

Duxbury Nuclear Advisory Committee  
Town Hall, Duxbury, Massachusetts 02332  
September 29, 1992

Dear Secretary Chilk,

**RE: Emergency Planning- Protective Clothing & Breathing Apparatus for Harbormaster + Staff**

(Note: the use of the term "protective clothing" is in the most general, "layman sense" and does not mean the "spacesuit" PC's used by nuclear workers in commercial nuclear power plants)

#### **Emergency Planning--Radiological**

The Duxbury Nuclear Advisory Committee is in the process of reviewing the Implementing Procedures for an Emergency at the Pilgrim Nuclear Power Station. These procedures are developed by the utility, and are then reviewed by our committee, the appropriate town department heads and the town civil defense director, who then make recommendations to the town selectmen. The selectmen approve or recommend appropriate changes in the plan, and their comments are sent on to the Massachusetts Emergency Management Agency, FEMA and the NRC.

#### **Harbormaster and Beach Personnel---Protective Clothing**

One planning issue involves the Duxbury Harbormaster and other personnel who, in the event of a radiological emergency are expected to notify the public and assist them in finding shelter or evacuating. These personnel will be outside, during the emergency, until all necessary notification and/or transportation assistance has been accomplished.

A particular question has arisen--Do these personnel need protective clothing and special breathing apparatus?

The Duxbury Harbormaster, Duxbury Nuclear Advisory Committee, and the Duxbury Board of Selectmen, say, "yes". The Duxbury Board of Selectmen, at their May 4, 1992 meeting voted unanimously to request from Boston Edison protective clothing and breathing apparatus for the Harbormaster and his staff. This amounted to twelve people that would need a set of foul weather gear and a full face respirator. A formal request was made to Boston Edison on July 10, 1992.

The request was denied by BECo, August 6, 1992, in a letter to the Duxbury Civil Defense Director which stated,

"On this matter we must defer to the position of the Massachusetts Department of Public Health as stated in a letter ... from the Director of the Radiation Control Program of the Commonwealth of Massachusetts, Mr. Robert Hallisey, dated March 13, 1991. In this letter, Mr. Hallisey addressed Duxbury's concern with the determination that protective clothing and/or breathing apparatus would be of very limited value. We agree with the position expressed by MDPH and must decline your request for assistance in this matter."

#### Who Should Be Responsible?

The NRC Task Force (Findings on Issues of Offsite Emergency Preparedness for Pilgrim Nuclear Power Station, 1991) said that this issue should be resolved by the Massachusetts Department of Public Health. Boston Edison also stated in a letter to the Duxbury Civil Defense Director dated August 6, 1992, that MDPH is the agency to develop protective action policy in this matter and Boston Edison's role is to "assist ...with the implementation of their policies".

However, it appears the wrong Bureau of the Massachusetts Department of Public Health was given the responsibility; and herein lies the problem.

The question - whether any protective clothing or breathing apparatus is required at all - requires an assessment of the health impact of the release of radiation into the environment. The question should have been directed to, and the response provided by, the Bureau of Environmental Health Assessment at MDPH, directed by Suzanne Condon.

Instead, Robert Hallisey, Director of the Radiation Control program in the Bureau of Environmental Monitoring at MDPH responded. Mr. Hallisey's "world" is oriented towards chemistry and engineering. His technical staff goes out and measures pollutants, and assesses the shielding capabilities of certain barriers. Presumably, his staff would appropriately answer the question of which breathing apparatus would provide the best protection. However, he and his staff do not have the expertise required to answer the question whether any breathing apparatus was needed in the first place.

Hopefully, this issue will be ironed out and the proper bureaus at MDPH will be asked to respond to the portions of these public policy issues that they are trained to address. In the meantime, we have a problem.

The DPH "resolution" (which is on the "books" and is the "reason" BECO gives for its refusal to provide the protective clothing requested by the town of Duxbury) seems to raise far more questions than it answers; and, we hope you can provide us assistance in analyzing this problem. If the proper health professionals address the issues raised by Robert Hallisey's March 13, 1991 response, we will be on our way to resolving this important public health issue.

#### Mr Hallisey's Response

In a March 13, 1991 letter to the Duxbury Civil Defense Director, a copy of the pertinent page of which is attached, Mr. Robert Hallisey, the Director of the Radiation Control Program of the Massachusetts Department of Public Health, said that there was "no need for protective clothing and breathing apparatus" since the "goal in emergency planning is to avoid any unnecessary radiation exposure to individuals in the event of an accident."

