88 (1986).

**JI Contention No. 49**

**The Contention:** "The SPMC's provisions for assisting the special needs resident population in taking protective actions are grossly deficient and provide no reasonable assurance that adequate protective measures can and will be taken by this population. The SPMC therefore fails to comply with 10 CFR 50.47(a)(1), 50.47(b)(10), 50.47(c)(1) or NUREG 0654, Rev. 1, Supp. 1, Section J, and FEMA Guidance Memorandum 24 (Radiological Emergency Preparedness for Handicapped Persons).

## Basis

### A. [MAG 51, Basis ¶ 1]

The SPMC's protective action plan is a generic one for all those in the resident population who have handicaps. Once contacted, by phone or (if hearing-impaired) by Route Guide, the individual is asked to verify his or her transportation requirements in the event that an evacuation is recommended. If a PAR to shelter is in effect at the time contact is made, the individual is given some brief, pre-written sheltering instructions. If a PAR to evacuate is in effect at that time, the person is offered transportation assistance, either by waiting outside along pre-designated pick-up routes or by dispatching a wheelchair van or ambulance to the person's home. Following transportation to a reception center, the person is registered and offered temporary shelter in a congregate care facility. This generic plan is inadequate to meet the different needs of different categories of handicapped individuals for each step in the process needed to engage in adequate sheltering or evacuation. Therefore, separate protective action plans need to be developed for each of the main categories of handicapped individuals present in the EPZ in order to provide reasonable assurance that adequate protective measures can and will be taken. See Memorandum 24 (Radiological Emergency Preparedness for Handicapped Persons), which by its terms "supplements and expands upon the existing guidance" in NUREG 0654, which states as a formal "guideline" that "[p]rotective plans have been developed for all categories of handicapped individuals present in the EPZ and integrated into the general radiological emergency plan." Id. D.5 (emphasis supplied).

### B. [MAG 51B]

There is one generic element, however, which does need to be included in each of the protective action plans for individuals with different categories of handicaps: for each handicapped individual who needs assistance with preparing to shelter, sheltering, evacuation preparation, travel processing through a reception center, living in a relocation (congregate care) facility, or recover/re-entry, there needs to be a responsible and knowledgeable contact person to provide communication and physical assistance. Such contact people need to be identified in advance for each individual each activity which requires assistance. The SPMC fails to provide reasonable assistance that such contact people are

available for each assistant-requiring activity. See G.M. 24, pp. 5-6.

C. [MAG 51C]

1. Evacuation. Once they are notified by phone to evacuate, some of those persons who are blind will need assistance with packing necessities, packing provisions for their guide dog, with egress from buildings, and with entering unfamiliar vehicles, reception centers, and congregate care centers. Deaf persons will need someone to communicate with them by writing and/or by signing through the evacuation process. The pre-written generic message these individuals receive does not offer this assistance. Pro. 2.7, p. 15, Attachment 3.

2. If sheltering is ordered, some individuals who are blind will need a responsible contact to make sure windows and ventilators are closed and a wet cloth is being used for respiratory protection. Deaf persons will need a contact person to keep them informed of EBS messages. See G.M. 24 at 7. There is no assurance that Route Guides will be available to perform this function.

D. [MAG 51D]

1. Evacuation. The evacuation needs of the home-bound mobility-impaired population has not been adequately provided for in the SPMC because there are an inadequate number of ambulances and wheelchair vans to transport them in a timely fashion. At the reception centers and the host special facility there appear to be accessibility problems, based on examination of the floor plans provided. Bathroom facilities are seriously deficient at the Reception Centers because there are not enough toilet stalls and they are not wide stalls. Necessary ramps appear to be lacking. The Decontamination Trailers are not accessible to the mobility-impaired.

2. Shelter. The SPMC does not appear to give mobility-impaired persons a choice if they prefer to be sheltered in their own homes or at work rather than undergo the strain of evacuation. See G.M. 24 at 7. Whenever they shelter, those with mobility impairments need a responsible contact to check on closure of windows and ventilators and on respiratory protection. The SPMC does not ensure that such a person will be available. Inadequate provision is made to have KI available for those whose immediate evacuation may be

infeasible or very difficult. See NUREG 06545, Rev. 1 Supp. 1, II.J.10.e.

E. [MAG 51E, Stipulation dated February 7, 1989.]

1. Evacuation. The non-functional and emotionally disturbed will need the assistance of trained staff on a one-to-one or other appropriate ratio. At the Monitoring/Reception Center, a Special area should be set aside for registering, monitoring, and decontamination of the mentally and emotionally disturbed and for their maintenance, where staff can exercise appropriate supervision and control, and can administer medication. G.M. 24 at 8. The SPMC has not made such arrangements. Agreements to receive a specific number of individuals should be made with mental facilities outside the EPZ, to accommodate non-functional severe cases. G.M. 24 at 8. This has not been done. Responsible staff should remain with each mentally or emotionally impaired homebound person throughout the reception and recovery/re-entry phases. G.M. 24 at 8. This, too, has not been provided.

2. Shelter. A responsible contact is needed to perform or supervise the required protective actions. G.M. 24 at 8. The SPMC is deficient in this respect.

F. [TON 3, Basis ¶]

The SPMC (I.P. 2.10, p. 19) identifies five schools within Newbury and five special facilities. The SPMC fails to identify what special transportation requirements those facilities may have or provide any reasonable assurance that such requirements can effectively be met. The SPMC fails to identify reasonable routes of access to and departure from the facilities.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.9 at pp. 56-58; Criterion J.10.d at pp. 60-62; Criterion J.10.g at pp. 64-65.

Opponents' Prefiled Testimony: MAG Witness Moriearty has filed testimony which describes various kinds of disabilities which she feels should be considered in the planning process; asserts that a disproportionate portion of

persons with disabilities are poor; and argues that SPMC is deficient because it concentrates only upon certain disabilities, i.e., those which give rise to a need for transportation and hearing impairment which would prevent a person from hearing warning sirens. MAG witness Sikich, while admitting to no expertise with respect to persons with disabilities nevertheless feels competent to, and does, agree wholeheartedly with Ms. Moriearty's criticisms of the plan and states that more detailed knowledge is needed and provisions must be made for persons with additional disabilities to those already addressed. MAG witness Daines also criticizes SPMC for lack of staff to load the elderly or disabled into vehicles and lack of extra vehicles to handle the overflow not on the list which he claims will surely materialize in a real emergency. He advocates a medically-trained person on every bus utilized to evacuate special needs persons.

**Applicants' Prefiled Testimony:** Applicants address this contention in Applicants' Rebuttal Testimony No. 6. The procedures for implementing protective actions for homebound people with special needs are set out. Any such person requesting assistance will be visited by and assisted by ORO personnel. In addition, extensive reasoning is set forth as to why ORO believes that it can rely upon the concept that

disabled individuals will have available assistance from family and friends.

Applicable Legal Principles: None.

JI Contention No. 50

The Contention: "The SPMC fails to identify all of the special facilities which exist in the EPZ. Even for those facilities which have been identified, there is not reasonable assurance that protective measures can and will be implemented in a timely and effective manner. Thus, the people in special facilities will not be adequately protected in the event of an emergency, and the SPMC, therefore, fails to comply with 10 CFR § 50.47(a)(1), 50.47(b)(3), 50.47(b)(8), 50.47(b)(10) and NUREG 0654, Supp. 1, II.A.3, II.C.4, II.J.10.d, II.J.10.e and II.J.10.g.

Basis

A. [MAG 54A]

Not all the special facilities have been identified or listed in the SPMC. Specifically, not all the nursing homes have been listed. In addition, in the EPZ towns there are other unidentified special facilities in other categories besides nursing homes, homes for the mentally retarded, and elderly housing projects. These categories include community residences for the mentally ill, transition homes for battered women, and local lock-ups.

B. [MAG 54B]

The SPMC neither contains separate emergency response plans for the staff and residents at each of the special facilities nor provides any reasonable assurance that each of these facilities has an adequate facility-specific plan for responding appropriately or in a coordinated or integrated manner with the SPMC in the event of a radiological emergency at Seabrook Station. Without adequate facility-specific

plans for each special facility, there is no reasonable assurance that adequate protective measures can and will be taken for those in special facilities. While Appendix F refers to a "Generic Massachusetts Special Facilities Plan," no generic plan for all special facilities, given their diverse populations, can provide the guidance necessary for each facility to respond appropriately. Moreover, the special facilities have not seen such a plan, and many will not keep it or rely on it even if NHY sends it to them.

C. [MAG 54C]

The only "support and assistance" (see NUREG 0654, Supp. 1, II, J.10.d) provided by NHY's ORO to special facilities when an evacuation has been ordered is transportation assistance in the form of buses, vans and ambulances. For many persons in special facilities this transportation is not sufficient nor usable without further pre-boarding support and assistance from "helpers" in preparing the patients/residents to leave; gathering their clothing, necessary belongings, patient records, and medications; allaying their fears, anxieties and bewilderment; treating those who suffer shock and "transfer trauma"; and simply helping individuals with movement impairments onto the buses, vans, and ambulances. Without adequate emergency response plans for each special facility, there is no assurance that special facility staff can and will perform all these support and assistance functions. The implementing procedures for the drivers does not mention offering this assistance, nor is there any assurance that the drivers have the prior experience or training which would enable them to respond appropriately to a wide range of needs and difficulties which the residents will have in preparing to board and boarding the transport vehicles.

D. [MAG 54D]

The implementing procedures for the special population liaisons are poorly drafted, vague, and confusing. For example, Pro-1.10 § 5.2.1 instructs the Special Population Liaisons upon arrival at the Staging Area to "proceed to your location as shown in Attachment 3, Layout of Staging area, of Implementing Procedure 3.2." The Attachment referred to is the NHY ORO Message Form, not the staging area layout, which is Attachment 5 of Pro-3.2. Moreover, the procedures for the Special Population Liaisons are set forth in two separate Implementing Procedures (1.10 and 2.7) which are neither identical nor sufficiently integrated with each other to ensure that confusion and mistakes will not occur.

G. [MAG 54G]

The Implementing Procedures do not make it clear what the Special Population Coordinator will tell the Liaisons to do when the Coordinator is informed that NHY's ORO has "recommended" a PAR to state or local officials but is awaiting a response. The procedures for Special Population Coordinators and Special Population Liaisons do not differentiate clearly between a PAR which has been recommended by NHY's ORO but is not yet authorized (or rejected) and a PAR being recommended after having been authorized by state/local officials. If the SPMC contemplates sending buses to special facilities upon ORO's mere recommendation of an evacuation PAR to state/local officials, this would create a host of problems, especially if the state/local officials were to decide sometime later when the buses were loading to direct the population to shelter. If the SPMC does not contemplate that buses/ambulances would be sent upon the issuance by ORO of a mere PAR recommendation to state/local officials, it should clearly state this in the Implementing Procedures and eliminate this confusion.

H. [MAG 54H]

The SPMC's reliance on the sixteen bus companies listed in Appendix M, pp. M-4, 5, to provide the drivers, vans and buses listed is unfounded. At least eight of the sixteen companies have either confirmed that they will not participate or that they will offer only the buses, vans and drivers that might be available, if any, at the time of an emergency. Thus, there is no reasonable assurance that a single bus, van or driver will be available from at least eight of the sixteen companies relied upon. The remaining companies do not have sufficient drivers and buses to transport all those persons in special facilities out of the EPZ in a timely fashion.

I. [MAG 54I]

The SPMC significantly underestimates the number of ambulances and wheelchair vans needed. This stems, in part, from a failure to correctly identify the number of those needing more specialized transportation than regular buses can provide. Appendix M, p. M-16, indicates that the SPMC will be relying on 48 buses, 21 ambulances (or 6 evacuation bed buses) and 36 wheelchair vans to transport those in the special facilities identified. To meet the needs of this

special population, a much higher percentage of ambulances and wheelchair vans is needed. Buses, especially school buses but coaches as well, are unsuitable modes of transportation for large numbers of those who are elderly or mentally retarded.

J. [MAG 54J]

The SPMC states that evacuation bed buses "may be substituted for ambulances when patient care levels permit." Appendix M, p. M-16. There are no standards or procedures provided anywhere in the SPMC for having an ORO staffer make this judgment, nor are the Special Population Coordinators and Liaisons qualified to make it. If this judgment is left to the administrator of the special facility by the SPMC, most administrators of nursing homes will not permit the frail elderly or others who may be bedridden to be transported in bed buses, viewing it as too crude a method to ensure the patient's health and well-being. Instead, administrators will insist on evacuating these individuals in ambulances. As a result, the evacuation of special facilities will not be completed in a timely fashion.

K. [MAG 54K]

The plans call for an insufficient number of ambulances to relocate all those in special facilities (non-hospitals) who need to be transported by ambulance in the event of an evacuation. In Appendix M, p. M-16, the SPMC calls for 21 ambulances to meet this need. Significantly more ambulances will be needed for this population.

L. [MAG 54L]

The SPMC's reliance for a prompt response on the nine (9) ambulance companies listed in Appendix M, pp. M-138, 139, is unfounded. Six (6) of the companies cannot be relied upon at the time of an emergency to provide all or some of the ambulances indicated. In many instances this stems from an intent by company owners to honor existing prior commitments first before responding to a Seabrook evacuation. For some companies, no drivers have agreed to participate. One company has dropped out altogether, and another is out-of-business. Also, when it was enlisting the companies' participation, NHY appears to have: (1) stressed that it was extremely unlikely that the company would ever be called on to perform, and (2) glossed over the potential hazards the job entails, failing in some cases even to inform the owner that ambulances might be traveling into areas which were in

or had been in the path of a radiation plume. There is no reasonable assurance that, in the event of an emergency, the ORO will be able to produce sufficient responding ambulances to evacuate those in special facilities in a timely fashion.

M. [MAG 54M]

The SPMC's provisions offer no reasonable assurance that sheltering can or will be implemented appropriately or in a timely fashion in the special facilities. The SPMC contains procedures for having the Special Population Liaisons call the special facilities and read a prescribed "Special Population Protective Action Message." Pro-2.7, p. 14, Attachment 3. If sheltering is recommended the Liaison is to call and say: "Sheltering is the recommended action for your area at this time. Please implement your facility's sheltering procedures. Please take the following actions:

1. Close all doors, windows, and vents.
2. Turn off all fans, heating, and air-conditioning which use air drawn from outside.
3. Extinguish unnecessary combustion.
4. Use telephones for emergencies only.
5. Remain indoors until advised otherwise. Move to the basement or the room with fewest windows.
6. Keep radio or TV on for Emergency Broadcast System information.

Numerous problems exist with such a message. It assumes without any basis for doing so that the facility has its own sheltering procedures. For those facilities lucky enough to have such procedures, the message is contradictory and confusing: the facility is to implement its own procedures and "take the following actions." Some of these actions ("Move to the basement or the room with the fewest windows") may well be inconsistent with the facility's own plans. The message is also too rigid to encourage facility staff to use the appropriate judgment necessary about such critical matters as turning off all fans, heating, and air conditioning in light of the needs of the frail elderly and handicapped population to be protected. For those facilities which have no sheltering plans, the message simply affords inadequate guidance on how to implement a timely, safe, and effective sheltering response. No specific TV or radio stations are mentioned for receiving EBS information.

N. [MAG 54N, Stipulation dated February 7, 1989.]

The SPMC contains inadequate provisions for the distribution of dosimetry to those in special facilities whose immediate evacuation may be infeasible or very difficult. See Plan, p. 3.6-6. Special population liaisons are to provide "information" about dosimetry, Pro-2.7, § 5.5.4, but there is no assurance as to what this information will be or that the liaisons are knowledgeable enough to present the information adequately.

O. [SAPL 7, Basis ¶ 1]

There are no plans of any description and no specifically designated host facilities for the hospitals, nursing homes, day care centers, schools or other special facilities listed in Appendix M of the plan, though there is now reference to "generic" plans for these facilities in Amendment 3 to Appendix F. Appendix M's Index identifies Shriner's Auditorium as the sole listing under "Host School Facilities" and under "Host Special Facilities." The description of the facility in the letter of agreement is that it consists of an auditorium and wings totalling approximately 125,000 sq. ft. This does not assure an adequate facility for receipt of special facility residents or clients. Further, Shriner's Auditorium is used for circuses, rodeos and the like and may not be available should such an event be in progress at the time of an emergency. The Hunt Hospital is to take some nursing home residents, though there is no specification of the number that can be taken. The same is true of the letters of agreements with St. John's and St. Joseph's hospitals regarding the number of hospital patients that can be received and cared for. There is therefore no reasonable assurance of adequate host facility services being provided under the SPMC.

