170

DOCKETED
USNRC

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION '86 FEB 24 A11 :43

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
Helen F. Hoyt, Chairperson
Emmeth A. Luebke
Jerry Harbour

In the Matter of	)	Docket Nos. 50-443-OL 50-444-OL
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, et al. (Seabrook Station, Units 1 and 2)	)	February 21, 1986

CONTENTION OF ATTORNEY GENERAL
FRANCIS X. BELLOTTI RELATIVE TO
EMERGENCY PLANNING FOR THE
NEW HAMPSHIRE BEACH COMMUNITIES

By Order dated January 17, 1986, the Board provided all parties an opportunity to file new contentions on redrafted emergency plans submitted to FEMA by the State of New Hampshire. We have reviewed the new plans and find that they in no way address or alleviate the concerns which prompted our earlier contention (a copy of which is attached hereto as Exhibit A) regarding the adequacy of emergency planning for Massachusetts citizens present in the New Hampshire beach communities within the EPZ at the time of an emergency. Thus,

DS03

the new plans continue to rely on evacuation and sheltering as the two possible protective actions in the event of a serious accident. See N.H. RERP, at 2.6-5. However, the plans have in no way developed the option of sheltering for the beach populations despite the severe limitations, discussed in Exhibit A hereto, on evacuation as a protective response for those persons.[1/]

While the Board's Order did not appear to require this we are, in an excess of caution, hereby refiling our earlier contention. Developments since our earlier filing provide additional bases for our contention and will be thoroughly addressed in our testimony. For example, the Applicants' own Probabilistic Safety Assessment contains release sequences which support the need for additional protective measures for the beach area populations. And, as FEMA personnel have

---

1/ The New Hampshire plan is hopelessly confusing on the question of sheltering for the beach populations, indicating on the one hand that "[s]heltering may not be considered as a protective action on the seacoast beaches during the summer" and on the other hand that "[t]ransients without access to suitable shelters will be directed . . ., if possible, to seek directions to a nearby public building from local emergency workers." See N.H. RERP, at 2.6-8. Suffice it to say it remains the case, as we stated in the bases for our contention, that

> Neither the New Hampshire Radiological Emergency Response Plan nor the local community plans contain any analysis of available public sheltering, or its capacity to accomodate the beach populations or to provide sheltering from radionuclides, or any plans for effecting such sheltering. In short, there is at present no basis for (and has not been) any development of sheltering as a potential protective action for the beach population.

Exhibit A, at 12-13.

determined, the revised New Hampshire plans fail to demonstrate that the New Hampshire EPZ communities have sufficient personnel and resources (including communications equipment) to implement the plans[2/] or that certain of the communities (including Rye[3/] and Hampton,[4/] two of the coastal towns) even intend to implement the plans. See Exhibit C hereto, a document prepared by FEMA personnel in response to these latest New Hampshire plans and entitled "Planning Milestones.")[5/]

In short, there continues to be no "reasonable assurance that adequate protective measures can and will be taken" to protect Massachusetts citizens on New Hampshire beaches at the time of an accident, as required by 10 C.F.R. § 50.47(a)(1).

2/ The plans contain no letters of agreement assuring the provision of necessary resources.

3/ According to pleadings filed with this Board by the Town of Rye, that Town has not even reviewed the plan submitted for it by the State of New Hampshire and is not committed at this time to implementing any such plan. For these reasons the Town of Rye has informed FEMA that it will not participate in an upcoming exercise of the plans and has thus far refused to authorize the installation of sirens necessary to alert the public, and particularly the beach population, in the event of an accident.

4/ On October 29, 1985, the Hampton Board of Selectmen wrote Governor Sununu (see Exhibit B hereto) indicating, inter alia, that all Town departments lack sufficient manpower to implement the plan.

5/ FEMA notes the need for contingency plans from the State of New Hampshire to cover any communities where the local governments are not committed to implementing plans and specifically criticizes the plans for their failure to address the beach populations.

For this reason we respectfully urge the Board's acceptance of our prior Contention attached hereto as Exhibit A.

Respectfully submitted,

ATTORNEY GENERAL
FRANCIS X. BELLOTTI

By: _____

Jo Ann Shotwell
Assistant Attorney General
Environmental Protection Division
Department of the Attorney General
One Ashburton Place, Room 1902
Boston, MA 02108
(617) 727-2265

DATED: February 21, 1986

EXHIBIT "A"

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
Helen F. Hoyt, Chairperson
Emmeth A. Luebke
Jerry Harbour

In the Matter of PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, et al. (Seabrook Station, Units 1 and 2)	Docket Nos. 50-443-OL 50-444-OL September 9, 1983

CONTENTION OF ATTORNEY GENERAL
FRANCIS X. BELLOTTI RELATIVE TO EMERGENCY
PLANNING FOR THE NEW HAMPSHIRE BEACH COMMUNITIES

On August 23, 1983, the Board ordered that contentions relating to off-site emergency planning for any or all of the fifteen New Hampshire communities for which draft emergency plans were recently submitted[1/] be filed on or before this date. In accordance with that order, Attorney General Bellotti hereby submits a single contention which relates to off-site

1/ The fifteen communities are Hampton, Newton, Rye, Stratham, Exeter, New Castle, North Hampton, Seabrook, Brentwood, Kensington, Newfields, Portsmouth, South Hampton, East Kingston, and Kingston.

emergency action in the coastal beach areas of Seabrook, Hampton, North Hampton, and Rye which are frequented by Massachusetts citizens.