On the other hand, the Harbormaster appeared before our committee in October, 1991 and said without protective equipment neither he nor his assistants could safely perform their functions. He pointed out that these functions included notification of boaters in Duxbury and Plymouth Bays (which, as shown on the enclosed map are directly in front of the Pilgrim Plant), residents of Clarks Island (5 miles from the plant), and beachgoers (5 to 7 miles from the plant). He also noted that these tasks are to be largely performed in an open boat. Further, his situation was somewhat unique; he and his personnel were the only emergency workers required to head south, towards the Pilgrim Nuclear Power Plant, while at the same time, the rest of the population was being instructed to evacuate in precisely the opposite direction.

The NRC's position that the harbormaster can safely perform his tasks without protective equipment is internally inconsistent. The NRC Task Force on Emergency Preparedness concluded that "the preferred protective action for the emergency workers would be evacuation rather than having the don breathing apparatus". But it also said that the



Harbormaster and his personnel would "determine the required assistance to the residents of Clarks Island including ad hoc measures if necessary", and if the Harbormaster is evacuated there is no one else available to perform his functions.

Mr. Hallisey's major "solution" to this assertion is that "the most probable occurring time frames are expected to allow ample preparation and evacuation if a radiological release is expected". In other words, Mr. Hallisey hopes to know about an accident long enough before it happens so that the harbormaster and his personnel can warn and evacuate everyone before there is any real danger.

Emergency planning should not rest on such a "best case" analysis. This is particularly true here since, according to JREG 0654, a boiling water reactor has a potential for a release in 0 to 30 minutes. However, just as it would be wrong to plan only for "best case" accident scenarios as Mr. Hallisey did; it would be as wrong to plan only for "worst case" scenarios. Logic dictates planning for a reasonable "middle ground".

Mr. Hallisey's statements that "assuming a fast-breaking accident occurred":

a. "the release would be principally noble gases with possibly very low amounts of iodine and particulates";

b. "there would be a time delay, depending upon wind speed before this gaseous plume reached Duxbury"; and,

c. "the exposure of concern would be whole body gamma doses, and thus protective clothing and breathing apparatus would be of very limited value"

appear to us to be internally inconsistent, apparently defying common sense, and generally puzzling. They also raise a number of questions. for example:

a. Is Mr. Hallisey correct in his assumption that "noble gases" are apparently not important?

b. Is it realistic to assume that, at most, there will "possibly" be "very low amounts of iodine and particulates?"

c. Given the distances involved, and particularly if you take into account the on-shore wind that occurs much of

the time, is the "time delay" between release and when "this gaseous plume reaches Duxbury" long enough for the unprotected Harbormaster to do his job? It is not unusual for the area to experience 20 mile an hour winds in a non-storm weather pattern. Clark's Island, a responsibility of the Duxbury Harbormaster, is 5 miles from the Pilgrim Nuclear Power Plant.

d. Under what conditions will the "exposure of concern" be only "whole body gamma dose"?

e. Is it not likely that alpha and beta particles would be emitted during an accident? Is it true that they cause their biological damage through inhalation and ingestion? Accidents happen; and, by definition, provide the unexpected. The resin spill at Pilgrim in 1982 was not expected.

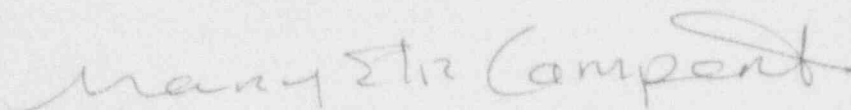
f. Given all of this, is it really fair (particularly to the Harbormaster and his personnel) to conclude that "protective clothing and breathing apparatus would be of very limited value"?

If you have comments on the issue in general, and Mr. Hallisey's statements in particular, that would assist us in evaluating the need for "protective clothing and breathing apparatus", the Committee would greatly appreciate your forwarding them to me, or simply giving me a call:

Mary Elizabeth Lampert  
148 Washington Street  
Duxbury, MA 02332  
(617) 934-0389

We thank you for your time and efforts on behalf of the "ordinary citizens" who are forced to function in today's scientific and technologically oriented society without the necessary scientific expertise. We depend on scientists, like you, who are willing to help the public.