P. [SAPL 7, Basis ¶ 2]

Furthermore, there are no teachers or health care facility workers designated in the SPMC to provide services such as supervising children and assisting the elderly and infirm to board evacuation vehicles. Neither are there any NHY-ORO personnel designated to provide such services. Therefore, there is no reasonable assurance of adequate personnel to carry out the protective action responses for special facilities.

R. [TON 10, Basis ¶]

The SPMC (Appendix J, p. i) identifies day care/nursery schools in each municipality within the EPZ but omits from that listing the operating day care facilities in the Town of Newbury. The SPMC fails to identify the locations of such facilities, the number of infants and other children enrolled, the number of staff personnel or how any special transportation requirements of the facilities will be met.

S. [TOA 4D.2]

There is no plan in the SPMC as to how the PARs will be implemented.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.9 at pp.56-58; Criterion J.10.d at pp. 60-62; Criterion J.10.g at pp. 64-65.

Opponents' Prefiled Testimony: TOA has prefiled the testimony of Chief O'Connor who states that certain facilities are not included in SPMC that should be. MAG has prefiled a piece of testimony directed to Basis J concerning the possible use of bed buses. This testimony is given by St. Hilaire et al., a group of Massachusetts officials from the Massachusetts Registry of Motor Vehicles and the Massachusetts Department of Public Health. The testimony makes the following allegations: The bed buses are ambulances, need department of public health approval and they would not be granted such approval because they lack required equipment and are not staffed by EMTs. It is stated that if registration were sought of the vehicles as ambulances one of the witnesses would not allow it as general

counsel for the registry without a certificate from the Department of Health. The lawyer for the Department of Health states that there is a need for a vehicle to be certified as an ambulance and the operator must be certified as an ambulance operator. He states that the bed buses and ORO cannot be so certified. Finally there is testimony as to Level I and Level II care and the fact that they are distinguished only by source of reimbursement.

**Applicants' Prefiled Testimony:** Applicants address most of this contention in Applicants' Rebuttal Testimony No. 6. Basically, the TOA assertions are addressed by pointing out that the facilities named are either out of business, included, or never did exist. In addition, all of the other cases alleged in contentions or answers to interrogatories are addressed. As to the bed bus issue, Applicants will register them as buses, and rely, if necessary, on the Governor's right to suspend laws in an emergency and the realism doctrine if the General Counsel of the Registry seeks to impound or otherwise interfere with the operation of the bed buses in a real emergency.

**Applicable Legal Principles:**

1. A state government is assumed to take all steps necessary to protect its citizens in an emergency.
2. Under the Civil Defense Act, the Governor of The

Commonwealth may suspend any and all laws during a state of emergency.

#### H. EVACUATION EQUIPMENT AND FACILITIES

##### JI Contention No. 51

The Contention: "The SPMC proposes that individuals who have been evacuated from special facilities will be relocated to a single "host special facility". This special host facility contains a large auditorium, an arena, and miscellaneous space on two floors. The SPMC's plans for use of this facility do not provide reasonable assurance that it will be available in a timely fashion in the event of an emergency or that, even if available, it will be adequate for use as a special needs congregate care center, or that the care available will be adequate for the number and kind of special needs individuals to be sent there. The SPMC therefore fails to comply with 10 CFR 50.47(a)(1), 50.47(b)(3), 50.47(b)(8), 50.47(b)(10), and NUREG 0654, Supp. 1, II A.3, II C.4, II J.10.d., and II J.10.g.

#### Basis

##### A. [MAG 55A]

This facility is frequently used for a variety of special events including a circus, a rodeo, and a wide variety of "shows". There is no reasonable assurance that during such an event the facility can be converted in a timely fashion into a facility capable of meeting the relocation needs of nursing home residents, the mentally retarded, those in other special facilities, and the transport dependent population.

B. [MAG 55B]

In Appendix M, p. M-18, the facility is noted as showing a capacity to handle 2,000 special facility and mobility impaired individuals. Given that the second floor of the facility is not serviced by an elevator, that much of the first floor will be serving simultaneously as the sole host school facility for over 9,000 school aged children, that parts of the first floor would be unsuitable as relocation space for those who are less than completely ambulatory, and that a large number of staff must also be present to assist and care for these special needs individuals, the maximum feasible number of special facility and mobility-impaired individuals who can be adequately cared for overnight in this facility is significantly less than 2,000. At the same time, the total number of special facility and mobility-impaired individuals who reasonably may need a place of relocation significantly exceeds 2,000, there are a number of special facilities in the EPZ which have not been identified in the SPMC, and the size of the mobility-impaired population has also been significantly underestimated. Furthermore, the plan assumes that only 80% of those individuals who are in special facilities or who are mobility-impaired will require overnight shelter. Appendix M, p. M-16. No basis is presented to support this assumption, and it is imprudent. In the event of an evacuation from the six Massachusetts communities, when all the nursing homes, elderly housing projects, group homes for the mentally retarded, etc. are evacuated and transported to this host special facility, there are no public announcements, as there are for schools, instructing family members to pick up the residents of these special facilities at the host facility. The SPMC therefore ought to provide the means to shelter, feed, and appropriately care for all these individuals, not 80% of them. This number alone, when all special facilities are counted, exceeds 2,000 individuals. To this number should be added the mobility-impaired individuals who have been either bused out of the EPZ or who have engaged in ride-sharing to evacuate but have no place to stay. A prudent estimate would be that at least 2,500 special needs individuals would need care at this special host facility. Add to this the space needed to accommodate adequate staff and care-providers for this population and there is a need to accommodate at least 2,750 persons on a 24-hour basis at the host special facility, far more than the "capacity" of the space available.

C. [MAG 55C]

There is no reasonable assurance that there will be sufficient, or indeed any, beds, blankets, food, or basic care available at the host special facility. The SPMC relies on the American Red Cross to establish and operate all congregate care centers, see Plan, § 2.4.2A. While the SPMC contains a mechanism to request a Red Cross response, Pro-1.6, there is no reasonable assurance that if contacted the Red Cross can respond in time with sufficient staff and resources to turn this facility, possibly then housing a circus, rodeo, or other "show", into a special needs congregate care facility by the time evacuees arrive. Because it is the policy of the American Red Cross to engage in planning for nuclear power plant disasters only in concert with governmental planning efforts, the American Red Cross has undertaken no planning for its response in Massachusetts to a disaster at Seabrook Station. Thus, in the event of an emergency, the Red Cross can only respond on an ad hoc basis to provide emergency relief services in Massachusetts. In a recent letter to NHY, a senior official of the American Red Cross commented on the lack of state and local participation in the planning process in Massachusetts by stating:

There should be no doubt that without close coordination of Red Cross and government activities within the framework of tested disaster response plan, Red Cross relief efforts will be negatively affected.

The plan identifies 27 other congregate care centers for those without special needs, see Appendix M, pp. M-9 through M-12. Given responsibility for all these congregate care centers at once, there is no reasonable assurance that the Red Cross can and will respond in a timely manner, or at all, to provide the beds, blankets, food, or any other assistance needed at this special host facility.

D. [MAG 55D]

There is no reasonable assurance that the thousands of special needs individuals who will end up at the host special facility will be provided with the minimal level of medical care, special diets, and special personal attention (bathing, dressing, etc.) that they need to ensure their health and well being. There is no provision in the SPMC regarding who is to provide this special care. There is no assurance that

nursing home owners will send sufficient staff to the host special facility to provide the special care needed by the infirm and frail elderly or those on special diets or medications, nor is there any provision which assures that the mentally retarded will be safely and appropriately cared for. The American Red Cross does not provide "special" care of this kind even when they are participating in planning for nuclear power plant disasters. Thus, there can be no presumption that they will do so on an ad hoc basis here. The SPMC is inferior to other plans which provide that those in nursing homes and other special facilities are relocated to other nursing homes and special facilities of the same kind where staff are trained and equipped to provide the kind of special care these evacuees would need.

E. [MAG 55E]

Owners, operators, administrators, and staff of the special facilities have no assurance that the residents of their facilities can and will be adequately cared for at the special host facility upon relocation. They have not even been told the name of the special host facility to which their residents would be transported. If, at the time of an emergency, they are told that their residents are to be transported to this site, most responsible owners, operators, administrators, and staff will resist, viewing the facility itself to be patently inadequate. For those who inquire what the plans are for caring for their residents at the facility upon relocation, those plans, if described accurately, will be viewed to be patently inadequate. Thus, regardless of the participation of state and local officials, most of those who operate and staff the special facilities will not permit those in their care to be relocated to this host facility. Instead, operators and staff will respond in an ad hoc fashion.

F. [MAG 55H]

The American Red Cross has not certified that this facility meets the criteria established by the ARC for mass care shelters to be used for evacuees from a nuclear power plant disaster. Absent certification by the American Red Cross, there is no reasonable assurance that the ARC will in fact establish this shelter during an emergency.

G. [MAG 55I]

The facility does not meet the American Red Cross criteria for shelters for nuclear power plant disasters.

H. [MAG 55J]

Regardless whether the facility meets the ARC generic shelter standards, the facility itself is not suitable for use as a host special facility for the population intended.

I. [MAG 55K]

Use of this facility as a shelter for the elderly in nursing homes and elderly housing projects will be hazardous to the health and well-being of these individuals because it will substantially exacerbate the effects of the "transfer trauma" they will already be experiencing from the evacuation experience itself.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion J.10.h at pp. 65-66.

Opponents' Prefiled Testimony: MAG witness Sikich criticizes the Shriner's Auditorium as a host center for the disabled because: the American Red Cross (ARC) will provide only minimum care and no medical care or staff to take care of the disabled who arrive there; in such a case, Mr. Sikich believes there could be trouble. He also says that the Shriner's Auditorium is only partially handicapped accessible.

Applicants' Prefiled Testimony: This contention is addressed in Applicants' Rebuttal Testimony No. 6. Therein, the capacity of the Shriner's Auditorium is described; it is revealed that it can accommodate 1,484 persons and Applicants have committed to make it fully handicapped accessible. In addition, Applicants have available a center in Westboro,

Massachusetts, owned by New England Power Co. which can house 2,233 people.

Holy Cross College in Worcester is identified as the School Host Facility with capacity for the entire Massachusetts EPZ school population and accompanying staff.

**Applicable Legal Principles:** None.

**JI Contention No. 52**

This contention has been withdrawn by stipulation.

**JI Contention No. 53**

**The Contention:**

"The facility identified as a staging area located in Haverhill at 145-185 Water Street is not now available to the ORO for this purpose and no other facility has been identified. The City of Haverhill on February 26, 1988 issued a Cease and Desist Order as to all uses of the premises as a Staging Area based on violations of the City of Haverhill Zoning Code, § 255.13. In April, 1988, the Superior Court of the Commonwealth entered a temporary restraining order prohibiting any further use of these premises for the purpose. In light of the function and role of the Staging Area in the SPMC, the absence of any identified lawful location for such a facility makes the effective implementation of the SPMC impossible and the SPMC fails to meet the standards set forth at 50.47 (b)(3), (8), (10) and NUREG 0654 II J.10.g, k and H.4.

Basis

A. [SAPL 2, Basis ¶]

The SPMC states that the NHY Offsite Response Staging Area is located at 145 Water Street in Haverhill, Massachusetts (see 5.2.2.). The city of Haverhill issued a cease and desist order to Public Service Company of New Hampshire and Mass Electric on February 26, 1988 to prevent the use of the facility for an emergency drill. The Assistant City Solicitor for the City of Haverhill stated that a restraining order was obtained from Superior Court to stop a subsequent drill that was to go forward on March 31, 1988. That drill was called off. The City of Haverhill has no intention of allowing that area to be used as a staging area for implementation of the SPMC.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion H.4 at pp. 44-45.

Opponents' Prefiled Testimony: No direct testimony has been prefiled. MAG states that he will make his case on cross-examination.<sup>30</sup>

Applicants' Prefiled Testimony: None.

Applicable Legal Principles: None.

JI Contention No. 54

The Contention: "The SPMC relies upon the American Red Cross to establish and operate all 27 congregate care centers and the host special facility, yet it does not contain any kind of written agreement with the American Red Cross which identifies the emergency measures to be provided in Massachusetts and the mutually acceptable criteria for their implementation.

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<sup>30</sup> MAG Trial Brief at 54.

"Because it is the policy of the American Red Cross to engage in planning for nuclear power plant disasters only in concert with governmental planning efforts, the American Red Cross has undertaken no planning for its response in Massachusetts to a disaster at Seabrook Station. It has therefore not entered into any agreement of any kind with NHY or the Joint Owners to provide any services. In the event of an emergency at Seabrook Station, the American Red Cross response would be at best ad hoc. Such a response does not provide reasonable assurance that any of the congregate care centers or the host special facility will be operated by the American Red Cross or that, if the Red Cross does act to establish mass care centers in Massachusetts, it can be done in a timely fashion. The SPMC therefore fails to comply with 10 CFR 50.47(a)(1), 50.47(b)(1), 50.47(b)(3), 50.47(b)(8), 50.47(c)(1) and NUREG 0654, Rev. 1, Supp. 1, II.A.3, II.C.5, and II.H.4."

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.1.a at pp. 5-6.

Opponents' Prefiled Testimony: MAG has prefiled the hearsay testimony of Arthur Lonergan, who did a survey of all designated congregate care centers to see what plans, if any, the personnel there had for clearing the necessary space. He states that only nine of twenty-five facilities had such a plan. Based upon this testimony the ubiquitous Mr. Sikich opines that in his opinion the lack of such plans is a

serious flaw. Nothing is offered by MAG to back up the contention that the ARC response in an emergency would be "ad hoc."

**Applicants' Prefiled Testimony:** In Applicants' Rebuttal Testimony No. 6, the role of ARC is detailed, and the commitment spelled out.

**Applicable Legal Principles:** ARC's Congressional Charter mandates its participation and assistance in a radiological emergency at Seabrook.

#### JI Contention No. 55

**The Contention:** "The SPMC fails to provide reasonable assurance that an adequate number of buses, ambulances, wheelchair vans, vans, tow trucks, drivers and road crews can and will respond in a timely fashion. Therefore, the SPMC violates 10 CFR 50.47(a)(1), 50.47(b)(1), 50.47(b)(3), 50.47(b)(10), 50.47(c)(1) and NUREG 0654, Rev. 1, Supp. 1, II.A.3., II.C.4., II.C.5. and II.J.10.

#### Basis

##### A. [MAG 71A]

The SPMC's reliance on the 16 bus companies listed in Appendix M, pp. 4, 5, to provide the drivers and buses listed is unfounded. At least eight of the 16 companies have either confirmed that they will not participate or that they will offer only the buses, vans and drivers that might be available, if any, at the time of the emergency. Thus, there is no reasonable assurance that a single bus, van, or driver will be available from at least eight of the 16 companies relied upon. The remaining companies do not have sufficient drivers, buses and vans to evacuate the transport-dependent/mobility-impaired population and all those in

hospitals, special facilities, and schools, and daycare/nurseries who need bus/van transportation. This number is larger than the SPMC estimates.

B. [MAG 71B]

The SPMC provides no reasonable assurances that the buses and drivers which will be participating can be mobilized quickly enough to ensure a timely response. First, many of the companies are located at substantial distances from the EPZ. Second, the SPMC's procedures in Pro. 2.10 for notifying bus companies, determining the availability of buses and drivers, assigning particular buses to particular bus needs, assigning Bus Dispatchers, Route Guides, and Dosimetry Record keepers, and sending these ORO staffers off to the assigned bus yards is designed for a slow-breaking radiological emergency. These procedures are too cumbersome and time-consuming to ensure a timely response in a fast-breaking accident. Third, by dispatching Bus dispatchers, Dosimetry Record keepers, and Route Guides to bus yards to assemble and brief the drivers, to distribute dosimetry and Bus Driver Packets, and to lead back in convoy-style the company's full contingent of responding buses, see Plan, § 3.6.1(B), the SPMC ensures that each company can respond only as fast as either its last responding bus driver or the ORO bus yard team, whomever arrives at the bus yard last. This is an extremely inefficient, "weak-link" system. Moreover, convoys of buses always travel more slowly than individual buses do, and convoys will have a much more difficult time traveling into the EPZ against evacuating traffic than single buses would.