CONTENTION:

The draft radiological emergency response plans for the Towns of Seabrook, Hampton, North Hampton, and Rye do not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the Seabrook Station, as required by 10 C.F.R. §50.47(a)(1), because in the event of a severe accident on a summer weekend some or all of the beach area transient populations within those communities cannot under many plausible meteorological conditions be protected by means of evacuation even from early death and because there are not adequate plans or provisions for sheltering the beach area transients within those communities.

BASES:

The draft emergency response plans for the Towns of Seabrook, Hampton, North Hampton, and Rye all rely on evacuation and sheltering as the two options for protecting persons present in those communities at the time of a radiological emergency at Seabrook Station which results in a radiological release to areas within those communities. See, e.g., Seabrook Plan, at II-I6 - II-I8; Rye Plan, at II-I6 - II-I8; North Hampton Plan, at II-I7 - II-20; and Hampton Plan,

at II-I7 - II-20. However, a preliminary site-specific accident consequence analysis performed for the Massachusetts Attorney General has revealed that, given the unusual circumstances associated with dense beach populations, evacuation cannot protect the transient beach area populations in the vicinity of the Seabrook site from early death in the event of a PWR 2 release as defined in the NRC's Reactor Safety Study (WASH-1400) on a summer weekend.

A Seabrook-specific accident consequence analysis is being performed for the Department of the Attorney General by Dr. Jan Beyea, a nuclear physicist with extensive experience in accident consequence modelling and analysis. (A copy of Dr. Beyea's resumé is attached hereto as Exhibit A and incorporated herein by reference.) Dr. Beyea has advised the Department that there are unique considerations involved in the modelling and analysis of accident consequences for a site such as Seabrook having a large summer beach area population which have never before been taken into account in generic or site-specific consequence studies. In addition to the obvious effects on accident consequences of the increased population and evacuation times associated with summer beach areas and the absence of shielding normally provided by buildings, there are increased consequences due to material deposited directly on the skin and hair of beachgoers and on vehicles in the plume. The former factor has received no consideration in accident

consequence analyses in the past and the latter has received inadequate consideration.

In the work which Dr. Beyea and his assistant Brian Palenik, a graduate student at the Massachusetts Institute of Technology, have performed for this Department to date they have investigated the conditions under which the nearest beach population to this site, at about two miles, might be exposed to doses at a threshold level for early death (200 rem) in the event of a PWR 2 release as defined in the Reactor Safety Study (WASH-1400). Estimates of the time within which that population would receive a 200 rem dose have been calculated for various weather stability classes and wind speeds using two sets of assumptions. The first set assumes that all persons are inside automobiles when the release occurs and receive only a fraction of the doses they would receive if they were in the open, exposed directly to a plane of contaminated ground. These results have been calculated using the assumptions which have heretofore been considered standard in accident consequence calculations. The second set of results goes beyond the standard assumptions, to account specifically for the Seabrook beach situation. Those results assume that some of the population will not have reached their vehicles before plume passage such that there will be a "skin deposition dose" and a "car deposition dose." For each of the two sets of results calculations have been performed separately for high

and low energy release rates. This division was necessary given the large uncertainty in the height to which the radioactive plume will rise, a factor which is affected by energy release rates and which is an important determinant of the doses to a nearby population.

Tables 1 and 2, which follow hereafter, contain the results of Dr. Beyea's modelling and analysis as described above. The entries in the last column of each table result from a comparison between the time required to reach a 200 rem dose and current estimates of the time required to evacuate the population within two miles on a summer weekend. See Table 3. The data set forth in these tables reveal that the summer weekend beach population within two miles of the Seabrook site cannot be protected from early death by means of evacuation under many weather conditions.

It should be noted that neither precipitation nor slow wind speeds have been considered in the analyses set forth in Tables 1 and 2. Both such conditions are more severe than those represented in the tables. The frequencies of the Pasquill stability classes reflected in Tables 1 and 2 as reported in the Applicants' ER-OL are given in Table 4. The frequencies of the A, B, and C stability classes increase during the summer months, with C the most frequent of the three. D and E are the dominant stability classes. The results discussed herein are not, therefore, based on infrequently occurring or worst-case weather conditions.