Sincerely yours,



Mary Elizabeth Lampert

cc:

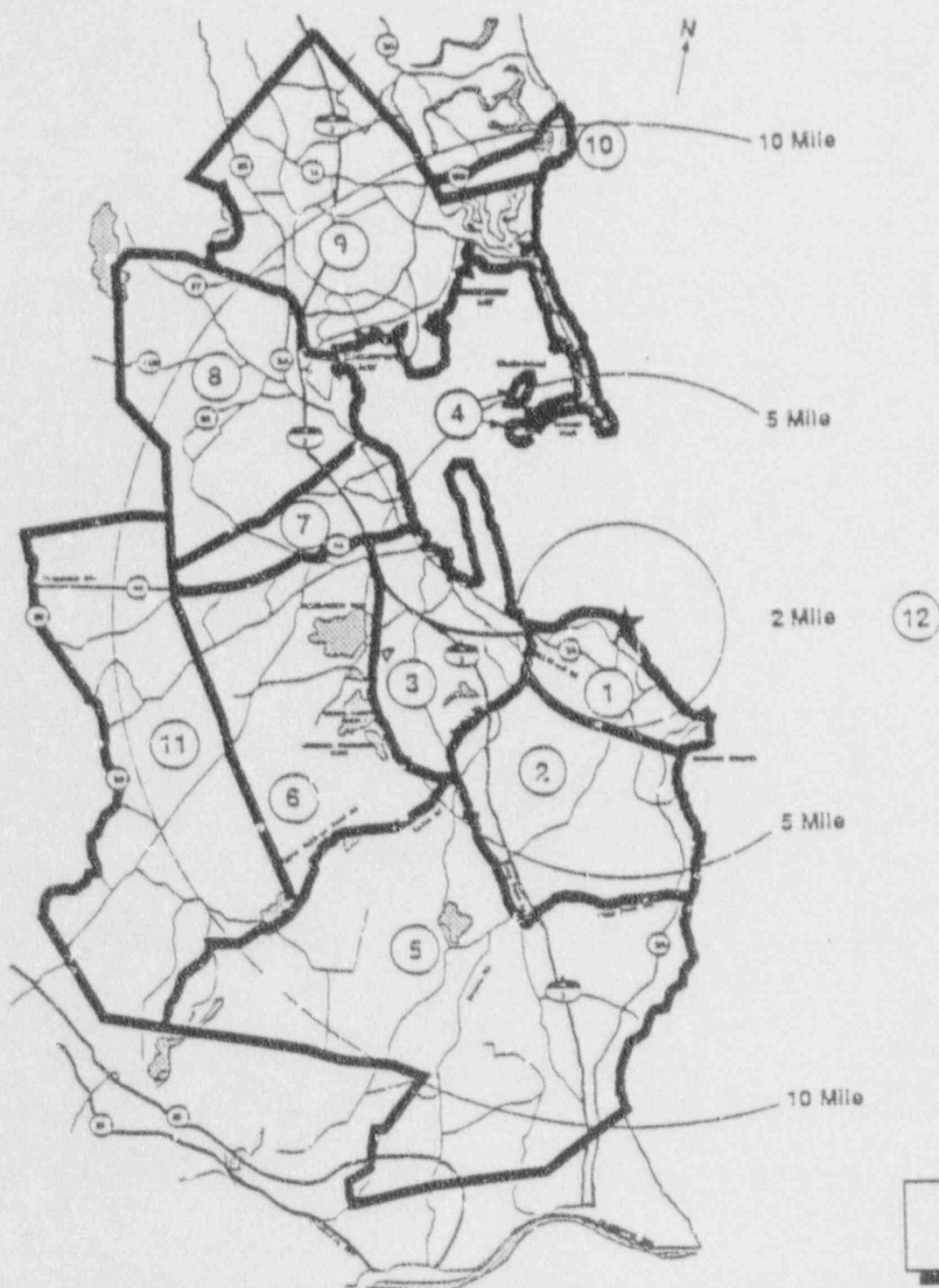
Secretary Samuel Chilk, NRC, Washington DC 20555  
Senator Edward Kennedy  
Senator John Kerry  
Representative Gerry Studds  
Senator Edward Kirby  
Chairman Carmen Buell  
OSHA  
Selectmen Towns of: Duxbury, Kingston, Plymouth  
Duxbury Civil Defense Director  
Duxbury Harbor Master  
Center for Atomic Radiation Studies  
Childhood Cancer Research Institute  
C-10, Newburyport  
Citizens Awareness Network-Rowe  
MassPirg  
Dr. Douglas Crawford-Brown  
Dr. Richard Clapp  
Dr. Sidney Cobb  
Dr. Robert Goble  
Dr. Karl Kelsey  
Dr. Tony Robbins  
Dr. Gregg Wilkinson  
Dr. Thomas Winters