C. [MAG 72A]

The SPMC relies on nine (9) private ambulance companies to provide all the ambulances and wheelchair vans needed to evacuate all those who reasonably may need to be transported by such vehicles during a radiological emergency. This includes all persons in the two EPZ hospitals, the special facilities, and the mobility-impaired transport dependent population who need such vehicles in order to evacuate and relocate. Also needing ambulances will be those who are injured during the emergency by radiation. Of these nine companies, indicates that one is out of business and a second has dropped out after finding that its drivers would not agree to participate. One company which had agreed in a letter of agreement to provide four ambulances can provide reasonable assurance of providing only two in an emergency. Another which had a letter of agreement to provide three

ambulances entered into a contract to provide only two. One company actually believes it could provide 22 ambulances and 12 wheelchair vans, but these vehicles are based all over the state and the company has received no assurances yet from its drivers; so there is no reasonable assurance that it can and will provide any vehicles/drivers in an emergency in a timely fashion. Another company with a letter of agreement to provide ten ambulances, five wheelchair vans, and two critical care units claims to have only 9 vehicles, not 17, and has agreed to make these available only on an "as available" basis if its drivers will participate, which it thinks is unlikely. The remaining three companies have agreed to provide a total of six ambulances/driver teams and three ambulettes/driver teams, but the ambulettes are not licensed in Massachusetts and cannot be used there.

D. [MAG 72B]

In seeking to enlist the participation of these ambulance companies and their drivers, NHY led at least some of the companies and drivers to believe that they would not be driving into areas close to Seabrook Station which were radiologically contaminated. This was done through a combination of active misrepresentation and critical omission of facts regarding what kinds of individuals might need ambulance services and where they would be located. Thus, there is no reasonable assurance that even those ambulances/driver teams that do respond during an emergency will drive into radiologically contaminated areas or handle radiologically contaminated individuals. To the extent that contracts can be construed to require such services, these contracts were obtained using unfair or deceptive trade practices in violation of M.G.L. c. 93A, § 2, and are unenforceable.

E. [MAG 73A]

The NHY ORO does not rely on an adequate number of tow trucks to enable all potential road obstructions to be removed in a timely fashion. In Appendix M, p. M-3, there are only four road crew (tow) companies listed. For these companies, Appendix M lists a total inventory of 31 tow vehicles. Even if all these vehicles could respond, there would not be sufficient tow vehicles to remove all the road impediments in a timely fashion that can reasonably be expected during an evacuation of the entire EPZ in Massachusetts. Many more tow trucks are needed.

F. [MAG 73B]

The SPMC's reliance on the four road crew companies listed in Appendix M is unfounded. Two of the companies have dropped out of ORO altogether and will not respond in an emergency. A third company will not renew its agreement to participate after the first year, and even now cannot provide reasonable assurance that its drivers will show up in the event of a radiological emergency. The final company (two tow trucks) can give no reasonable assurance that it would respond and feels that it is under no contractual obligation to do so.

G. [MAG 73C]

Even assuming that tow trucks are available to respond, the SPMC deploys only two tow trucks per town, assigning them both to the "transfer point." ( Pro. 2.10, § 5.4.7(B). Thus, at most, a total of only 12 tow vehicles will be deployed throughout the six Massachusetts communities. This is far short of the number needed to clear the evacuation routes of all reasonably anticipated blockages in a timely fashion.

H. [SAPL 11, Basis ¶]

The numbers of buses set out in Amendment 3 of the SPMC for special facilities for the 6 Massachusetts communities have been drastically reduced with no apparent reason, rationale or compensating measures provided to explain these plan changes. (See Appendix M, p. M-16) For Amesbury special facilities, for example, buses were reduced from 13 down to 1 and wheel chair vans were reduced from 9 down to 1. As another example, Newburyport's special facility buses were reduced from 25 down to 2 and the wheel chair vans were reduced from 18 down to 1. Absent a reasonable number of emergency vehicles for the special facilities for these and the other Massachusetts EPZ communities, there is no reasonable assurance that residents of special facilities can be protected. The vehicle numbers are set forth in SPMC Amendment 4 are not all reasonable given the numbers of special facility residents in those communities.

I. [TOA 1B]

Even assuming these Letters of Agreement, on their face, purported to create a binding commitment to provide emergency resources, the SPMC fails to demonstrate that those

individuals deemed "available" to perform emergency services have in fact been asked, and agreed, to provide these services in an actual emergency, or that these individuals, many employed far from the EPZ, could promptly be located, notified, and deployed to respond to a nuclear accident. Traffic accidents or additional delay will occur as emergency personnel, business operators, or commuters returning for family members, must maneuver through outgoing evacuation traffic, or queue at the perimeter of the EPZ, awaiting identification checks. SPMC Plan, p. 3.6-14.

J. [TOA 4A]

Following declaration of an emergency, the SPMC provides that bus companies should be contacted to "determine the number of drivers and vehicles (buses and vans, if applicable) which would be available and their mobilization times . . . bus company managers will call back with the number of vehicles and drivers which can be provided . . ." PROCEDURES 2.10, p. 5. This underscores two significant inadequacies in the SPMC:

(1) On its face, the SPMC indicates that each Letter of Agreement does not accurately state the number of manned vehicles which a particular company can provide in an actual emergency, and that this determination will only be made at the time of an actual emergency.

(2) Substantial delay in deploying emergency transportation will occur as each bus company attempts to determine its availability of manned vehicles. For the SPMC indicates that bus companies will be assigned to a particular need only after each bus company has assessed its available resources, informed NHY, and the total resource pool is known. See, PROCEDURES 2.10, p. 5 (B) and (F).

K. [TOA 4H]

There is no reasonable assurance that the bus drivers who purportedly have agreed to respond to an emergency at Seabrook in fact have sufficient experience or training to perform this function. Under the SPMC, bus drivers of emergency vehicles are not required to have any prior experience in emergency operations, no prior experience with special needs populations, and no prior experience busing small children, including school children. SPMC Plan, pp. 2.1-29, 30. Additionally, even assuming these individuals have adequate training and experience, the SPMC fails to demonstrate that the individual bus drivers, or other private

citizens with apparent emergency roles such as teachers and health care staff, have in fact agreed to be available to drive in an actual emergency.

L. [TON 2a]

The SPMC provides that nine buses will be available to evacuate Newbury residents and transients. The SPMC fails to provide any empirical data to support the conclusion that this number of buses is sufficient to provide adequate evacuation of transportation dependent persons.

M. [TOWN 9.1]

The plan provides for tow trucks to be located at a staging area somewhere in Groveland. The plan does not specify the number of tow trucks or provide any basis for a finding that the number will be adequate to respond to disabled vehicles. Nor is there any reasonable assurance that the trucks would be able to effectively reach disabled vehicles in West Newbury in a timely manner since they would be entering West Newbury against the flow of outgoing evacuating traffic.

N. [TOWN 9.3]

The plan fails to provide an adequate basis for a finding that the number of ambulances and other emergency vehicles for the transportation of persons with special needs, or personnel to man those vehicles, are sufficient to reasonably assure the safety of persons in West Newbury requiring such transportation. Nor does the plan provide an adequate basis for a finding that such vehicles would be able to reach persons in West Newbury requiring such assistance in a timely manner.

**References to FEMA Findings of Adequacy and Capability of Implementation:** SPMC Report - Criterion C.4 at pp. 17-18; Criterion J.10.d at pp. 60-62; Criterion J.10.g at pp. 64-65; Criterion J.10.k at p. 67.

**Opponents' Prefiled Testimony:** As to this contention, MAG presents a piece of hearsay testimony by Ms. Mangan and Mr. Paolillo which is a survey of all the vehicle supplying

companies involved. The claim is that there are in reality far fewer vehicles available (at least at certain times) than are necessary.

**Applicants' Prefiled Testimony:** Applicants address this contention in Applicants' Rebuttal Testimony No. 8. This testimony shows that there are sufficient vehicles under LOA, and available, for execution of SPMC.

**Applicable Legal Principles:** None.

#### JI Contention No. 56

**The Contention:** "The SPMC fails to provide reasonable assurance that adequate procedures, personnel, equipment and facilities for radiological monitoring and decontamination of general public evacuees, emergency workers and special facility evacuees (e.g. nursing home residents) have been established. Therefore, the requirements of 10 CFR §50.47(a)(1), §50.47(b)(8), §50.47(b)(10), §50.47(b)(11) and NUREG - 0654, Rev. 1, Supp. 1 II.H.4, II.J.10.d, II.J.12, II, K.5.a and K.5.b. have not been met.

#### Basis

##### A. [SAPL 3, Basis ¶]

The SPMC fails to provide even a reasonably complete description of the facilities, personnel and equipment for monitoring and decontaminating general public evacuees, emergency workers and special facility evacuees. Mention is made of two dedicated Monitoring Trailers for general public evacuees which are to be positioned at or dispatched to Reception Centers in North Andover and in Beverly, Massachusetts. The plan does not describe how the trailers will be dispatched to those areas and from where they would be dispatched should that be necessary. Though a diagram is

provided, the plan does not describe the total size of the trailers, so it is impossible to get a true picture of the practicability of monitoring a claimed 8,300 evacuees within a 12-hour period at each trailer. There are 14 monitoring stations in each trailer. That would work out approximately 1.2 minutes to get each evacuee passed through a monitoring station, which is not possible in the real world. It is not clear in Appendix I that there are a sufficient quantity of survey meters available.

B. [SAPL 3, Basis, ¶ 2]

The plan for monitoring and decontamination of emergency workers suffers the same deficiencies in regard to questions about the size of the facility and the availability of survey meters. Furthermore, the EWF trailer is supposed to be located at the state staging area in Haverhill, Mass. which is not going to be available for use (see Contention 2). Therefore, there are no suitable facilities and no location for emergency worker decontamination identified in the plans.

C. [SAPL 3, Basis ¶ 3]

Finally, there is no specific provision in the letters of agreement with receiving hospitals (Hunt Hospital, St. John's Hospital, St. Joseph's Hospital) for the monitoring and decontamination of special facility populations from nursing homes, hospitals and other facilities or for monitoring and decontaminating special needs residents who are evacuated from out in the communities. It is likely that many of these individuals could not be handled in the trailers at the reception centers. There are no letters (sic) of agreement of any description in the SPMC for Lawrence General Hospital, Lowell General Hospital, Framingham Union Hospital or Newton-Wellesley Hospital and the LOA's with New England Deaconess Hospital and Brigham and Women's Hospital make no explicit mention of receiving and treating special facility evacuees.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion H.4 at pp. 44-45; Criterion H.7 at p. 46; Criterion H.10 at pp. 46-47; Criterion J.12 at pp. 72-74.

Opponents' Prefiled Testimony: None as to Basis C. As to Bases A and B, MAG has filed the testimony of Carol Sneider, Esq. who observed the monitoring at a reception center during the graded exercise. She makes the following observations: she did not think the monitoring test was fair because only seven stations were used instead of fourteen; the trailer is cramped and if there were fourteen in use it would have been too crowded to keep the pace that was kept in her opinion. She states that the simulated evacuees were very compliant; there were no children or other potentially difficult cases. She notes that the simulated radioactive source was known by the monitors to have to be in the pocket of the individuals being monitored and therefor the monitors did not have to be careful; in addition, there were no suitcases and no breaks during the 20 minute drills. She notes that the monitors did not monitor themselves, and there was no wiping down of the monitoring area when contamination was found. She states that the exercise of monitoring was too short and therefore there was no fatigue factor. She also gives her "expert" opinion as an observer (as opposed to a lawyer) that one cannot judge a monitoring rate by how fast people execute the process under the conditions used in the graded exercise. She argues that FEMA has a 90 second standard which must be used. She also points out that the rate of emergency worker monitoring during the exercise was 1

every 79 seconds. Finally she does a computation by which she comes up with a 73 second per person rate. Finally, she worries about 10 minute breaks and thereafter does an overall calculation by which she shows that ORO is short of monitoring capacity under the 20% rule.

**Applicants' Prefiled Testimony:** Basis C of this contention is addressed in Applicants' Rebuttal Testimony No. 6. The assertions in that basis are directly refuted. The monitoring issues are addressed in detail in Applicants' Rebuttal Testimony No. 17 which contains a thorough discussion of the facilities and equipment and the monitoring process.

**Applicable Legal Principles:** None.

#### JI Contention No. 57

**The Contention:** "The SPMC fails to provide adequate means for the handling and disposal of contaminated waste water and contaminated materials, contrary to the requirements of 10 CFR §50.47(a)(1), §50.47(b)(9) §50.47(b)(11) and NUREG - 0654 II.I.8. and k.5.b.

#### Basis

##### A. [SAPL 4, Basis ¶ 1]

Implementing Procedure 2.9 states at 5.2.10 that a storage area outside the trailer for monitoring and decontamination is to be identified for contaminated articles belonging to evacuees and one person is to be designated to guard the articles. The waste is supposed to be double bagged, labeled and set aside in this area. (1P 2.9 at

5.8.4) Adequate personnel to perform this task are not designated. What then happens to the waste material is not described. A radwaste disposal letter of agreement with Chem Nuclear, provided in Appendix C, was only a 2 year contract which began on July 1, 1986 and will expire in July of this year. No other waste disposal agreements exist in the SPMC. Therefore, there are no adequate procedures and personnel yet identified for handling waste materials.

B. [SAPL 4, Basis ¶ 2]

The trailers used for decontamination at the reception centers and EWF trailer each only have 1200 gallon collection tanks for contaminated waste water. The average 10-minute shower uses 3-5 gallons per minute and results in 30-50 gallons of waste water. Therefore, the impoundment capability of the storage tanks will only be good for approximately 40 showers at best. Unless procedures are made for pumping out or replacing storage tanks and (sic) adequate personnel are assigned to those duties, contaminated water will be released to the environment whether it is diluted to acceptable levels or not.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion C.4 at pp. 17-18; Criterion K.5.b at pp. 78-79.

Opponents' Prefiled Testimony: None

Applicants' Prefiled Testimony: *Applicants have indicated an intention not to offer their prefiled direct testimony on this contention and to rely, instead, upon the rebuttable presumption on the basis of the record to date.* This contention was fully addressed in Applicants' Rebuttal Testimony No. 13.

Applicable Legal Principles: None.

JI Contention No. 58

The Contention: "The SPMC fails to demonstrate that each principal response organization has staff to respond and to augment its initial response on a continuous basis, fails to provide for an adequate number of available manned emergency vehicles, in violation of 10 CFR § 50.47(a)(1), 50.47(b)(1), 50.47(b)(3), 50.47(b)(6), 50.45(b)(8), NUREG-0654-FEMA-REP-1, REV. 1 (hereinafter "NUREG-0654") II.A.1.e, II.A.3, II.A.4, II.C.4, and II.F.1.a. Contrary to Applicants' assertions of "formalized agreements" demonstrating a commitment to provide certain emergency response resources, see SPMC Plan, p. 1.1-2, many Letters of Agreement (LOAs) with service providers are specifically identified only as a "proposed contract," rather than a binding agreement. Additional Letters of Agreement are due to expire, by their express terms, on or before September 1, 1988, or even before completion of litigation on the SPMC before the Licensing Board. There is no reasonable assurance that the Letters of Agreement proffered by New Hampshire Yankee (NHY) represent binding commitments by the purported service providers or that the personnel relied upon in the SPMC will in fact be available in the event of an actual emergency at Seabrook Station.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion A.4 at pp. 13, Criterion C.4 at pp. 18-19; Criterion D.4 at pp.20-21.

**Opponents' Prefiled Testimony:** As to this contention, MAG presents a piece of hearsay testimony by Ms. Mangan and Mr. Paolillo which is a survey of all the vehicle supplying companies involved. The claim is that there are in reality far fewer vehicles available (at least at certain times) than are necessary to execute SPMC.

**Applicants' Prefiled Testimony:** Applicants address this contention in Applicants' Rebuttal Testimony No. 8. This testimony shows that there are sufficient vehicles under LOA and available for execution of SPMC.

**Applicable Legal Principles:** None.

#### JI Contention No. 59

This contention has been dismissed by order of the Board.

#### JI Contention No. 60

**The Contention:** "The SPMC fails to adequately identify the emergency equipment available for use in implementing the plan. The SPMC thus fails to provide a reasonable assurance that adequate equipment is provided and maintained as required by NUREG-0654, Rev. 1, Supp. 1, II.H. The SPMC fails to identify the equipment available for use in discouraging or encouraging direction of traffic flows. The number and location of cones, barricades and other control devices are not adequately set forth in the SPMC. Their availability for timely use is not described. This contention is confined to the towns

of Newbury, Newbury Port, Salisbury  
and West Newbury.