TABLE 1

PROTECTION OF CLOSEST BEACH POPULATION[a] FROM EARLY DEATH ON A SUMMER WEEKEND DAY

HIGH ENERGY RELEASE RATE[b]

Stability Class[c]	Wind Speed (m/sec)	Dose Scaling Factor[d]	Time to Reach 200 rem	Protection of Population[e]
A	2	.53-.78	14.5-20.9	Yes
A	2	1.0-1.3	9.0-11.5	Yes
A	4	.53-.78	> 24	Yes
A	4	1.0-1.3	19.2-25.0	Yes
B	2	.53-.78	4.6-6.4	No
B	2	1.0-1.3	3.2-3.8	No
B	4	.53-.78	12.2-17.8	Yes
B	4	1.0-1.3	7.6-9.6	Yes
C	2	.53-.78	2.6-3.4	No
C	2	1.0-1.3	1.9-2.2	No
C	4	.53-.78	8-11.5	Yes
C	4	1.0-1.3	5.1-6.4	No
D	2	.53-.78	> 24	Yes
D	2	1.0-1.3	> 24	Yes
D	4	.53-.78	6.5-9.2	Yes
D	4	1.0-1.3	4.2-5.3	No

a) The population two miles from the plant.
b) Assumes an energy release rate of 176×10^6 Btu/hour.
c) Pasquill stability class.
d) The dose scaling factor range of .53-.78 assumes an individual is in a car within the plume. The dose scaling factor range of 1.0-1.3 assumes an individual is in a car within the plume, with a dose component from radioactive material deposited on the car and directly on the individual.
e) Protection of the population from a 200 rem dose or higher. This assumes an evacuation time of about five and a half hours. If the evacuation time is longer, the population is not necessarily protected.

TABLE 2

PROTECTION OF CLOSEST BEACH POPULATION [a] FROM EARLY DEATH ON A SUMMER WEEKEND DAY

LOW ENERGY RELEASE RATE [b]

Stability Class [c]	Wind Speed (m/sec)	Dose Scaling Factor [d]	Time to Reach 200 rem	Protection of Population? [e]
A	2	.53-.78	13.8-19.9	Yes
A	2	1.0-1.3	8.6-10.9	Yes
A	4	.53-.78	> 24	Yes
A	4	1.0-1.3	18.4-23.7	Yes
B	2	.53-.78	3.7-4.9	No
B	2	1.0-1.3	2.5-3.0	No
B	4	.53-.78	9.9-14.2	Yes
B	4	1.0-1.3	6.2-7.8	Yes
C	2	.53-.78	< 1	No
C	2	1.0-1.3	< 1	No
C	4	.53-.78	1.7-2.2	No
C	4	1.0-1.3	1.3-1.5	No
D	2	.53-.78	< 1	No
D	2	1.0-1.3	< 1	No
D	4	.53-.78	< 1	No
D	4	1.0-1.3	< 1	No

a) The population two miles from the plant.
b) Assumes an energy release rate of 20 x 10^6 Btu/hour, or an equivalently low plume for reasons unrelated to the energy release rate.
c) Pasquill stability class.
d) The dose scaling factor range of .53-.78 assumes ar individual is in a car within the plume. The dose scaling factor range of 1.0-1.3 assumes an individual is in a car within the plume, with a dose component from radioactive material deposited on the car and directly on the individual.
e) Protection of the population from a 200 rem dose or higher. This assumes an evacuation time of about five and a half hours. If the evacuation time is longer, the population is not necessarily protected.

TABLE 3

SEABROOK EVACUATION CLEAR TIME ESTIMATES [a]
SUMMER WEEKEND/FAIR WEATHER SCENARIO

Radius	Degrees	HMM[b]	Vorhees[c]	Maguire[d]	NRC[e]
0-2	360°	4:50	5:10	5:40	---
0-3	180° E	5:20	---	---	---
0-5	360°	5:50	5:10-5:40	---	---
0-10	360°	6:05	5:10-6:10	5:50	11:25

a) Time (hours:minutes) for the population to clear the indicated area after notification.

b) Preliminary Evacuation Clear Time Estimates for Areas Near Seabrook Station, HMM Document No. C-80-024A, HMM Associates, Inc., May 20, 1980.

c) Final Report, Estimate of Evacuation Times, Alan M. Vorhees & Associates, July 1980.

d) Emergency Planning Zone Evacuation Clear Time Estimates, C.E. Maguire, Inc., February 1983.

e) An Independent Assessment of Evacuation Time Estimates for a Peak Population Scenario in the Emergency Planning Zone of the Seabrook Nuclear Power Station, M.P. Mueller, et al., Pacific Northwest Laboratory NUREG/CR-2903, PNL-4290.

TABLE 4

FREQUENCY OF PASQUILL STABILITY CLASSES AT SEABROOK [a]
(Values in % of Time)

Month	A	B	C	D	E	F	G
Apr 1979	1.27	2.11	3.80	49.65	29.40	7.88	5.91
May	1.20	2.86	4.82	52.86	26.51	5.27	6.48
June	2.92	6.69	12.26	39.83	25.49	6.13	6.69
July	4.90	6.94	11.56	29.12	28.84	12.65	5.99
Aug	2.91	4.71	9.97	43.07	26.59	7.34	5.40
Sep	1.25	7.64	11.81	30.69	27.36	10.83	10.42
Oct	0.81	2.96	5.79	39.30	34.05	10.09	7.00
Nov	0.00	0.56	4.76	43.92	34.83	9.37	6.57
Dec	0.00	0.41	2.70	47.03	41.35	5.81	2.70
Jan 1980	0.13	1.88	6.59	51.88	30.38	5.78	3.36
Feb	0.44	2.03	5.37	50.36	34.69	5.66	1.45
Mar	10.68	1.64	5.34	43.15	24.66	6.03	8.49
Yearly	2.22	3.37	7.08	43.31	30.38	7.76	5.87

a) Period of Record: April 1979 - March 1980. Stability class calculated using 43'-209' delta temperature. Source: SB 1&2, ER-OLS, Table 2.3-24.

The size of the beach area population around Seabrook is uncertain. One estimate of this population for 1980 has been made by Public Service Company of New Hampshire and is found in Table 5. Although its accuracy is uncertain, this estimate does indicate that a substantial number of people are located within two miles of the plant. The number of persons that would be located within a plume obviously varies with wind direction, but it also varies with stability class and distance from the plant. At two miles the plume could be viewed as being between a 29° wedge (A stability class) and a 13° wedge (D stability class)[2/] compared to the 22.5° population wedges in the table.

In addition to investigating the conditions under which the beach population within two miles of the Seabrook site might be exposed to early death doses, Dr. Beyea and Mr. Palenik have commenced work designed to determine the radius within which early deaths might result in the vicinity of this site assuming an accidental release on a summer weekend. Dr. Beyea has found early death radii ranging from <2 to 4.3 miles assuming a PWR 2 release as defined in the Reactor Safety Study (WASH-1400), C stability class weather conditions, an evacuation time of 5-1/2 hours, and the two sets of dose scaling factors discussed previously. For weather conditions with overcast skies (D

2/ Wedges are assumed to have plume widths equal to three times the horizontal dispersion coefficient.

TABLE 5

1980 BEACH AREA TRANSIENT POPULATION ESTIMATE [a] BY SECTOR [b]

Ring Radii (miles)	NE	ENE	E	ESE	SE	SSE
0-1	0	0	0	0	0	0
1-2	464	14,647	12,780	5,842	129	23
2-3	1,104	8,882	0	0	3,905	654
3-4	8,710	608	0	0	0	6,198
4-5	4,344	0	0	0	0	8,880
5-10	5,660	0	0	0	0	16,597

Source: Public Service of New Hampshire, Seabrook Station - Units 1 & 2, Environmental Report, Operating License Stage, Figure 2.1-19.

a) Estimate of peak transient population found by multiplying the capacity of beach area parking lots (less leased space) by 3.2 persons per vehicle, and contributions from off-street parking users, seasonal residents, and overnight visitors.
b) Each direction in the table is the centerline of a 22.5 degree wedge.

stability class), or longer evacuation times,[3/] the early death radii will be larger. And the time before doses reach 200 rem, assuming a PWR 2 release on a summer weekend evening and a low energy release rate such as that assumed in the draft Seabrook Probabilistic Risk Assessment, is less than four hours out to 6-7 miles from the site. Thus, the beach area population within 6-7 miles exposed to the plume would not be protected from early death even if there were a 20-30 percent reduction in evacuation times from daytime to evening. It should be noted in this connection that at least the Hampton Beach area has a very substantial nighttime population.

Thus, primary accident consequence data developed for this Department reveal that evacuation cannot under a number of plausible weather conditions protect the summer weekend beach area populations in the vicinity of this site from even early death. The results described herein do not account for the less severe consequences of radiation illness and delayed fatalities due to latent cancers. Despite the severe limitations on the utility of evacuation as a protective option for the transient beach population, however, there are currently no provisions for sheltering that population within the EPZ. Neither the New Hampshire Radiological Emergency

---

3/ The Applicants have now provided a 6 hours 5 minutes estimate for summer weekend simultaneous beach evacuation within ten miles of the site. See Applicants' Direct Testimony No. 1, filed July 15, 1983, at 19-20.

Response Plan nor the local community plans contain any analysis of available public sheltering, or its capacity to accommodate the beach populations or to provide shielding from radionuclides, or any plans for effecting such sheltering. In short, there is at present no basis for (and has not been) any development of sheltering as a potential protective action for the beach population.

Respectfully submitted,

FRANCIS X. BELLOTTI
ATTORNEY GENERAL

By: Jo Ann Shotwell

JO ANN SHOTWELL
Assistant Attorney General
Environmental Protection Division
One Ashburton Place
Boston, MA 02108
(617) 727-2265

"EXHIBIT A"
April 1983

EDUCATION:

Ph.D., Columbia University, 1968 (Nuclear Physics)
B. A., Amherst College, 1962

EMPLOYMENT HISTORY:

1980 to date, Senior Energy Scientist, National Audubon Society, 950 Third Avenue, New York, New York 10022.
1976 to 1980, Research Staff, Center for Energy and Environmental Studies, Princeton University.
1970 to 1976, Assistant Professor of Physics, Holy Cross College.
1968 to 1970, Research Associate, Columbia University Physics Department.