**Basis**

A. [TON 2b]

The SPMC fails to identify the equipment available for use in discouraging or encouraging direction of traffic flows. The number and location of cones, barricades and other control devices are not adequately set forth in the SPMC. Their availability for timely use is not described. In the event that devices are to be brought into Newbury, this will be difficult or impossible if an emergency is rapidly developing and evacuation has commenced without traffic controls in place. Thereafter, gaining timely access to control points will be unlikely.

References to FEMA Findings of Adequacy and Capability of Implementation: SPMC Report - Criterion H.11 at p. 47; Criterion J.10.k at p. 67.

Opponents' Prefiled Testimony: None as such. CON claims that its testimony described under JI 4 above supports this contention.<sup>31</sup>

Applicants' Prefiled Testimony: Applicants' justification for the traffic control equipment it has selected is set out in Applicants' Rebuttal Testimony No. 9.

Applicable Legal Principles: None.

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<sup>31</sup> CON Trial Brief at 13.

I. COORDINATION OF GOVERNMENTAL  
RESOURCES AND RESPONSE

JI Contentions Nos. 61-63

The Contentions:

JI 61

Contention

Applicants have not met the requirements of 10 CFR § 50.47(a)(1) to provide a "reasonable assurance that adequate protective measures can and will be taken in the event of a Radiological emergency" at Seabrook because they have failed to show what emergency response measures will be taken by the Massachusetts state and local governments in the event that Mode 1 of the SPMC is followed. Section 50.47(c)(1)(iii)(B) contains the presumptions that a) "state and local government officials will exercise their best efforts to protect the health and safety of the public", and b) where an applicant's inability to comply with § 50.47(b) results wholly or partially from the nonparticipation of state and local governments, that in the event of an actual Radiological emergency state and local officials would "generally follow" the utility plan. The SPMC establishes two alternative "modes" for the Massachusetts state and local governments to follow. Mode 1, contemplates that Applicants will provide only resources -- i.e. equipment, buses, ambulances, personnel, etc. -- to the state and/or local governments. SPMC at 3.1-2. Aside from broadly describing the emergency response functions of each state agency, however [SPMC, § 2.2], the SPMC does not contain any blueprint for state and local government agencies to follow in undertaking primary responsibility for the emergency response. The plan describes emergency response functions for the New Hampshire Offsite Response Organization ("ORO") rather than state or local governments. The means by which the state and local governments are thus presumed to "follow" the SPMC in Mode 1 consists only of using Applicants' resources in carrying out an ad hoc response. The mere provision of resources to support an unplanned emergency response does not adequately compensate for the state and local

governments' lack of preparedness to respond to an accident at Seabrook.

JI 62

### Contention

To the extent that the SPMC contemplates integration of the utility's functions with state and local emergency response functions, it does not compensate adequately for the lack of preparedness of state and local officials to respond to a radiological emergency at Seabrook.

The SPMC does not provide a mechanism by which the state and local governments can swiftly and efficiently interact with ORO officials to mount a timely and adequate response to an accident. This results from the cumbersome communication and coordination problems created by the parallel existence of government and ORO emergency response organizations. Each counterpart of the state and local response organization must take the time-consuming steps of communicating and coordinating its efforts with a counterpart in the ORO organization. For each function, the parties must take the time-consuming steps of agreeing on divisions of responsibilities and all of the accompanying logistics, including communication and sharing of equipment and personnel. To the extent that the state and local governments might assume responsibility for an accident response under Mode 2, there are no guidelines in the SPMC that are designed for state and local governments to follow. The Implementing Procedures for the SPMC are addressed to the management of the emergency response by the ORO, not state and local governments. There is simply no plan for the governments to follow.

### Basis

#### B. [TON 11b]

Newbury officials in command and control of emergency functions are unfamiliar with the contents of the SPMC.

Contention

The SPMC fails to provide adequate arrangements for requesting and effectively using assistance and resources that are purportedly available to the state and local governments. Plan 5.3-1. Adequate emergency facilities and equipment are not provided and maintained by state and local governments for an emergency at Seabrook. Thus the SPMC has not met 50.47(b)(3) and (8) and a reasonable assurance finding under 50.47(a) cannot be made.

Basis

A. [MAG 70A]

The SPMC identifies the Massachusetts State EOC at Framingham and claims that it "could be used to provide support in the event of an emergency at Seabrook Station, just as it might be used for response provided to an accident at any other nuclear generating station affecting the state." Plan 5.3-1. This statement is false. No current planning exists that would coordinate the state EOC and the response of the local communities to a Seabrook emergency. The State Area I EOC in Tewksbury is also inadequately staffed for a radiological emergency at Seabrook. There are inadequate maps, communication lines and other materials and information at the Area I EOC to provide a response to a radiological emergency at Seabrook.

B. [MAG 70B]

The local EOCs in the 6 Massachusetts communities are not adequate to handle a radiological emergency at Seabrook. These EOCs are inadequately staffed for such a contingency and do not have the communication links necessary, either between themselves or with the ORO EOC to provide any emergency support for such an accident.

C. [MAG 70C]

No other planning has been done to coordinate other resources available to the state, such as laboratory facilities, and make these resources available in a timely and effective manner in the event of an emergency at Seabrook.

D. [MAG 70D]

The SPMC asserts that the Massachusetts State Police will notify appropriate state and local emergency personnel upon notification from the ORO and/or Seabrook Station concerning a radiological emergency. However, no prior coordination or planning to deal with a Seabrook emergency has been done with the State Police. Moreover, the SPMC assumes the State Police will follow an emergency plan not even before the Board. No liaison for the State Police is provided by the SPMC although the State Police is considered by the SPMC to be an emergency response organization.

E. [TON 11a]

The assumption that the SPMC will be implemented by the Town of Newbury is rebutted by the fact that equipment and personnel resources available to the town are inadequate to effectively or reasonably enable it to do so. The Town of Newbury does not have and is unlikely to acquire sufficient equipment or personnel to effectively or reasonably provide for or maintain passable evacuation routes, sheltering areas, a means of population notification or relocation, transportation for mobility impaired persons, evacuated area access control or methods of dealing with evacuation impediments.

F. [TOWN 4, Basis ¶ 1]

NUREG-0654 I.D.1.c. assumes that local officials will "have the resources sufficient to implement those portions of the utility offsite plan where . . . local response is necessary." That assumption is erroneous as applied to the Town of West Newbury.

G. [TOWN 4, Basis ¶ 3]

The plan assumes that emergency response vehicles and equipment resources such as police and fire department vehicles and traffic and access control equipment are available in each of the local EPZ communities (plan, section 2.2.6). The Town of West Newbury has inadequate resources to effectively implement, oversee, or adequately participate in a safe and effective evacuation of the town pursuant to the plan.

H. [TOWN 8.11]

The plan assumes that emergency response vehicles and equipment resources such as police and fire department vehicles and traffic and access control equipment are available in each of the local EPZ communities (plan, section 2.2.6). The Town of West Newbury has inadequate resources to effectively implement, oversee, or adequately participate in a safe and effective evacuation of the town pursuant to the plan.

I. [TOWN 9.2]

The plan assumes that emergency response vehicles such as police and fire department vehicles are available in each of the local EPZ communities (plan, section 2.2.6). The Town of West Newbury has inadequate resources to effectively implement, oversee, or adequately participate in a safe and effective evacuation of the town pursuant to the plan.

**References to FEMA Findings of Adequacy and Capability of Implementation:** SPMC Report - Criterion A.1.b at pp. 6-7; Criterion J.9 at pp. 56-58.

**Opponents' Prefiled Testimony:** MAG has prefiled the testimony of Charles D. Jones. He begins by saying FEMA did not look at Mode 1 or Mode 2 partial operation of SPMC. It is his position that if Mode 1 means The Commonwealth follows its own plan, Mode 1 is nothing, and even if the Massachusetts emergency plan written by The Commonwealth is a good plan, it is of no use without a Seabrook specific plan. He testifies that it will take the Massachusetts responders a long time to read the plan and therefore if Mode 1 means they follow the plan it will take too long; they would need 6-8 hours to read it. Mode 2 partial will not work because it is

a patchwork quilt. He then says liaisons will not be able to instruct the Massachusetts officials in Mode 1 or Mode 2 partial because they do not know enough about how The Commonwealth operates to interpret the plan to them. He further opines that two liaisons are needed at each location: one who knows the facility and one who knows the plan. He also states that the FEMA test of asking the traffic guides what they would do if state took over is not a useful way of verifying coordination ability.

**Applicants' Prefiled Testimony:** Applicants address these contentions in **Applicants' Rebuttal Testimony No. 21**. This has been described above in connection with JI-27.

**Applicable Legal Principles:**

1. It is assumed that state and local officials will do their utmost to protect the public health and safety.
2. In the circumstances of this case, it is assumed that The Commonwealth will follow the SPMC.

## J. EXERCISE CONTENTIONS

[N.B. FEMA found no deficiencies with respect to the graded exercise. See App. Ex. 43F, passim. As a result the Exercise Contentions section of this trial brief contains no citations to the FEMA exercise report; all matters in contention were found adequate by FEMA.]

### Contention MAG EX-2

The Contention: The scope of the June 28-29, 1988, exercise of the SPMC was so limited that it could not and did not yield valid or meaningful results on implementation capability as required by 10 CFR § 50.47(a)(2) and Appendix E paragraph IV.F.1. in that it did not include demonstrations or evaluations of major portions of the SPMC and the emergency response capabilities of many persons and entities relied upon to implement it. The data set forth in the subparts of this contention individually and collectively establish that there is no reasonable assurance that the SPMC can or will be implemented in critical respects. Thus, the Exercise precludes a finding that there is reasonable assurance that adequate protective measures can and will be taken, as required by 10 CFR § 50.47(c)(1).

Each of the following portions of the plan, or the response capability of the following organizations relied upon, was required to be tested for this Exercise to qualify as the initial full participation Exercise. For all of the plan portions and supporting

organizations listed, the Exercise did not test "as much of the . . . plans as is reasonably achievable without mandatory public participation." 10 CFR Part 50, App. E, par. IV.F.1.

#### Basis

E. ORO's capability to implement a timely evacuation of the Mass. EPZ's two hospitals and all other special facilities was not tested. Specifically, ORO did not attempt to demonstrate that it could muster the appropriate vehicles and personnel to the EPZ hospitals, nursing homes, and other special facilities in a timely fashion and did not attempt to demonstrate appropriate procedures for loading patients. (The total "extent of play" for testing hospital evacuation procedures was that one ambulance was assigned the task of driving to one hospital and then to a reception center.) The Exercise also failed to test the preparedness of the bus, ambulance, and wheelchair van companies being relied upon for this important function.

Opponents' Prefiled Testimony: None.

Applicants' Prefiled Testimony: Applicants have addressed this contention in Applicants' Rebuttal Testimony No. 23. That testimony describes FEMA guidance on the scope of the exercise, the way in which the scope of the graded exercise was determined in this case, and then addresses a number of the specific contentions made. The contention at issue is addressed in § III.A. of the testimony.

Applicable Legal Principles: None.

#### Contention MAG EX-4

This contention was disposed of on summary disposition.

## Contention MAG EX-8

The Contention: The results of the Graded Exercise reveal that there exist fundamental flaws in the Seabrook off-site emergency plans submitted by the State of New Hampshire and the Applicants with respect to planning standards 10 CFR 50.47(b)(6) and (b)(8) and the corresponding requirements of NUREG 0654, Supp 1 at II.F.1.b and c, and 2 and H.10. As a result, exercise objective 4, which requires that the exercise "[d]emonstrate the ability to communicate with all appropriate locations, organizations and field personnel," GM EX-3 at 11, was not met and no finding of reasonable assurance can be made pursuant to 10 CFR 50.47(a) and (c)(1).

Exercise results which individually and/or collectively provide basis for this contention include the following:

### Basis

B. The communication net linking the ORO field personnel with the EOC and with each other was demonstrated to be completely inadequate. Information flows were delayed and accuracy was compromised by the vertical communication chain required by the SPMC. ORO field personnel including VANS drivers, traffic guides, transfer point dispatchers, route guides, radiological field teams and others, were using hand-held, battery powered 8 channel radios. Radio communications were demonstrated to be deficient:

1. The EMS radio, the primary communications link with mobile medical support facilities like ambulances and vans, malfunctioned and could transmit but not receive messages. This indicates that ORO had not provided adequate inspection and inventory check for critical emergency communications equipment. No immediately accessible back-up communications system was available at the Staging Area and

portable radios had to be produced (from an unidentified source in an unidentified manner) and provided to the one ambulance and three vans involved in the Exercise. (Obviously, had the actual emergency number of ambulances and vans been involved this procurement task would have been measurably greater.) Dispatch of one ambulance was delayed 20 minutes while these portable radios were procured. (However, this does not indicate that it took only 20 minutes to procure them.) The vans were not "delayed" only because they were not ordered out until after the substitute radios were procured. But one van did not establish appropriate radio contact until more than 80 minutes after it had been dispatched. That van was instead communicating on the wrong channel with the Evacuation Support Dispatcher ("ESD") but neither the van nor the ESD notified the appropriate persons (including each other) that the communication linkage was inappropriate. The other two vans and the ambulance which were using the replacement radios were restricted by the shorter range that these substitute radios had in comparison with the EMS that had been malfunctioned.

2. Radio communication between the ESD and traffic guides was sporadically interrupted by breaks in reception. Communications between road crews and transfer points were delayed by other radio traffic. Apparently, road crews could not communicate directly with the ESD and, in one instance, the ESD was informed using a traffic guide's radio that an additional wrecker was necessary.

3. Radio communication between the Staging Area and school evacuation buses was limited to these periods when the buses were within range. Several bus yards were out of that range and these buses could not be reached for hours. The same problem existed in trying to communicate with the buses for day care centers and the transit dependent.

4. Other ORO field personnel had only sporadic communications with the Staging Area because of channel overloading and intermittent reception. When route guides (sic) and bus drivers were told to ingest KI at 15:45, 4 of 11 did not ingest KI; 4 of 7 buses for the transit dependent did not receive this transmission.

**Opponents' Prefiled Testimony:** MAG has filed the testimony of Messrs Sikich and Cohn with respect to this contention. The testimony criticizes the fact that there

appears to be no procedure whereby a route guide who spots an impediment can call to an upstream guide and have him reroute traffic rather than having to communicate up the line to ORO and back down again. According to the witnesses, this lack of procedure caused it to take two and one half hours to clear a road impediment during the exercise.

**Applicants' Prefiled Testimony:** Applicants' address this contention in Applicants' Rebuttal Testimony No. 22. In particular this contention is addressed at pages 5-7 thereof. Therein it is explained that the intervenors are wrong in their understanding of the delay involved by one hour; the problem was exacerbated by a controller decision; and, in any event, the problem was caused by an isolated error on the part of one individual.

**Applicable Legal Principles:**

1. The failure of an individual to follow the requirements of the plan does not demonstrate a fundamental flaw in the plan absent a showing that that individual's performance is critical to the plan and there is in place no backup structure or provision to mitigate the effect of the individual's failure. Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499, 505 (1988).

## Contention MAG EX-9

The Contention: The Exercise revealed a fundamental flaw in the SPMC in that NHY's ORO demonstrated that it did not have the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion after initial alert and notification has occurred, as required by 10 CFR 50.47(b)(5) and (6) and the guidance set forth at NUREG 0654 (Supp 1) at II.E.3-8, and F.1. As a result, exercise Objective 13 was not met and the exercise will not support a finding that adequate protective measures can and will be taken in the event of an emergency.

### Basis

A. The EBS messages and the News Releases actually generated during the Exercise were confusing and contained conflicting information. An average member of the public who had heard over the radio or on television the ORO News Releases and EBS messages in sequence would have come away with all kinds of unanswered questions. Confusion would have been generated, for example, regarding who/what ORO was, what had happened to town police and Civil Defense, what the role of the state was, what it meant that ORO was "activated," what it meant to leave the "beach areas" ("How far should I go?" "What if I live there?"). Much confusion would have been generated about the school children, what schools were doing, and what parents should or should not do (as is more specifically described in MAG EX-10). There was even confusion generated on Day 2 of the Exercise with respect to what people would be let into the EPZ to care for animals. Much confusion was also generated on both days of the Exercise due to the conflicting nature of the ORO and New Hampshire EBS messages and news releases.