CONSULTING WORK:

Consultant on nuclear energy to the Office of Technology Assessment, the New Jersey Department of Environmental Protection; the Offices of the Attorney General in New York State and the Commonwealth of Massachusetts; the state of lower Saxony in West Germany; the Swedish Energy Commission; and various citizens' groups in the United States.

PUBLICATIONS CONCERNING ENERGY CONSERVATION AND ENERGY POLICY:

"Comments on Energy Forecasting," material submitted for the record at the Hearings before the Subcommittee on Investigations and Oversights of the Committee on Science and Technology, U. S. House of Representatives; Committee Print, June 1, 2, 1981 / No. 14 _/.

"The Audubon Energy Plan Technical Report," Peterson, Beyea, Paulson and Cutler, National Audubon Society, April 1981.

"Locating and Eliminating Obscure but Major Energy Losses in Residential Housing," Harrje, Dutt and Beyea, ASHRAE Transactions, 85, Part II (1979). Winner of ASHRAE outstanding paper award.)

"Attic Heat Loss and Conservation Policy," Dutt, Beyea, Sinden. ASME Technology and Society Division paper 78-TS-5, Houston, Texas, 1978.

"Comments on the proposed FTC trade regulation rule on labeling and advertising of thermal insulation," Jan Beyea and Gautam Dutt, testimony before the Federal Trade Commission, January 1978.

"Critical Significance of Attics and Basements in the Energy Balance of Twin Rivers Townhouses," Beyea, Dutt, Woteki, Energy and Buildings, Volume I (1977), Page 261. Also Chapter 3 of Saving Energy in the Home, Ballinger, 1978.

"The Two-Resistance Model for Attic Heat Flow: Implications for Conservation Policy," Woteki, Dutt, Beyea, Energy--the International Journal, 3, 657 (1978).

"Energy Conservation in an Old 3-Story Apartment Complex," Beyea, Harrje, Sinden, Energy Use Management, Fazzolare and Smith, Pergamon 1977, Volume I, Page 373.

"Load Shifting Techniques Using Home Appliances," Jan Beyea, Robert Weatherwax, Energy Use Management, Fazzolare and Smith, Pergamon 1978, Volume III/IV, Page 121.

PUBLICATIONS CONCERNING ENERGY RISKS:

Articles:

"Containment of a Reactor Meltdown," (with Frank von Hippel), Bulletin of the Atomic Scientists, 38, Page 52, December 1982.

"Second Thoughts (about Nuclear Safety)," in Nuclear Power: Both Sides, W. W. Norton and Co. (New York, 1982).

"Indoor Air Pollution," Commentary in the Bulletin of the Atomic Scientists, 37, Page 63, February 1981.

"Emergency Planning for Reactor Accidents," Bulletin of the Atomic Scientists, 36, Page 40, December 1980. (An earlier version of this article appeared in German as Chapter 3 in Im Ernstfall hilflos?, E. R. Koch, Fritz Vahrenholt, editors, Kiepenheuer & Witsch, Cologne, 1980.)

"Dispute at Indian Point," Bulletin of the Atomic Scientists, 36, Page 63, May 1980.

Published Debates:

The Crisis of Nuclear Energy, Subject No. 367 on William Buckley's Firing Line, P.B.S. Television. Transcript printed by Southern Educational Communications Association, 928 Woodrow Street, P. O. Box 5966, Columbia, South Carolina, 1979.

Nuclear Reactors: How Safe Are They?, panel discussion sponsored by the Academy Forum of The National Academy of Sciences, 2101 Constitution Avenue, Washington, D. C. 20418, May 5, 1980.

Reports:

"Implications for Mortality of Weakening the Clean Air Act," (with G. Steve Jordan), National Audubon Society, Environmental Policy Analysis Department Report No. 18, May 1982.

"Some Long-Term Consequences of Hypothetical Major Releases of Radioactivity to the Atmosphere from Three Mile Island," Report to the President's Council on Environmental Quality, December 1980.

"Decontamination of Krypton 85 from Three Mile Island Nuclear Plant," (with Kendall, et.al.), Report of the Union of Concerned Scientists to the Governor of Pennsylvania, May 15, 1980.

"Some Comments on Consequences of Hypothetical Reactor Accidents at the Philippines Nuclear Power Plant" (with Gordon Thompson), National Audubon Society, Environmental Policy Analysis Department Report No. 3, April 1980.

"Nuclear Reactor Accidents: The Value of Improved Containment," (with Frank von Hippel), Center for Energy and Environmental Studies Report PU/CEES 94, Princeton University, January 1980.

"The Effects of Releases to the Atmosphere of Radioactivity from Hypothetical Large-Scale Accidents at the Proposed Gorleben Waste Treatment Facility," report to the Government of lower Saxony, Federal Republic of Germany, as part of the "Gorleben International Review," February 1979.

Reports (Cont'd.):

"Reactor Safety Research at the Large Consequence End of the Risk Spectrum," presented to the Experts' Meeting on Reactor Safety Research in the Federal Republic of Germany, Bonn, September 1, 1978.

A Study of Some of the Consequences of Hypothetical Reactor Accidents at Barseback, report to the Swedish Energy Commission Stockholm, DS I 1978:5, January 1978.

Testimony:

"Some Consequences of Catastrophic Accidents at Indian Point and Their Implications for Emergency Planning," testimony and cross-examination before the Nuclear Regulatory Commission's Atomic Safety and Licensing Board, on behalf of the New York State Attorney General and others, July 1982.

"In the Matter of Application of Orange and Rockland Counties, Inc. for Conversion to Coal of Lovett Units 4 and 5," testimony and cross-examination on the health impacts of eliminating scrubbers as a requirement for conversion to coal; Department of Environmental Resources, State of New York, November 5, 1981.

"Future Prospects for Commercial Nuclear Power in the United States," before the Subcommittee on Oversight and Investigations, Committee on Interior and Insular Affairs, U. S. House of Representatives, October 23, 1981.

"Stockpiling of Potassium Iodide for the General Public as a Condition for Restart of TMI Unit No. 1," testimony and cross-examination before the Atomic Safety and Licensing Board on behalf of the Anti-Nuclear Group Representing York, April 1981.

"Advice and Recommendations Concerning Changes in Reactor Design and Safety Analysis which should be Required in Light of the Accident at Three Mile Island," statement to the Nuclear Regulatory Commission concerning the proposed rulemaking hearing on degraded cores, December 29, 1980.

"Alternatives to the Indian Point Nuclear Reactors," Statement before the Environmental Protection Committee of the New York City Council, December 14, 1979. Also before the Committee, "The Impact on New York City of Reactor Accidents at Indian Point," June 11, 1979. Also "Consequences of a Catastrophic Reactor Accident," statement to the New York City Board of Health, August 12, 1976 (with Frank von Hippel).

"Emergency Planning for a Catastrophic Reactor Accident," Testimony before the California Energy Resources and Development Commission, Emergency Response and Evacuation Plans Hearings, November 4, 1978, Page 171.

"Short-Term Effects of Catastrophic Accidents on Communities Surrounding the Sundesert Nuclear Installation," testimony before the California Energy Resources and Development Commission, December 3, 1976.

"Consequences of Catastrophic Accidents at Jamesport." Testimony before the New York State Board on Electric Generation Siting and the Environment in the Matter of Long Island Lighting Company (Jamesport Nuclear Power Station, Units 1 and 2), May 1977.

Miscellaneous:

"Comments on WASH-1400," Statement to the Subcommittee on Energy and the Environment, Oversight Hearings on Reactor Safety, June 11, 1976, Serial No. 94-61, Page 210.

"Upper Limit Calculations of Deaths from Nuclear Reactors," Bull. Am. Phys. Soc. 21, III (1976).

EXHIBIT "B"

PLANNING MILESTONES

New Hampshire

1. We have not received a complete submission of New Hampshire Plans. We understand that work is being completed on these sections:

   - Letters of Agreement, including those referenced in appendix C of the local plans. These letters, particularly for transportation, are necessary so we will know what facilities we will visit as part of the exercise. We need your proposal as to how you propose to demonstrate your exercise objectives so we can formulate our observer strategy.

   - Evacuation Time Estimate. We understand from reading the progress reports the updated ETE will require greatly increase personnel resources to staff traffic control posts.

   - A & N Design Report, as referenced in state and local plans. - needed to determine if local resources and training are sufficient to carry out all functions which may be assigned.

2. The plans do not show sufficient personnel resources at the local levels:

   - personnel for emergency positions.

   - provide for transit dependent populations as stated in the plan.

   - proper number of dosimeters for the emergency workers.

3. Contingency Plans

   - With respect to an exercise, we were informed that the following communities are not going to participate:

     - Rye
     - South Hampton
     - Hampton Falls
     - Hampton (possibly)

   - We do not have contingency plans from the State of New Hampshire which show what they plan to do in the event that local government(s) does not perform the required emergency functions in the event of an accident at Seabrook

4. The plans for those towns with a beach population and some state agencies procedures need to be revised to reflect their responsibilities to assist in protecting that population in the event of an accident.

5. Local Plans are not specific as to how they will meet the needs of the transit dependent population, including mobility-impaired and institutional populations, such as hospitals and nursing homes. We, therefore, cannot evaluate the plans. We are also concerned that the local plans are excessively cumbersome as designed.