B. The EBS messages and news releases were not accurate in many respects. For example, there was misinformation about the Newburyport schools in ORO EBS #3, as FEMA has noted. Also, there was a serious mistake in News

Release #15, which said that the overturned lumber truck (described in more detail in MAG EX-13) was blocking traffic on southbound I-95.

C. The news releases were not timely in many instances. Events were repeatedly not reported at the Media Center until long after they had occurred, as was the case with the overturned lumber truck, which was not reported until long after it had begun (sic) blocking traffic. Messages and information were not forwarded promptly from the EOC to the Media Center and the Joint Telephone Information center, as can be seen from the times noted on many of the player generated material. See also FEMA report at 217. In addition, and perhaps most serious, ORO generally lagged behind New Hampshire in issuing PARs to the public, as can be seen clearly in the time lines contained in the FEMA report. On Day 2, for example, it took a very long time after the State of New Hampshire for ORO to get an EBS message out regarding farmers re-entering the EPZ to care for livestock.

D. The timing and content of ORO's public information was not coordinated in any systematic way with the public information (sic) being released by New Hampshire. This would have led to further confusion and mistrust. Comparison of the messages released at about the same time by NH and ORO reveal numerous differences that needed to be resolved and were not. The process for coordinating the information released was shown to be ad hoc and therefore inadequate.

**Opponents' Prefiled Testimony:** MAG has filed the testimony of T. Michael Carter with respect to this contention. He complains that ORO gave no message until after the State of New Hampshire had issued information and closed the beaches and the ORO messages, when issued, did not tell people that New Hampshire beaches had been closed or give a recommendation for the New Hampshire beaches. Mr. Carter also complains that EBS #1 did not describe the "level of concern " which residents should have; that all site area emergency messages (five hours worth) only referred

Massachusetts people to the PIM; that New Hampshire had addressed schools when ORO had said nothing (this is a matter of concern because of parents' concerns); and that ORO left out boating areas at one point after previously referring to them. He further criticizes ORO for evacuating (news release #7) Amesbury and Salisbury, while not explaining why other portions of the EPZ were to shelter and giving no rationale for the difference; as a result, he says, all people in the EPZ thought they were at equal risk. ORO further erred in referring to a contaminating event in message 7 but thereafter never referring to that term again. He refers to the EBS message which intervenors claim was confusing as to whether children were being evacuated or held in school and says that ORO did not correct the message soon enough. He complains that ORO told residents without transportation to wait for a message and let them wait too long, and that the bus route announcement was made 1 hour after the message said the busses would start picking people up.

**Applicants' Prefiled Testimony:** The allegations with respect to the school and bus EBS messages are addressed in Applicants' Rebuttal Testimony No. 18 in §§ V and VI thereof. The allegations with respect to EBS messages in general, and coordination with New Hampshire are addressed in Applicants' Rebuttal Testimony No. 19 in the latter half of § V thereof.

**Applicable Legal Principles:**

1. Problems which are susceptible of solution by further training do not constitute fundamental flaws in an emergency plan. Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499 (1988).

2. Any delay upon which the concept of "fundamental flaw" is premised must be shown to be substantial in nature. Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499, 505 (1988).

**Contention MAG EX-10**

**The Contention:** The Exercise revealed a fundamental flaw in the SPMC in that NHY's ORO demonstrated that it did not have the ability and resources necessary to implement appropriate protective actions for school and day care children within the plume EPZ, as required by 10 CFR § 50.57(b)(10) and the guidance set forth in NUREG-0654, Rev. 1, Supp. 1, §§ J.9 and J.10.g. Thus, ORO failed to satisfy Exercise Objective 19, and this precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Seabrook, as required by 10 CFR § 50.47(c)(1).

Exercise results which individually and/or collectively form the basis for this contention include the following:

**Basis**

A. Over the course of Day 1 of the Exercise, ORO demonstrated that it was unable to notify and exchange information with all the schools and day care centers in a

timely fashion to keep pace with the changing developments of the emergency and to implement timely protective actions. Except in one instance (see B, below), the hundreds of phone calls made to schools and day care centers during the exercise were made to the FEMA Control Cell. FEMA Control Cell personnel received these phone calls, listened to what the School Liaisons had to say, did not ask to have information repeated, infrequently asked a single question or two, and promptly gave any information sought by the School Liaisons. This allowed the Liaisons to make the calls to the assigned schools at an unrealistically rapid pace that could not be achieved in a real emergency when real school officials would ask a great many more questions than FEMA Controllers did and their responses to the Liaisons questions would not be as readily forthcoming or as brief. In a real emergency, each of these calls would take considerably longer. Moreover, during the Exercise, the phone numbers used by the Liaisons to call the FEMA Control Cell were rarely busy. During a real emergency it must realistically be expected that many dozens of phone calls from concerned parents will flood phone lines to the schools making it probable that School Liaisons will have to spend considerable time making call-backs. Nevertheless, even with the cooperative FEMA Control Cell and the absence of busy school phone lines during the Exercise, ORO's School Liaisons were not able to make their calls and exchange information with schools and day care centers at a rapid enough rate to keep schools adequately informed in a timely fashion of changing developments and PARS. The Exercise thus demonstrated that each School Liaison has too many calls to make, and too much information to exchange, to keep all schools adequately informed in a timely fashion in a real emergency.

B. One real school in the Massachusetts portion of the EPZ actually was to be contacted on the Day 1 of the exercise and a real, rather than a simulated, exchange of information was to occur. When the Amesbury School Liaison first called this school at 11:17 a.m. to notify it of the Alert and exchange information, the phone went unanswered. He did not call back until 1:50 p.m. when he was in the process of making his second round of calls to the Amesbury Schools. Again he received no answer. No further attempts were made to call the school; no call was made to the phone company or elsewhere to confirm the accuracy of the phone number; and no route guide was dispatched to see what the problem was at the school. In the event of a real emergency, ORO needs to anticipate both that some school officials will be away from their phones momentarily and that school phones generally will often be busy. In either case call-backs need to be

made promptly to ensure that some schools do not get bypassed. During the Exercise, ORO demonstrated that it does not have a system in place for ensuring that call-backs can or will be made promptly or, where schools which are expected to be in session have phones which go unanswered or are repeatedly busy, that timely efforts can or will be made to contact the schools using alternative means.

C. The ORO demonstrated that it could not make a school PAR and communicate it to the schools in a timely fashion, thereby effectively precluding implementation of the chosen protective actions for a significant number of school children. While New Hampshire was able to make a protective action decision to have its children "stay in school" at 11:52 a.m. (immediately after the SAE was declared), ORO's decisionmakers did not have a serious discussion focussing on the school PARs until 1:25 p.m., just minutes before the General Emergency was declared. In that discussion at 1:25 the ORO Director recognized the need to quickly come to a decision on a PAR for schools, because he knew the schools had normal closing times which were generally between 2:15 and 3:00 p.m. Yet he decided to postpone making a PAR decision at 1:25. At 1:32 a General Alert diverted ORO's focus on the schools. Finally, at about 2:05 p.m., a decision on a school PAR was made: hold the children in the schools rather than releasing them at the normal times. By 2:05 p.m., however, ORO had left itself too little time to notify the Merrimac schools of this PAR before it released its students at 2:15. ORO's own (sic) actions and delays thereby precluded it from implementing this PAR for the Merrimac schools. So the PAR was issued only to the schools in the remaining five communities. But, again, ORO could not act quickly enough and notification was delivered too late to four (4) of the schools in Newburyport to prevent them from releasing their students at the normal time. Thus, because of ORO's delays in making a school PAR and in communicating it to the schools, ORO was unable to implement its recommended PAR in all of Merrimac and most of Newburyport.

D. Thereafter, ORO's efforts to communicate its PAR to the schools and parents, were uncoordinated, confusing, conflicting, and likely would have resulted in chaos at the schools and day care centers. As a result, there is no reasonable assurance that ORO's recommended protective actions could have been implemented. First, ORO's leadership failed to explain the specifics and the logic of the "hold the students" decision to its own staff including the School Coordinator, the School Liaisons, and ORO's personnel in the Media Center. At 2:15, the School Coordinator told all the

School Liaisons (except the one for Merrimac) to call their respective schools (including day care centers) and tell them "that the children are to stay at school until parents pick them up or we evacuate them." However, School Liaisons were also instructed to find out whether the schools wished to retain and use their own buses or use ORO buses later on. Thus, when the School Liaisons called the schools from about 2:15 to 3:15 p.m. after the declaration of the General Emergency, the message given about PARs was confusing and lacking in logic. No instructions were given to school administrators about how to implement or whether to implement sheltering for the students. Indeed, it was not even clear whether the schools were evacuating, sheltering, or sheltering now and evacuating later. If schools indicated that they could not retain their buses, Liaisons were unable to estimate when ORO buses might be able to get to them.

Difficulties in implementing ORO's school PAR would have resulted from these confused, illogical communications to the schools and day care centers. For example, when the Amesbury School Liaison called the Horace Mann School at 2:54 p.m. and found that the school was then in the process of loading students onto its buses, the Liaison told school officials there to unload the buses and get the children back into the school "due to the release going out to sea." This, of course, makes no sense. It also was not true, for at that time the wind had begun to shift around and to come from the north, blowing the plume toward Massachusetts. If school officials sought out a weather forecast, they would have learned that the wind was soon going to swing around and blow from the east, blowing the plume right at Amesbury. They undoubtedly would have also learned that the Town of Amesbury had been recommended to evacuate. In this situation, in a real emergency, there is no reasonable assurance that Amesbury school officials would have heeded the School Liaison's advice to hold the students.

To make matters worse, conflicting messages were then being given regarding whether parents should or could pick up their children at the schools and what was happening to the students. The School Liaisons (except for Merrimac, which sent its students home) were instructed to tell the schools that the children should be kept in school until parents pick them up or ORO evacuates them. Meanwhile, ORO issued an EBS message (ORO EBS #3) at about 2:20 p.m. which advised parents:

- a. that a radioactive release had occurred;

b. that immediate evacuation is recommended for people in Salisbury and Amesbury and that people in Newburyport, Newbury, West Newbury, and Merrimac was safer if they sheltered in place immediately;

c. that "[a]ll schools within the communities directed to evacuate are being evacuated to the designated Reception Centers for the community in which they are located. Parents should not drive to school to meet their children since schools (sic) are now being evacuated and children are being taken safely by bus directly to their Reception Centers. School children will then be sent to The Host Facility in A [sic] where they may be picked up";

d. that schools "in the communities advised to shelter are taking similar sheltering actions. Officials have instructions for protecting the children or other persons in their care until sheltering is no longer necessary. Parents and relatives are advised not to call the schools or other institutions, nor to drive to the schools to attempt to pick up their children. Community safety will be better protected if the schools are permitted to conduct sheltering activities over the next several hours"; and

e. that "[p]arents with children attending school within Salisbury, Amesbury, Newbury, West Newbury and Newburyport are advised that their children are currently being safely maintained at school, where they will be kept until it is determined that they can be safely moved."

This message was so confusing, contradictory, and misleading that it would have torpedoed any effective implementation of ORO's PAR for the schools and day care centers. Some, but not all, of the problems with this message are as follows:

\* While ORO's School Liaisons were telling schools that parents can pick up students, this message tells parents to stay away and not even call the schools.

\* It instructs the general population of Amesbury and Salisbury to evacuate immediately

while telling parents in these towns both (a) that Amesbury school children "are being" evacuated and (b) later in the message, that these same children are being "kept" at school "until it is determined that they can be safely moved."

\* It instructs the general population in Newburyport, Newbury, and West Newbury to shelter in place immediately while telling parents in these towns that schools are taking similar sheltering actions (a) "over the next several hours" and (b) later on in the message, "until it is determined that they can be safely moved." Besides being confusing, this message is erroneous in that four of the schools in Newburyport were releasing students and sending them home.

\* It instructs the general population in Merrimac to shelter in place immediately but gives parents in Merrimac no information whatsoever about what is happening to their children.

\* For students who are being or may be evacuated, it failed to say specifically where parents may go to meet them and pick them up and when this can occur.

Despite the precaution in the message not to call or drive to the schools, this EBS message given at about 2:20 p.m. is so confusing and inadequate that in each of the six Massachusetts EPZ communities, parents would not have had sufficient information about what actually was happening to their children, and most would either have attempted to call or drive to the schools. Parents' calls would undoubtedly have flooded the schools shortly after 2:20, just when the School Liaisons were calling to inform the schools directly of the PAR to "hold" the students and inquire of their need for buses. The likely result would have been that ORO would have had great difficulty getting phone calls through to each of the schools to inform them of the PARs. Thus implementation of PARs for schools was likely to have been frustrated due to the confusion generated by ORO's 2:20 p.m. EBS message. There is substantial uncertainty regarding what would have happened next. School officials would likely have hesitated, not sure what to do, causing parents, teachers, and the regular bus drivers alike to each consider taking independent, ad hoc, uncoordinated action as each group saw fit. ORO's attempt to resolve the confusion it had created over the school children came belatedly in the form of an EBS

message at 4:03 p.m., almost 1½ hours after the first message. It, too, was confusing and came too late to have had any significant impact in resolving the confusion the first message would have created. These Exercise results demonstrate that ORO is unable to coordinate the timing and content of its messages to the schools (through calls from Liaisons, and parents (using the EBS system) to ensure that PAR implementation is not frustrated by general confusion and chaotic, independent actions.

E. Events during the Exercise demonstrated that, given the absence of school-specific emergency plans, there is no reasonable assurance that school officials will take the appropriate steps to implement proper sheltering techniques in a timely fashion when it becomes necessary to do so. ORO EBS #3 inaccurately stated that school officials "have instruction for protecting the children or other persons in their care until sheltering is no longer necessary." This simply is not the case. While it is true that some EPZ schools were sent a "generic" school plan which contained some very general instructions for sheltering that were not specific to any particular school, the schools have not kept this generic plan. The schools also have no plans or instructions of their own for implementing sheltering, and school officials are not knowledgeable (sic) in this area. The Exercise further demonstrated that ORO does not have the capability to compensate for the lack of existing school radiological plans or information. School Liaisons demonstrated that in an accident like the one simulated here, which was hardly the fastest developing accident within the planning basis of NUREG-0654 advancing from an Alert to a release of radiation in more than four (4) hours, they were pressed beyond their abilities just to notify schools of developments and PARs and briefly answer a quick question or two. They were too busy with these basic functions to take the time to assess whether in fact schools know how to implement proper sheltering techniques and, if not, to offer detailed, adequate advice. Thus, if the Exercise had been a real emergency, the schools would not have been able to implement proper sheltering techniques while waiting for ORO buses to arrive. Since the simulated plume passed over many of the Massachusetts schools before the buses arrived, this failing would have increased dosages to school children.

F. If any conclusions are to be drawn from the extremely limited scope of the Exercise regarding ORO's buses for schools, they are: (1) that ORO cannot estimate accurately the arrival time of its buses at any given school and (2) that there is no reasonable assurance that ORO's

fleet of hired buses can get to the schools in a timely fashion. Although the SPMC claims to have agreements with private bus companies to provide 534 buses in a radiological emergency at Seabrook, and that 226 buses would be needed to evacuate the schools, for this Exercise only four (4) buses were tested by being dispatched and driving routes to schools. (Three other buses were dispatched on various routes to day care centers, for which the SPMC specifies only 19 buses may be needed.) Normal mobilization times were not even tested as all seven buses and drives had been pre-arranged to be ready to go on the day of the Exercise. The extent of play was limited to dispatching and driving the four school buses to four different schools and then to reception centers in the "real" time sequence. The first Exercise problem ORO encountered after dispatching the buses was to generate an estimated time of arrival ("ETA") of each bus for each target school. School officials and the public would demand these ETAs during an emergency, and the FEMA Control Cell sought them here from the School Liaisons. During the Exercise, ORO at first delayed but then finally offered a set of ETAs for buses for each town, but these ETAs were not released publicly in a timely fashion. Events during the Exercise proved these ETAs to be significantly optimistic, and they had to be changed. If the Exercise had been a real emergency and ORO had dealt with the ETAs in this same fashion, it would have created further difficulty in implementing a safe and coordinated evacuation of the schools, because both schools and parents would have lost confidence in ORO's ability to do what it promised it would to, *i.e.*, evacuate the students in a timely fashion. This would have spurred parents and schools to take ad hoc, independent, uncoordinated action regarding the students.

The second bus-related problem ORO encountered was to have the buses drive the prescribed routes on their ORO maps, locate the target schools, and do so in a timely fashion. Although only seven buses were tested (four on routes to schools; three on routes to day care centers), there were a significant number of mistakes made. Even though each ORO bus had a Route Guide on board to assist the driver in following routes, in several instances the drivers were unable to follow the prescribed routes. In one case, a bus ended up on a dead end street in such a position that it took 20 minutes to get out. In some cases the Route Guides made no effort to request that the driver following the prescribed routes. In other instances, Route Guides disregarded their SPMC prescribed routes and improvised other routes. The buses for day care centers actually had difficulty locating several day care centers, and one center was actually missing

from the SPMC map. The upshot of all these difficulties is that: first, ORO cannot accurately estimate the bus ETAs as they must to ensure that parents and schools will cooperate with evacuation plans, and, second, based on this very limited sample of buses and the number of routing difficulties encountered, there is no reasonable assurance that buses for any given school can and will arrive in a timely fashion to adequately protect the school children. Here, during the Exercise, because the buses were not able to arrive in a timely fashion, a large number of school children were still waiting in schools for the arrival of the buses when the plume swept over them.

At the root of these problems is the fact that: (a) ORO bus drivers and Route Guides brought in from other towns just are not familiar enough with this area and (b) the area is so lacking in street signs that difficulties and delays of the sort displayed during the Exercise will be inevitable.

**Opponents' Prefiled Testimony:** MAG has filed testimony by Mr. Sikich with respect to this contention. Therein he makes the following allegations: liaisons were unable during the exercise to notify schools and day care centers fast enough to keep pace with rapidly changing developments; the Amesbury school liaison started at 11:10 AM and had not completed calls to all schools and day care centers as of 1:06 PM when told to desist. He had 16 left to call. Thus, the schools did not know of the SAE declared at 11:46 AM until 1:26 PM; a general emergency was declared at 1:30. Then this same liaison could not get everyone required in a series of calls to tell them of the general emergency PARs. Mr Sikich states that the fact that the liaison was calling a FEMA control cell does not detract from the fact that he only reached 3 of 32 even though he was sharing the control cell

with another liaison. He likens this difficulty to the situation where trunk lines have to be shared in a real emergency. Also, he decries the fact that it took five hours from the decision to use ORO contract buses finally to get transportation to the last of the day care centers. He states that during the exercise, the ORO failed to reach the Amesbury school they tried to reach and then simply so informed the coordinator. He complains that ORO did not consider PARs for schools until one and one-half hours after the State of New Hampshire did. He decries the lack of an order to shelter children in school while waiting for buses. He states that the liaison made an error with respect to the Horace Mann school, thinking the children were boarders, and, in any event, treated them wrongly assuming he had been correct. Then he goes on to more alleged mistakes with respect to Amesbury: confusing EBS messages, late bus arrivals (late in sense that they were 2 hours after predicted). His conclusion is that ORO cannot coordinate the timing and content of messages to schools and parents.

**Applicants' Prefiled Testimony:** Applicants address this contention in Applicants' Rebuttal Testimony No. 18. Each of Mr. Sikich's charges is addressed.

**Applicable Legal Principles:**

1. Problems which are susceptible of solution by further training do not constitute fundamental flaws in an

emergency plan. Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499 (1988).

2. Any delay upon which the concept of "fundamental flaw" is premised must be shown to be substantial in nature. Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499, 505 (1988).

#### Contention MAG EX-11

**The Contention:** The Exercise revealed a fundamental flaw in the SPMC in that the NHY ORO demonstrated that it did not have the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAG's, availability of adequate shelter, evacuation time estimates, and other relevant factors, as required by 10 CFR §§ 50.47(b)(10) and the guidance set forth in NUREG-0654, Rev. 1, Supp. 1, § J.10.m. Thus, ORO failed to satisfy Exercise Objective 11, and this precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of an emergency at Seabrook, as required by 10 CFR § 50.47(c)(1).

Exercise results which individually and/or collectively form the basis for this contention include the following:

#### Basis

A. During the Exercise NHY ORO personnel did not make their own independent assessments, evaluations, judgments or determinations regarding protective action recommendations but merely acted as a conduit, accepting the protective action recommendations received from the Seabrook Station EOF without any meaningful scrutiny being applied to assess their adequacy, and then simply seeking approval to implement them from the (simulated) Massachusetts Governor's representative.

By acting in this fashion, which is contrary to the SPMC's procedures for making protective action decisions at Plan § 3.4.2 and the corresponding Procedures sections, the ORO failed to demonstrate that it has the technical understanding, judgment, and ability to assess and weigh all factors relevant to a protective action recommendation and to make appropriate recommendations in a timely fashion on its own.

B. Virtually every one of the protective actions recommended by the NHY's ORO were not appropriate, in light of all relevant circumstances at the time. Other protective action choices were available which were more appropriate and could have achieved significantly greater dose reduction. For example:

(1) Upon the declaration of the Alert at Seabrook Station, ORO demonstrated a fundamental flaw in the SPMC when, after New Hampshire acted to close Hampton and Seabrook beaches, and with a wind blowing from west to east that was expected to shift around to come from the north and later on from the east, NHY's ORO refused to consider a precautionary beach closing of the Salisbury beaches and actively discouraged the (simulated) Governor's representative when he considered making this recommendation. This refusal to consider a beach closing at the Alert turned out to be a mistake, for when the wind later shifted as expected, and the plant began releasing a radioactive plume, the plume drifted across the Salisbury beach areas long before all persons there evacuated.

(2) After being notified of the SAE at 11:51 a.m., ORO finally made a protective action recommendation to close the beaches but inappropriately failed to make any early PAR whatsoever for the schools, as New Hampshire did. An early school closing, for example, would have been an appropriate PAR at this stage, at least for those schools with buses available, given all the circumstances known at that time. This PAR would have ensured that students would not have been hit with the radioactive plume that resulted as a direct result of ORO's delayed-school-closing PAR (see (4), below).

(3) After the General Emergency was declared at 1:30 p.m., with a release of radiation minutes thereafter, ORO recommended that Amesbury and Salisbury be evacuated and that the four remaining Massachusetts EPZ communities be sheltered. This PAR, too, was inappropriate. If all relevant factors had been considered and judgment and common sense applied, Newburyport, with its sizeable population,

also should have been given a recommendation to evacuate. The SPMC, however, locks ORO into making PARs for Newburyport only when the same PAR is made for Newbury, West Newbury, and Merrimac. The Exercise demonstrates a fundamental need for greater flexibility in shaping appropriate PARs for the Massachusetts communities.

(4) During the General Emergency, with the wind still blowing the plume out to sea but expected to shift around and blow toward Massachusetts, ORO inexplicably made a PAR to hold the school children in school past the normal closing times in all towns except Merrimac. This decision to hold the school children was not only an inappropriate PAR; it was a disastrous one. Given ORO's knowledge of the plant conditions and weather, and all the uncertainties facing ORO at that time, including uncertainties regarding the lack of emergency plans for each school, uncertainties regarding whether the buses relied on by the schools would be available after normal departure times, and the uncertainties about how long it would take ORO's buses to arrive at the schools if those buses were to be used, the appropriate protective action at that time was to close the schools at normal closing times and use the schools' own buses to get the children home as soon as possible. The scope of the disaster created by ORO's inappropriate PAR to delay closing the schools was made apparent when Seabrook's radioactive plume swept over many schools before ORO's buses arrived late that afternoon or early in the evening to pick up the students. The inappropriate PAR to hold the school children may have actually maximized their dose consequences, not minimized them.

(5) ORO's PAR at approximately 4:00 p.m. that afternoon was also inappropriate. At that point ORO recommended that the four (4) remaining towns (Newburyport, Newbury, West Newbury, and Merrimac) evacuate. Prior to this time residents in these towns had been advised to shelter. Given the conditions of the release, the weather forecasts, the ETes, the uncertainties about how long it would take to get ORO's buses into the towns, and other relevant factors, this PAR should have been given much sooner. As a result, many residents of these communities who could have evacuated prior to the arrival of the plume were unable to do so.

(6) When a 92-year-old bedridden person who could not be evacuated contacted ORO regarding what to do, he was told: "Keep all your doors and windows closed." This individual PAR was totally inappropriate, given the person's physical condition. Assistance should have been offered:

first in the form of an ambulance and, if that was refused, then by sending help to implement proper sheltering measures for him.

(7) Traffic heading from Massachusetts to Maine on I-95 was provided with a suggested by-pass route around the EPZ which was inappropriate because (a) the route suggested consisted of a series of highways which do not connect and, if followed, would send travelers right into the EPZ at Portsmouth; and (b) it purported to direct people to Kittery, Maine, to pick up I-95, but Kittery, a border town just across the Piscataqua River from Portsmouth, is much too close to the EPZ to be included on a safe by-pass route. Indeed, in the evening of Day 1 of the Exercise the plume, with still dangerous concentrations of radioactive material, blew directly over Portsmouth into Kittery. Before that happened, when the wind began blowing the plume northward, ORO should have recognized that use of Kittery on a by-pass route was inappropriate. But, ORO failed to change its by-pass recommendation and directed unwary travelers to drive right into harms way.

C. [Withdrawn by Stipulation dated February 16, 1989.]

D. The process of deliberation which finally resulted in the selection of a PAR for school children was ad hoc and impromptu and not guided by and pre-set procedures, plans, or criteria, including institution-by-institution ETEs. As a result the choice that was finally made was not made in a timely fashion, failed to take into account many relevant factors, and turned out to be a dose-increasing rather than a dose-reducing measure for the children. Thus, the exercise reveals that the SPMC's plans for selecting an appropriate PAR for schools and day care centers is fundamentally flawed in that the plans fail to document an appropriate decision-making process and criteria for selecting the most appropriate PAR for school children.

Opponents' Prefiled Testimony: MAG has filed the testimony of two witnesses with respect to this contention. The first is witness Harris. This testimony criticizes the training given to PAR decision makers. The testimony is that of an educational theoretician which seems to argue that the training program does not have, "meaningful verbal learning

situations," that the training program suffered from an imprecise definition of prerequisite experience, a supposed lack of any overall instructional plan, the use of an approach of "short term recall," absence of "instructional linkages" between classroom and exercise, a lack of instructor training, and use of open book tests. He concludes that the training is fragmented, and must be totally revamped and a new exercise run.

MAG's second witness on this contention is Dr. Goble. Dr. Goble begins by describing the accident scenario used in the graded exercise. Next he describes the FARs made by the Seabrook Station personnel and the protective actions (PAs) taken by New Hampshire and the ORO. Next he claims that, while he does not have much direct evidence, he is concerned that the PAs taken were not the result of sufficient independent evaluation by the decision makers in New Hampshire or at ORO. Next, while stating it to be a difficult question to answer, we are told that, in his opinion, the PARs would have been ineffective in a real emergency. Next he was asked what PARs would have been more effective, and his answer was to describe what would have happened in a real event in his judgment and why he thinks there would have been problems. He then goes on to state that some of the difficulties he described could have been anticipated and gives his views as to what should have been

done. He admits that faults themselves are not sufficient evidence to show that the plan and implementation were deficient, but does say that the faults observed were not specific to the accident. Dr. Goble than gives some general observations on how to handle the problem of wind shifts, complements the Applicants on their preparation to acquire regional weather information and forecasts, decries their reliance on only one (Seabrook Station's) meteorology tower for local conditions, and levels some general criticism against one facet of the METPAC model. Finally he gives his view that the exercise shows that the plans cannot be used effectively in a large early release. It is to be noted that the testimony, as filed, relies upon the testimony already excluded by the Board as transgressing the prior rulings and as less than adequate technical analysis.

**Applicants' Prefiled Testimony:** Applicants address the many bases of this contention in **Applicants' Rebuttal Testimony No. 18** and **Applicants' Rebuttal Testimony No. 26**. The allegations with respect to the schools are addressed in **Applicants' Rebuttal Testimony No. 18** in § IV thereof. The remaining allegations are addressed in **Applicants' Rebuttal Testimony No. 26**.

**Applicable Legal Principles:** See discussion of MAG EX 10.

## Contention MAG EX-14

**The Contention:** The Exercise revealed a fundamental flaw in the SPMC in that the medical facilities, equipment, procedures, and personnel demonstrated in the exercise were not adequate for handling contaminated, injured or exposed individuals, as required by 10 CFR § 50.47(b)(12) and the guidance set forth in the NUREG-0654, Rev. 1, Supp. 1, § II.L.1. Thus, ORO failed to satisfy Exercise Objective 24, and this precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Seabrook, as required by 10 CFR § 50.47(c)(1).

### Basis

C. Personnel at the one hospital tested displayed serious weaknesses as well. Incredibly, both the medical and the nursing staff did not adequately understand the biological effects radiation and the significance of counts per minute, contamination, and millirems per hour dose rates. This is a fundamental problem that casts serious doubt on the ability of this hospital, one which does not do much radiological monitoring/decontamination work, to perform adequately in an emergency. More training may or may not be the solution. If these workers rarely get to perform these procedures, occasional training may not be sufficient to keep the staff ready. Only another exercise can adequately assess whether training can solve this deficiency.

**Opponents' Prefiled Testimony:** MAG has prefiled a piece of testimony by one of his investigators in the nature of hearsay statements as to the status of readiness at St. Joseph's Hospital, one of the MS-1 hospitals in the SPMC.

**Applicants' Prefiled Testimony:** Applicants address this contention in Applicants' Rebuttal Testimony No. 24.

Therein, Applicants explain what the status of training was revealed to be in the exercise, and the fact that additional training is now scheduled to address the ARCA which FEMA noted.

**Applicable Legal Principles:**

1. Problems which are susceptible of solution by further training do not constitute fundamental flaws in an emergency plan. Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499 (1988).

**Contention MAG EX-16**

This contention has been withdrawn by stipulation.

**Contention MAG EX-17**

MAG has represented to the Applicants his intention to withdraw this contention. In the event it is not, it is the last contention addressed in Applicants' Rebuttal Testimony No. 19.

**Contention MAG EX-19**

**The Contention:** The Exercise revealed a fundamental flaw in the Seabrook Station Radiological Plan and Emergency Response Procedures in that during the Exercise the licensee's personnel did not issue appropriate protective action recommendations ("PARs") to the NHY Offsite Response Organization, or the State of New Hampshire as required by 10 CFR § 50.47(b)(10), and the guidance set

forth in NUREG-0654, § II.J.7. and NUREG-0396.

This licensee failing, coupled with the high degree of reliance placed by NHY's ORO, and the State of New Hampshire on the PARs provided by the licensee, precludes a finding that there is reasonable assurance that protective measures for the public can and will be taken in the event of a radiological emergency at Seabrook Station.

#### Basis

A. As described in detail in MAG EX-11 (incorporated herein by reference), the PARs issued by NHY's ORO were not appropriate in numerous respects. These PARs were exactly those which were being recommended by the licensee at that time, and the ORO relied on these licensee PARs almost totally.

B. The PARs issued by the State of New Hampshire were also inappropriate in many respects, including the following:

1. While evacuation of Seabrook, Hampton, Hampton Falls, Kensington, South Hampton, and North Hampton was recommended to the public at about 2:30 p.m., people in ERPA F (Brentwood, East Kensington, Exeter, Kingston, Newfields, and Newton) were not recommended to evacuate until almost 5:00 p.m. Given the size of the release, the potential for increased releases Iodines and Cesium if filters degraded or failed, and the uncertain and unfavorable meteorological conditions (particularly regarding wind speeds, wind direction, and the likelihood of precipitation), this ERPA should have been recommended to evacuate sooner. As a result, thousands of residents in this ERPA who could have safely evacuated earlier were hit by the plume; and

2. The residents of Stratham, Greenland, New Castle, Rye, and Portsmouth were never advised to evacuate but were advised to shelter. Unfortunately, later that evening the plume passed over all of these communities with the possible exception of New Castle.

As a result of these inappropriate PARs, the chances were significantly increased that people in these areas would

have received dosages in excess of PAGs. These PARs issued by New Hampshire were exactly those PARs recommended to it by the licensee at that time, and state officials placed great reliance on them.

D. In all the instances described above, the licensee's inappropriate PARs were derived from its METPAC computer model. It appears from what happened during the Exercise that this model has some fundamental flaws that cause it to fail to take into proper consideration all known facts as well as existing uncertainties in the generation of PARs. It, among other things, fails to adequately consider ETES, weather uncertainties including wind speed and directional changes, and release conditions. In recommending PARs to offsite officials, licensee personnel in the EOF merely passed on copies of the METPAC print-outs without offering any guidance on how much reliance the PARs contained therein should be given.