6. Actual installation of at least minimum communications equipment.

Massachusetts

1. Formal submission of plans from Massachusetts.

EXHIBIT "C"

Town of Hampton

350th Anniversary
1638 - 1988

January 16, 1986

DOCKET NUMBER
PROPOSED RULE PR 50-443 OL
50-444 OL

Henry G. Vickers, Regional Director
Federal Emergency Management Agency
Region 1, J. W. McCormack Post Office
& Court House
Boston, MA. 02109

Dear Mr. Vickers:

The Hampton Board of Selectmen has requested in a separate letter that any public hearings held by your agency be held in the Seacoast area.

The Emergency Evacuation Plans for the Seabrook Power Station were forwarded to your agency without the approval of the Hampton Board. On a 3-1 (1 absent) vote, a letter pointing out weaknesses in the plans was sent to Governor Sununu and Richard Strome, the State Civil Defense Director, on October 29, 1985. No response was received until December 2nd and no changes in the plans were made then; the reply was simply that our concerns were not valid. We understand that the plans were forwarded to FEMA on December 9th, hardly leaving your board time for further response.

We also understand that the plans were forwarded by FEMA to the NRC on January 8th, as reviewed but not approved. The Town is very concerned as to what this transmittal means in terms of our being able to report to our citizens that we have worked to get the best evacuation plan possible.

As the plans were sent without local board's approval, we feel that they should be returned for further work and not submitted until local communities think that they are workable.

Sincerely,

FOR THE BOARD OF SELECTMEN

John R. Walker
Chairman

DRJ/cb
Encs: Copies of letter to Governor Sununu; letter from Governor Sununu; and letter from Director Strome

136 Winnacunnet Road, Hampton, New Hampshire 03842 Tel. 603-926-6766

CC: U.S. Nuclear Regulatory Commission

Town of Hampton

350th Anniversary
1638 - 1988

October 29, 1985

50-443 OL
50-444 OL

Honorable John Sununu
Governor's Office
State House
Concord, New Hampshire 03301

Dear Governor Sununu:

The undersigned members of the Hampton Board of Selectmen wish to state their reservations about the adequacy of the Radiological Emergency Response Plan. These reservations were publicly presented at a meeting of the Board on October 3, 1985, a meeting scheduled between new members of the Board and local department heads, but which was attended by officials from New Hampshire Civil Defense.

Our original questions about the plan concerned population estimates. We understand that the figure of 85,000 peak population has been revised to 110,000, a move in the right direction but still lower than traffic counts and local business figures indicate. Perhaps our best comment on the population figures is that they can only be an estimate and they will vary widely from day to day, especially on summer weekends.

Other problems remain. Very serious are the estimates of the number of personnel required to effect an orderly evacuation. Each of our department heads agreed that he lacks sufficient manpower to carry out the plan, but each has been told to request additional help from the State. Such advice appears to have been given to each town in the zone; obviously there will not be enough workers to go around. As a collary to the numbers required, there are no provisions for security for workers' homes and families nor does there seem to be provision for specialized equipment other than dosimeters. It is unclear if the count on dosimeters is a State total or a town by town total, as our radiological officer said that he could obtain all the equipment needed in a matter of a few hours. Is more protective apparatus, such as suits or gloves or breathing apparatus, needed?

Another serious consideration is the lack of communication and coordination in moving school children out of the area. On October 3 the statement was made that Civil Defense is working with school officials;

136 Winnacunnet Road, Hampton, New Hampshire 03842 Tel. 603-926-6766

our local superintendent had received a copy of the plan the previous day. There are many problems; number of buses available (for 16 towns), availability of sufficient bus drivers, traffic problems caused by parents trying to get to schools to pick up their own children, formal signed agreements with bus companies. An added problem with buses is the number of non-auto owning residents who would need transportation, and vacationers who are at the beach without automobiles.

There seem to be severe inconsistencies in the amount of warning time available to accomplish evacuation. Can communities rely on the 18-hour figure that was presented in August as the time we would have to act? The maximum figure given to move the population out (7 hours and 40 minutes) is given for a summer population on a bad weather day; may we suggest that a summer population on a very hot Sunday is likely to be larger and pose potentially more traffic problems, both with overheated cars and tempers?

We are not qualified to comment on the adequacy of most buildings on Hampton Beach for sheltering, if that should be the preferred action. Howver, the plan completely ignores that there may be thousands of beach goers clad only in bathing suits during a radiological accident.

Last and vitally important is the problem of roads leading out of Hampton. The Church Street access to Route 51 and thence to Route 101 is inadequate for the "normal" non-panicked population. Route 1 is already over-loaded with daily winter traffic. All towns in the area will rely on these routes to get to I-95; it simply cannot be done safely or quickly. Nuclear plant owners and regulators have known for over six years that evacuation plans would be necessary; during that time no seriouswork has been done on Seacoast roads nor do there seem to be plans to improve these roads significantly.