**Opponents' Prefiled Testimony:** MAG relies upon the testimony of Dr. Goble with respect to this contention. Dr. Goble begins by describing the accident scenario used in the graded exercise. Next he describes the PARs made by the Seabrook Station personnel and the protective actions (PAs) taken by New Hampshire and the ORO. Next he claims that, while he does not have much direct evidence, he is concerned that the PAs taken were not the result of sufficient independent evaluation by the decision makers in New Hampshire or at ORO. Next, while stating it to be a difficult question to answer, we are told that in his opinion the PARs would have been ineffective in a real emergency. Next he was asked what PARs would have been more effective, and his answer was to describe what would have happened in a real event in his judgment and why he thinks there would have

been problems. He then goes on to state that some of the difficulties he described could have been anticipated and gives his views as to what should have been done instead. He admits that faults themselves are not sufficient evidence to show that the plan and implementation were deficient, but does say that the faults observed were not specific to the accident. Dr. Goble than gives some general observations on how to handle the problem of wind shifts, complements the Applicants on their preparation to acquire regional weather information and forecasts, decries their reliance on only one (Seabrook Station's) meteorology tower for local conditions, levels some general criticism against one facet of the METPAC model. Finally he gives his view that the exercise shows that the plans cannot be used effectively in a large early release. It is to be noted that the testimony as filed relies upon the testimony already excluded by the Board as transgressing the prior rulings and as less than adequate technical analysis.

**Applicants' Prefiled Testimony:** The allegations with respect to the performance of the State of New Hampshire is addressed in Applicants' Rebuttal Testimony No. 25. The balance of the allegations are addressed by the testimony set forth in Applicants' Rebuttal Testimony No. 26.

## Contention MAG EX-21

**The Contention:** The Exercise revealed a fundamental flaw in the SPMC in that NHY's ORO failed to demonstrate that it has adequate vehicles, equipment, procedures, and personnel for transporting contaminated, injured individuals, as required by 10 CFR § 50.47(b)(12) and the guidance set forth in NUREG-0654, Rev. 1., Supp. 1, § L.4. Thus, NHY's ORO failed to satisfy Exercise Objective 19, and this precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Seabrook, as required by 10 CFR § 50.47(c)(1).

### Basis

B. During the Exercise, only one of the ambulances ORO is relying on to transport contaminated, injured persons was tested. The two ambulance attendants in this (sic) ambulance were called to a reception center and asked to deal with one single contaminated, injured person. Procedures were observed and evaluated. By mobilizing only one ambulance and its crew and testing its knowledge of proper handling procedures, the Exercise failed to test this major portion of ORO's plans using sufficient numbers of ambulances and crews to verify in any meaningful way the capability of ORO to respond to the accident scenario contained in the Exercise with an adequate number of ambulances and adequately trained ambulance attendants, as required by 10 CFR Part 50, App. E, IV. F. 1., n. 4.

D. Based on the performance errors exhibited by the one ambulance crew tested, no valid generalizations can be made that there is "reasonable assurance" that the entire fleet of ambulances and attendants being relied upon by ORO can perform in an adequate manner. Given the small sample size, there were too many errors observed to draw any such conclusion.

**Opponents' Prefiled Testimony:** None.

Applicants' Prefiled Testimony: This contention is addressed in Applicants' Rebuttal Testimony No. 23 § III.B.

Contention SAPL EX-2

The Contention: The graded exercise of the NHRERP failed to demonstrate the ability to provide a sufficient number of buses and ambulances with properly trained drivers to reasonably assure that transit-dependent, special facility and special needs populations can be adequately protected. There was further not an adequate demonstration that the buses that were employed in the exercise could be properly routed. Therefore, the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(10), § 50.47(b)(14) and NUREG-0654 J. 9 and J.10.d, g and k have not been met.

Basis

The February 26, 1986 FEMA Final Exercise Assessment described two of the deficiencies in the prior exercise as follows:

Serious questions arose at the exercise regarding the ability of the State to provide buses for transportation of special populations, including school children, mobility-impaired, and otherwise transit-dependent populations. Driver resources were not sufficient to meet the transportation requirements. (February 26, 1988 (sic) Final Exercise Assessment at p. 136)

Bus drivers consistently experienced problems in getting to where they would have been needed. They were unfamiliar with alternate routes and experienced difficulties because of the poor quality of photocopied maps. One of the bus drivers made wrong turns and required

prompting to complete his route. One of the buses that arrived at the Rockingham County Dispatch Center was unable to continue because it was low on fuel. Some of the evacuation and other bus route maps distributed at the Rockingham County Staging Area were illegible, some provided insufficient detail to specify the route clearly, and some did not include adequate addresses for the locations at which evacuees were to be picked up. (February 26, 1988 (sic) Final Exercise Assessment at p. 238-239)

Both of those deficiencies were not shown remedied in the current exercise. There still are serious questions about the ability of the state to provide buses for transportation of special populations.

The majority of the bus routes run during the exercise were run out of the proper sequence that the scenario would have required (a good number were run on Day 2). Further, the majority of the routes were run in private passenger vehicles rather than in buses. This did not provide a realistic test of the capability to coordinate the running of the routes in a timely manner and it did not test the ability to provide the numbers of buses and drivers that would actually be required during an emergency at Seabrook.

Out of the 79 transit-dependent bus routes attempted during the exercise, the exercise report states that only 51 routes or 65 percent were completed with only "minor" problems. Routes that were not completed were as a result mainly of drivers getting lost, though in one instance a driver actually caused an accident and forced a private passenger vehicle off the road. (See South Hampton Route 1 at p. 211 of the FEMA Draft Exercise Report) Further, no routes were run from South Hampton to the Salem Reception Center as was supposed to have been done.

It appears that of the 93 routes for schools, nurseries and day care centers attempted, only 70 out of 93 of the routes were completed without controller intervention. (The Draft Report stated at p. 225 that only 60 routes were completed with drivers needing assistance on ten. If this number is correct, it would mean that only 50 routes, or 54 percent of the 93 routes were completed without controller intervention.)

During the actual course of the exercise on Day 1 of the scenario, intervenor observers noted that only six buses and drivers arrived at the Portsmouth Business Center (formerly the Omne Mall) and only five of those buses were dispatched to other locations.

At the Rockingham County Staging Area in Brentwood, only 14 buses, one wheelchair van and one ambulance were present. The FEMA Exercise Report states that 750 regular buses, 95 vans, 34 wheelchair vans, 32 ambulances and 55 coach buses were available (see p. 165). Those vehicles had to have been imaginary; the real numbers were miniscule (sic) in comparison. There was no explicit mention in the FEMA report of how many vehicle drivers could have been made available on the day of the exercise or how that number was verified. A total of 87 drivers from the National Guard and DOT were alleged to have been put on standby, but those number would be grossly insufficient if there were a significant shortfall of bus company drivers.

Virtually the same problems with drivers having difficulties getting where they were needed and having difficulty with reading maps due to not a high enough quality of map were evidenced in this exercise as in the prior exercise. In several cases this time, maps for special facilities had wrong instructions or wrong addresses (See p. 231 of the FEMA Draft Exercise Report). The FEMA Draft Exercise Report also states that: "Some drivers demonstrated no capability to read any map" which indicates that problems with driver training have not been adequately addressed.

Further, the problem of refueling buses has not been adequately addressed. On the day of the exercise, the buses that needed fuel stopped at a gas station, which would not be possible during the course of a real radiological emergency as the proprietors would have evacuated. The signatory of the bus refueling letter of agreement in Volume 5 of Rev. 2 of the NHRERP has gone out of business.

Opponents' Prefiled Testimony: None.

Applicants' Prefiled Testimony: Applicants address this contention in Applicants' Rebuttal Testimony No. 25 in § IV thereof.

Applicable Legal Principles: None

Contention SAPL EX-4

The Contention: The appropriate use of equipment and procedures for collection and transport of samples of food, water and other appropriate items was not adequately demonstrated by the exercise. Therefore, the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(9), § 50.47(b)(10), § 50.47(b)(14) and NUREG-0654 I.7 and 8 and J.11. have not been met.

Basis

Only two sampling teams were included in the exercise.

Opponents' Prefiled Testimony: None.

Applicants' Prefiled Testimony: Applicants address this contention in Applicants' Rebuttal Testimony No. 23 in § III.C thereof.

Applicable Legal Principles: None.

Contention SAPL EX-6

The Contention: The graded exercise of the NHRERP failed to demonstrate the adequacy of personnel to staff both the traffic control posts (TCP's) and access control posts (ACP's) designated in the plan to control evacuation flow and control access to evacuated and sheltered areas. Therefore, the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(10), § 50.47(b)(14) and NUREG-0654 J.10.i, j., k. and l. have not been met.

## Basis

The total number of state police required to provide assistance in staffing of ACP's in New Hampshire is 26-28 state police. (NHRERP, Vol 6 at p. 9-12) An additional 40 state police are needed to staff TCP's and provide municipal security. During the exercise, only 4 ACP/TCP locations were staffed by N.H. State Police from Troop A, Epping. Only 13 of the 17 local communities staffed an ACP/TCP and only one was staffed in each of those communities. There was, therefore, no adequate demonstration that there is the organizational ability or personnel and equipment resources to staff all the required traffic and access control locations in New Hampshire. One of the towns that did not staff any location at all was Hampton. Hampton is the town with the most severe evacuation problems due to its extremely large beach population. The capability to control traffic in that community is critical to an adequate radiological emergency response. Further, the establishment of the TCP/ACP's was done out of the sequence and hence did not provide a true test of the capability to marshal state and/or local personnel and resources to appropriate traffic control locations in a timely manner during an emergency.

Opponents' Prefiled Testimony: None.

Applicants' Prefiled Testimony: This contention was admitted as a scope contention only. Applicants address this contention in Applicants' Rebuttal Testimony No. 23 in § III.D thereof.

### Contention SAPL EX-7

**The Contention:** The graded exercise of the NHRERP for Seabrook Station failed to demonstrate the capability for decontamination of emergency workers, equipment and facilities because the facility that is to be used under the plan was not opened up and demonstrated during the exercise. Further, there was no showing that there is adequate provision for disposal of wastes.

Therefore, the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(11), § 50.47(b)(14) and NUREG-0654 K.5.a. and b. have not been met.

#### Basis

The Hillside Junior High School was, according to FEMA's report, unavailable for purposes of demonstration during the course of the exercise. There was no showing that there were adequate numbers of trained personnel to staff the facility and no showing that the facility had been ever tested for its proposed use. The only FEMA evaluation of the facility was a visual inspection on July 22, almost a month following the exercise. Further, there was no exercise of the capability to dispose of contaminated wastes.

**Opponents' Prefiled Testimony:** None.

**Applicants' Prefiled Testimony:** This contention was admitted only as a scope contention. Applicants address this contention in Applicants' Rebuttal Testimony No. 23 in § III.E thereof.

#### Contention SAPL EX-8

**The Contention:** The graded exercise of the NHRERP failed to demonstrate reasonable assurance of adequate public protection since no capability for 24 hour continuous staffing of Staging Areas and Reception Centers was demonstrated and continuous staffing of local and host EOC's over a continuous 24 hour time frame was not shown to be fully adequate in any of the local or host communities. Key positions at the IFO were not fully staffed by appropriately trained individuals and the Governor's office was not represented according to the plan. Further, the exercise did not demonstrate that there are adequate

provisions for filling the roles of those personnel who are absent due to sickness, vacation or other causes. Therefore, the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(1), § 50.47(b)(14) and NUREG-0654 A.1. and A.4. are not met.

#### Basis

The host EOC's in Salem, Dover and Rochester did not demonstrate shift changes. The Manchester EOC is alleged to have done so, though outgoing staff failed to brief the incoming staff. Neither the Rockingham County Staging Area nor the Portsmouth Circle Business Center Staging Area attempted shift changes. The exercise ended before the shift change was completed at the Reception Center in Dover. Firefighters in Dover conducted a demonstration and distributed a statement which said, inter alia, that "the firefighters . . . universally oppose the evacuation plans as unworkable."

Not even one local EOC in the 17 towns demonstrated a full shift change. The Seabrook EOC was not even staffed in accordance with the plan for the first shift, and the Civil Defense Director did not appear to be trained adequately. Further, no second shift capability was demonstrated for Sheriff's Deputies staffing the non-participating communities. Additionally, three of the Local Liaison Officers and a special needs liaison were not replaced on the second shift at the IFO. The second shift state police did not demonstrate appropriate knowledge and capabilities. One of the two positions at the Joint Telephone Information Center (JTIC) was unstaffed due to illness. The exercise demonstrated no capability to bring in trained replacement personnel for positions left unfilled due to illness or other causes.

Opponents' Prefiled Testimony: None.

Applicants' Prefiled Testimony: This contention was admitted only as a scope contention. Applicants address this contention in Applicants' Rebuttal Testimony No. 23 in § III.F thereof.

## Contention SAPL EX-12

The Contention: The adequacy of procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees was not demonstrated during the exercise. Facilities were not well organized and not run in an adequately effective manner. Therefore, the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(10), § 50.47(b)(14) and NUREG-0654 J.12 have not been met.

### Basis

In Salem, mock evacuees were kept waiting outdoors from approximately 3:14 p.m. until 5:09 p.m. when the first evacuee was monitored. Difficulties in setting up the facility included phone lines strung across a corridor, the DPHS Supervisor's radio not working and too few personnel. The personnel problems were compounded when fire personnel got called away to deal with real life situations. Monitoring times were not efficient and there was a mix-up of the Mettags. An actual breakdown in the monitoring process occurred at 6:28 p.m.

In Dover, the workers in the Reception Center seemed unclear on their responsibilities and there were not enough personnel. Mock evacuees were not allowed into the Dover Reception Center until after 3:30 p.m. There was a good deal of disarray in the organization in the monitoring section and the process of monitoring evacuees did not begin until 4:40 p.m. Some of the evacuees wandered into the wrong areas. Not enough headsets were available for the monitoring instruments.

Opponents' Prefiled Testimony: In support of this contention SAPL has prefiled the testimony of two firefighters (Breton et al.) from the Town of Salem, New Hampshire who purport to describe confusion and chaos at the Salem, New Hampshire reception and decontamination center.

Also they opine that off duty firefighters will not report in a real emergency. Indeed, one of the firefighters (Van Gelder) testifies that if he were on duty in a real emergency he would abandon his post and go home. They comment on the fact that they had had training just before the exercise and suggest that this biased the results. They comment that the scope of the exercise was insufficient in their judgement because there were far fewer people processed than would be the case in a real emergency.

**Applicants' Prefiled Testimony:** This contention is addressed in Applicants' Rebuttal Testimony No. 25 in § V thereof.

#### Contention SAPL EX-13

**The Contention:** The graded exercise of the NHRERP did not provide an adequate demonstration of reasonable assurance that those persons confined to nursing homes, hospitals and like special institutions can be adequately protected in the event of a radiological emergency. Therefore, the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(10), § 50.47(b)(14) and NUREG-0654 J.9, J.10.d., e., f. and g. have not been met.

#### Basis

There was no test of capability to transport hospital and nursing home patients to host facilities by ambulance and the plan for testing of bus bed conversion capability was severely limited. There were only two mini-scenarios to test the emergency bed bus capability and it is not clear from

reviewing the Exercise Report whether or not those mini-scenarios were carried out. Further, there is no mention of any test of the ability to make decisions regarding the administration of KI to institutionalized persons in regard to Objective #16. Finally, there was no test of host special facilities to receive special population evacuees and no test of the capability to monitor and decontaminate these special population evacuees. Therefore, the graded exercise provided no reasonable assurance that institutionalized persons can be adequately protected in the event of a radiological emergency at Seabrook.

Opponents' Prefiled Testimony: None.

Applicants' Prefiled Testimony: This contention was admitted as a scope contention. Applicants address this contention in Applicants' Rebuttal Testimony No. 23 in § III.H thereof.

#### Contention SAPL EX-14

The Contention: The graded exercise of the New Hampshire Radiological Emergency Response Plan (NHRERP) for Seabrook Station did not result in an adequate demonstration that appropriate Protective Action decisions will be made for the plume EPZ communities. Therefore, the requirements of 10 CFR § 50.47(a)(1), § 50.47(b)(10) and NUREG-0654 J.10.m. have not been met.