In conclusion, this plan seems to be written primarily to justify the requirement that a plan exist rather than to make a serious attempt to evacuate an endangered citizenery. We have touched on what seem to us to be primary and basic weaknesses. Added to these is the general distrust of our citizens towards the owners of the plant, occasioned by inconsistencies between promises made and results delivered during the construction process.

We would respectfully urge that you consider not approving this plan; but if you must, that you do with the understanding that you are opposing the recommendation of the majority of the Hampton Board of Selectmen. Thank you for your consideration.

Very sincerely,

John R. Walker

Ansell W. Palmer

Dona R. Janetos

cc: Richard Strome
Gerarld Coogan
William Cahill
Robert Preston
State Representatives
Area Towns

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, ET AL.
(Seabrook Station, Units 1 and 2)

Docket No.(s) 50-433/444-OL

CERTIFICATE OF SERVICE

I Jo Ann Shotwell hereby certify that on February 21, 1986 I made service of the within document by mailing copies thereof, postage prepaid, to:

* Administrative Judge
Helen Hoyt, Chairperson
Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

* Dr. Jerry Harbour
Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

* Joseph Flynn, Esq.
Assistant General Counsel
Office of General Counsel
Federal Emergency Management Agency
500 C Street, S.W.
Washington, D.C. 20472

* Docketing and Service
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

* Dr. Emmeth A. Luebke
Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

* Robert G. Perlis, Esq.
Sherwin E. Turk, Esq.
Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

* Stephen E. Merrill, Esq.
Attorney General
George Dana Bisbee, Esq.
Assistant Attorney General
Office of the Attorney General
25 Capitol Street
Concord, NH 03301

Paul A. Fritzsche, Esq.
Office of the Public Advocate
State House Station 112
Augusta, Maine 04333

* BY EXPRESS MAIL

Roberta C. Pevear
State Representative
Town of Hampton Falls
Drinkwater Road
Hampton Falls, NH 03844

Atomic Safety & Licensing
Appeal Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Atomic Safety & Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Paul McEachern, Esq.
Shaines & McEachern
25 Maplewood Avenue
P.O. Box 360
Portsmouth, NH 03801

Ms. Sandra Gavutis
The Town of Kensington
RFD 1
E. Kingston, NH 03827

Senator Gordon J. Humphrey
U.S. Senate
Washington, D.C. 20510
(Attn: Tom Burack)

Senator Gordon J. Humphrey
1 Pillsbury Street
Concord, NH 03301
(Attn: Herb Boynton)

Mr. Donald E. Chick
Town Manager
Town of Exeter
10 Front Street
Exeter, NH 03833

Brentwood Board of Selectmen
RFD Dalton Road
Brentwood, NH 03833

Ms. Diana P. Randall
70 Collins Street
Seabrook, New Hampshire 03874

Robert A. Backus, Esq.
Backus, Meyer & Solomon
116 Lowell Street
P.O. Box 516
Manchester, NH 03106

Jane Doughty
Seacoast Anti-Pollution League
5 Market Street
Portsmouth, NH 03801

Maynard L. Young, Chairman
Board of Selectmen
10 Central Road
Rye, New Hampshire 03870

Mr. Calvin A. Canney
City Manager
City Hall
126 Daniel Street
Portsmouth, New Hampshire 03801

Mr. Angelo Machiros
Chairman of the
Board of Selectmen
25 High Street
Newbury, Massachusetts 01950

Mr. Peter J. Matthews
Mayor
City Hall
Newburyport, MA 01950

Town Manager's Office
Town Hall
Friend Street
Amesbury, MA 01913

Gary W. Holmes, Esq.
Holmes & Ellis
47 Winnacunnet Road
Hampton, NH 03841

Philip Ahrens, Esq.
Assistant Attorney General
Department of the Attorney General
State House Station #6
Augusta, Maine 04333

Diane Curran, Esq.
Harmon & Weiss
2001 S Street, N.W.
Washington, D.C. 20009

** Thomas G. Dignan, Esq.
R.K. Gad III, Esq.
Ropes & Gray
225 Franklin Street
Boston, MA 02110

* Richard A. Hampe, Esq.
Hampe & McNicholas
35 Pleasant Street
Concord, NH 03301

Beverly Hollingworth
209 Winnacunnet Road
Hampton, NH 03842

* Edward A. Thomas
Federal Emergency Management Agency
442 J.W. McCormack (POCH)
Boston, MA 02109

William Armstrong
Civil Defense Director
Town of Exeter
10 Front Street
Exeter, NH 03833

Michael Santosuosso, Chairman
Board of Selectmen
South Hampton, NH 03827

Stanley W. Knowles, Chairman
Board of Selectmen
P.O. Box 710
North Hampton, NH 03862

Mrs. Anne E. Goodman, Chairperson
Board of Selectmen
13-15 Newmarket Road
Durham, NH 03824

Allen Lampert
Civil Defense Director
Town of Brentwood
20 Franklin Street
Exeter, NH 03833

Jo Ann Shotwell
Assistant Attorney General

* BY EXPRESS MAIL

** BY HAND