#### Basis

The exercise scenario resulted in a wind shift which brought a concentrated plume over the communities of Portsmouth, Rye and Greenland toward the end of Day 1 of the scenario, yet those communities were never ordered evacuated. In view of the radiation levels in the plume as the wind carried it over those municipalities, the evacuation order should have been expanded to encompass ERPA G.

The exercise demonstrated that appropriate protective actions were not wholly carried out even within the boundaries of the EPZ.

**Opponents' Prefiled Testimony:** MAG has filed, in support of this contention, the testimony of Dr. Goble. This is discussed in detail in connection with Contention MAG EX-19 above. Therein, Dr. Goble, inter alia, gives some general observations of the problem of handling wind shifts.

**Applicants' Prefiled Testimony:** Applicants address this contention in Applicants' Rebuttal Testimony No. 25 in § II thereof.

**Applicable Legal Principles:** None.

#### Contention TOH/NECNP EX-1

**The Contention:** The scope of the June 28-29, 1988 Exercise of the New Hampshire Radiological Emergency Response Plan (NHRERP) was so limited that it could not and did not yield valid or meaningful results regarding the capability to implement that plan, as required by 10 CFR § 50.47(a)(1) and (a)(2), in that it did not include demonstrations or evaluations of emergency response capabilities of many persons and entities relied upon to implement the NHRERP. In addition, the exclusion of these entities from the Exercise precludes a finding that the Exercise evaluated major portions of emergency response capabilities, as required by 10 CFR § 50.47(b)(14) and 10 CFR Part 50, Appendix E(F)(1). Other than limited participation by State of New Hampshire personnel, the

majority of the organizations, entities, and individuals relied upon in the NHRERP for implementation of that plan did not participate in the Exercise. Thus, the Exercise did not address the willingness, availability, training, equipment, capability, or adequacy of performance of the entities and individuals identified in Bases a to g below, each of which is necessary to implement the portions of the NHRERP referenced therein. Accordingly, the NHRERP is fundamentally flawed.

#### Basis

(a) None of the teachers relied upon under the NHRERP to implement protective actions for school children, See e.g. NHRERP Vol. 18A, Appendix F, participated in the Exercise. Necessarily, the Exercise failed to meet a primary objective to demonstrate the ability and resources necessary to adequately protect students in an emergency. Exercise Report, p. 172. Since hundreds of teachers through their representatives, and by petition, have already provided evidence in this proceeding of their intent not to implement the NHRERP, failure to test for the availability and participation of New Hampshire teachers represents a fundamental flaw in the NHRERP.

(b) Since none of the New Hampshire teachers participated in the Exercise, FEMA could not observe any adequate demonstration of the organizational ability or resources necessary to effect an early dismissal, sheltering, or evacuation, of the school children, even though this demonstration was one of the Exercise objectives. Exercise Report, p. 172. Under the NHRERP, early dismissal, sheltering and evacuation are the only protective actions for school children. See (e.g.) NHRERP Vol. 18A, App F. 1-3, F. 1-4. All of these protective actions assume, and rely upon, teachers for implementation. Id. Failure to observe or test necessary personnel or procedures to protect students represents a fundamental flaw in the NHRERP.

(d) Although at least 45 traffic control guides are to be provided by the New Hampshire State Police to all Towns under the NHRERP, Id. at Tables 3.1-2, 3.1-3, only two troopers actually assumed that function during the Exercise.

See, Exhibit 1, attached. Accordingly, there is no factual basis to support FEMA's finding that State Police could or did properly "handle beach closing," and the time frames for staffing of traffic control points relied on by FEMA are wholly speculative. See, Exercise Report, p. 182. In addition, the NHRERP requires State Police to provide 28 traffic guides to staff access control posts within the New Hampshire EPZ. Volume 6, p. 9-12. Only two troopers were actually deployed to staff ACPs during the Exercise. Exhibit 1. FEMA's conclusion that, by 1530 hours, State Police had adequately shown the capability to deploy all 89 troopers for ACP/TCPs is without foundation. Exercise Report, p. 182. Failure to adequately demonstrate the ability and resources necessary to regulate evacuation traffic and EPZ access represents a fundamental flaw in the NHRERP. Exercise Report, p. 182.

(f) 15 of 18 (83%) of the bus companies relied upon under the NHRERP for emergency and special needs transportation did not provide any drivers or buses for the Exercise. Even the three companies who did provide resources deployed only 18 regular buses (4%) of the 453 required for implementation of the NHRERP. See, Exhibit 2, Attached; Applicants' Direct Testimony No. 2, p. 13, October 21, 1987. The Exercise also utilized only one of 48 ambulances (2%), and two of 71 special needs buses (3%), deemed necessary for implementation of the Plan. See, Applicants' Direct Testimony No. 2, pp. 13-15, October 21, 1987; Exhibit 2. The adequacy of transportation resources, particularly bus drivers, has been seriously disputed in these proceedings. The failure to demonstrate the availability of any meaningful number of these resources represents a fundamental flaw in the NHRERP.

(g) There is no basis for FEMA's assertion that the State, during the Exercise, adequately demonstrated, or "identified", sufficient manned vehicles to evacuate the entire EPZ. See Exercise Report, p. 165. That identification process apparently consisted only of phone calls to bus companies to restate the number of drivers specified in each company's letter of agreement. Apparently, no determination of the number of drivers actually available to drive, was provided by the companies or required by the Exercise. The failure to demonstrate the actual availability of necessary transportation resources, including at least 96% (435 of 453) of the drivers required to implement the NHRERP, represents a fundamental flaw in the NHRERP. Exhibit 2.

**Opponents' Prefiled Testimony:** MAG has prefiled a piece of testimony by Mr. Sikich and by MAG investigator Paolillo which addresses only bases a and b of this contention. The thrust of this testimony is that the scope of the exercise was deficient because of the lack of additional exercising with respect to schools. The remainder of the contention is unsupported by any direct testimony.

**Applicants' Prefiled Testimony:** Applicants address this contention in Applicants' Rebuttal Testimony No. 23 §§ III.D, III.G, III.H.

**Applicable Legal Principles:** None.

#### Contention TOH/NECNP EX-2

**The Contention:** The exercise demonstrated that there is no reasonable assurance that adequate measures can and will be taken to protect school children during a radiological emergency at Seabrook.

#### Basis

During the exercise, Applicants and the State of New Hampshire demonstrated an inability to successfully carry out and integrate protective actions on behalf of the school children in the Seabrook Emergency Planning Zone ("EPZ"). Instructions to the public regarding care of school children were confusing and inaccurate, bus drivers were unable to complete their assignments without assistance, protective action ("PA") decisions regarding school children were made and carried out too late and too slowly, and the State of New Hampshire failed to follow through on protective actions for school children. The process by which the State of New Hampshire ("NH") and the New Hampshire Yankee Offsite Response Organization ("ORO") arranged for care of school

children was one that would have created chaos and confusion in a real accident.

EBS messages, summarized in Table 8 of the Draft and Final Reports, lack sufficient information for parents to obtain assurance or make informed decisions about the protection of their children. At 1045, NH announced that it had closed the beaches (NH Advisory #2), and at 1101 NH beach sirens were sounded. Nothing was said at that point about the status of school children, even though beach residents whose children were in school needed that information in order to make decisions about protecting their family members.

Less than an hour later (1152), the State made a decision to keep school children in school buildings until 1700 (5 p.m.) That decision was not even conveyed to the public until 1242 (NH Advisory #4), almost two hours after the beaches had been closed. Thus, parents who were evacuating the towns of Seabrook and Hampton were likely to go to school to get their children, in contravention of the State's procedures for orderly protective actions.

To complicate matters further, Portsmouth and Brentwood ordered protective actions that differed from the State's. Final Exercise Report at p. 173; Draft Report at p. 231.

In Massachusetts, ORO issued a News Release (#06) at 3 p.m. telling Salisbury and Amesbury residents to evacuate, while at the same time stating that school dismissal would be "delayed." No instructions were given to parents regarding whether or when to retrieve their children. It is difficult to conceive that parents in Salisbury and Amesbury, having been told by this announcement that it was advisable to leave the area, would just leave their children to await some later "dismissal."

The next News Release issued by ORO (#07 at 3:12) was also confusing. Amesbury and Salisbury residents were told to evacuate immediately. The press release also contained the contradictory statements that schools were being evacuated (p. 2) and that "children are currently being safely maintained at school, where they will be kept until it is determined that they can be safely moved." (p. 5) The underlying message conveyed to parents by that press release was that if they wanted to assure that their children would leave the EPZ immediately, as the parents had been told was advisable, they should go to school and get them.

With so many different protective actions being ordered for different groups of people (i.e. beaches closed while surrounding communities told to take no action, some communities told to evacuate while others told to shelter), and with the constant changes in those instructions<sup>1</sup>, parents had a strong incentive to "hedge their bets" by fetching their children from school.<sup>2</sup> For instance, it is reasonable to expect that parents, hearing at the Alert or Site Area Emergency stage that beaches had been closed, would go to school and get their children so that they would be ready to evacuate when the order came. It is also likely that parents who had been ordered to shelter at the General Emergency stage while other towns had been ordered to evacuate, would fetch their children from school. The poor timing of protective action decisions and the confusing media announcements prepared by NH and ORO encouraged these responses from parents. Moreover, NH and ORO failed to demonstrate any recognition of or attempt to deal with the problem. Had this been a real accident and not a simulation, the schools in both the NH and Massachusetts portions of the EPZ would have been jammed with parents trying to rescue their children.

[start footnote 1] Table 7 shows two different "waves" of evacuations of the NH EPZ: NH PA # 3 (evacuation of 0-5 miles), and NH PA # 4 (evacuation of ERPA F). In the first wave, an EBS message at 1435 told some towns to evaluate while others sheltered. In the second wave, an EBS message at 1640 told some of the towns that had been ordered to shelter in the previous EBS message that they should now evacuate. The FEMA report does not contain sufficient detail to evacuate whether schools in each of those towns were also evacuated promptly and successfully, as they should have been. [end footnote]

[start footnote 2] The discrepancies in protective instructions extended across both community and state lines - within the same state, some communities were ordered to evacuate while others were ordered to shelter; and beach closure was ordered in New Hampshire over an hour before it was ordered in Massachusetts. [end footnote]

Finally, once it had initiated protective actions for school children, the State of New Hampshire simply forgot about them. This was clearly apparent to Intervenor observers on the first day of the exercise, when protective actions for schools were carried out. For example, it wasn't until 5:45 p.m. that the State EOC asked the IFO when the towns had been or would be evacuated. At that point, the

status board showed only Seabrook as having completed an evacuation . . . a complete fiction, since Seabrook had withdrawn from the exercise early in the day. At that time, the status board also showed only the estimated time of arrival of buses at reception centers, and not the actual arrival times.

At 6:30 p.m., a half hour before the exercise ended, it also became apparent that NH officials had forgotten that a significant number of children were still in school awaiting late dismissal (i.e. those children in NH towns that had been ordered to shelter). Intervenor observers heard conversations between various officials who were unsure how many children were left in the schools and whether they would be bused or picked up by their parents. Nine minutes before the scheduled 7 pm dismissal, Intervenors heard the IFO call the State EOC and ask what transportation arrangements had been made for these children; the EOC responded that arrangements had been made, but EOC did not know what they were.

NH's news releases reflected the confusion over the status of children held in schools. At 1334, NH News Advisory # 6 stated that children would be held in school until 5 p.m. Nothing was said about how the children were to get home. At 4:01 p.m. (NH News Advisory # 11), NH changed the dismissal time to 7 p.m. for children who were still being held at their schools.<sup>3</sup> At that point, parents were told that they could, if they wished, pick up their children before 7 p.m., but they were not told how the children would get home if they were not picked up by their parents. Less than an hour later, the same parents were told "not to call the schools or other institutions nor to drive to schools to attempt to pick up their children." (News Advisory # 12).

[start footnote 3] Given that there were several waves of evacuation in New Hampshire (see note 1), and the lack of information as to whether schools were evacuated concurrently with the general population of towns in which they were located, it is not clear what schools were still awaiting 7 p.m. dismissal at the end of the exercise. [end footnote]

The actual evacuation of school children was beset with problems. See Draft Exercise Report at pp. B-94 - B-95. As demonstrated at pp. 225-231, a number of bus drivers got lost or needed controller intervention. Maps were poor. One driver took almost 4 hours to run a route between the East Kingston Local Staging Area and the Portsmouth Transportation Staging Area (Draft Exercise Report at p. 225). Some time

estimates are so short as to appear to be incorrect: for instance, at pp. 227 and 229 of its Draft Report, FEMA states that a number of buses took only one or two minutes to travel between locals staging areas and schools. In Massachusetts, only 7 buses were dispatched for the 29 schools and 78 nursery schools and day care centers. Even with such a small test, bus drivers experienced difficulties. Final Report at 225-26.

Finally, NH did not show an ability to swiftly make and carry out protective actions. As discussed above, NH was slow to recognize and resolve the problem of transporting the school children who remained in the EPZ. The State of New Hampshire also delayed in making and implementing other PA decisions. For instance, Intervenors observed that at 1:39 p.m., NHY recommended evacuation. The State did not concur until 2:09, even though it would take at least 45 minutes to get traffic control personnel in place.

**Opponents' Prefiled Testimony:** The only piece of testimony offered in support of this contention was by MAG. It consisted of the testimony of Mr. Sikich and Sandra Fowler Mitchell. Ms. Mitchell, looking in from the hall during the exercise, thought the New Hampshire liaisons' process was often confused and disorganized. Frequently hard copy messages were not fully circulated and returned as Ms. Mitchell believed to be required. She says that the first shift supervisor "regularly" appeared to be frustrated at his inability to get information. She states that state officials did not know how many schools were left in a shelter status at the end of first day. Then Mr. Sikich, on the basis of what Ms. Mitchell has said, states that the confusion described by Ms. Mitchell appears to have been pervasive. He states that in five towns school children were

sheltered indefinitely because of a mistake and no provision was made for clothes, food, and medical care. He states that the news conference announcing indefinite sheltering for school children is not in the exercise log; the logs indicate that after 16:07 state officials forgot the children according to Mr. Sikich. he decries the fact that since the logs indicate that the sheltering was to end at 19:00, this means there was no PAR for the period from 19:00 to 20:00. He says that the state log and the FEMA report are at variance. He points out that two towns ignored the PAR and released the school children. He states that latchkey children were not sheltered in towns where the school children were released from school. He states that Portsmouth disregarded the order from the State as did Brentwood. Finally, Mr. Sikich gives a summary as to how all of this is a fundamental flaw.

**Applicants' Prefiled Testimony:** Applicants address this contention in Applicants' Rebuttal Testimony No. 25 in §§ II. and III. thereof.

**Applicable Legal Principles:**

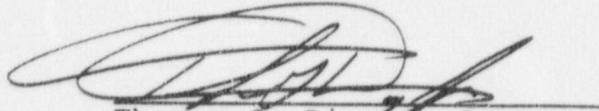
1. Ms. Mitchell has once been found not to be a credible witness in the NHRERP portion of this proceeding.

PID ¶ 7.24.

CONCLUSION

On the basis of the evidence presented, the Applicants will ask the Board to issue an initial decision and order authorizing the issuance of a full power operating license for Seabrook Station.

Respectfully submitted,



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8. Applicants' Rebuttal Testimony No. 23 (Regarding Scope of Graded Exercise);
9. Applicants' Rebuttal Testimony No. 24 (Training of MS-1 Hospital Responders);
10. Applicants' Rebuttal Testimony No. 25 (New Hampshire Exercise Performance);
11. Applicants' Rebuttal Testimony No. 26 (Protective Action Recommendations Made by NHY ORO During the Exercise);
12. Applicants' Cross-Reference to Joint Intervenor Contentions and Applicants' Rebuttal Testimony
13. Applicants' Supplemental Answers to Intervenors' Expert Witness Interrogatories;
14. Professional Qualifications of John W. Baer;
15. Professional Qualifications of Robert Cotter;
16. Professional Qualifications of George R. Gram;
17. Professional Qualifications of John G. Robinson;
18. Professional Qualifications of Colby E. Wells;
19. Applicants' Exhibit No. 55;
20. Applicants' Exhibit No. 55A;
21. Applicants' Exhibit No. 56;
22. Applicants' Exhibit No. 57;
23. Applicants' Exhibit No. 58;
24. Applicants' Exhibit No. 59; and
25. Applicants' Exhibit No. 60.

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