# Emergency Response Review

## Plume Exposure Pathway

10 Mile EPZ





*The Commonwealth of Massachusetts*  
*Executive Office of Health and Human Services*  
*Department of Public Health*  
*150 Tremont Street*  
*Boston 02111*

William F. Weld  
Governor  
David P. Forsberg  
Secretary  
David H. Mulligan  
Commissioner

March 13, 1991

Carl D. O'Neil, Chief/  
Civil Defense Director  
Duxbury Fire Department  
P.O. Box 11  
Duxbury, MA 02331

Dear Chief O'Neil: *Carl*

The following is in response to your letter of January 4, 1991, to me, as well as your letter of January 11, 1991, to John Lovering concerning emergency planning issues for the Town of Duxbury. I sincerely apologize for the delay in responding to these letters; however, I was under the mistaken impression that you had been contacted directly concerning these issues.

I would like to first respond to the two issues in your January 4, 1991, letter to me and then address the three issues raised in your January 11, 1991, letter to John Lovering of the M.C.D.A., as follows:

1. Protective Clothing for Personnel

We do not believe that there is a need for protective clothing and breathing apparatus for the harbor master and conservation administrator. Our goal in emergency planning is to avoid any unnecessary radiation exposure to individuals in the event of an accident. In this respect, the most probable occurring time frames are expected to allow ample time for preparation and evacuation if a radiological release is expected. However, assuming a fast-breaking accident occurred, the release would be principally noble gases with possibly very very low amounts of iodine and particulates. Also, there would be a time delay, depending upon wind speed, before this gaseous plume reached Duxbury. This means the exposure of concern would be whole body gamma dose, and thus protective clothing and breathing apparatus would be of very limited value.





# DUXBURY CIVIL DEFENSE **RECEIVED**



Post Office Box 1153  
DUXBURY, MASSACHUSETTS 02331

JUL 13 1992

TEL. 617-934-7159  
FAX 617-934-6530

TOWN OF DUXBURY  
TOWN MANAGER

July 10, 1992

Mr. Ronald A. Varley, Manager  
Emergency Preparedness  
118 Long Pond Road  
Plymouth, MA 02360

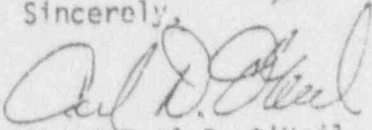
Dear Mr. Varley:

The Duxbury Board of Selectmen, at their May 4, 1992 meeting, voted unanimously to request from BECo protective clothing and breathing apparatus for the Harbormaster and his staff. This amounts to twelve people that would need a full set of foul weather gear and a full face respirator for each emergency worker.

I request that Boston Edison Company provide (12) full sets of foul weather gear acceptable to the Harbormaster and (12) full face respirators (Wilson 6000 Series equivalent) with appropriate filter cartridges. This equipment is being requested to provide these emergency workers some protection from radioactive contamination since they may be required to perform emergency work in areas where no shelters are available in a reasonable period of time, should sheltering or evacuation be required.

Your prompt attention to this request is needed since these workers are presently working in remote areas each day. Please contact me if you need more information or have any questions.

Sincerely,

  
Chief Carl D. O'Neil  
Civil Defense Director

CON/km

cc: Mr. Thomas J. Groux,  
Town Manager

Mr. Alfred Slaney  
Regional Planner, NEHA

Mr. Donald Beers  
Harbormaster

cc. BOS  
file

  
**BOSTON EDISON**  
118 Long Pond Road  
Plymouth, Massachusetts 02360

RECEIVED

AUG 12 1992

TOWN OF DUXBURY  
BOARD OF SELECTMEN

Emergency Preparedness Department

August 6, 1992  
EP92-324

Mr. Carl D. O'Neil  
Civil Defense Director  
P.O. Box 1153  
Duxbury, MA 02331

Dear Mr. O'Neil:

We have received your request for respiratory protection equipment and protective clothing for the Harbormaster and his staff.

With respect to this issue it is important to bear in mind that the Massachusetts Department of Public Health along with the Massachusetts Emergency Management Agency are the agencies who establish protective action policies for the Commonwealth. Boston Edison's role is to assist these agencies with the implementation of their policies.

On this matter we must defer to the position of the Massachusetts Department of Public Health as stated in a letter sent to you from the Director of the Radiation Control Program of the Commonwealth of Massachusetts, Mr. Robert Hallisey, dated March 13, 1991. In his letter, Mr. Hallisey addressed Duxbury's concern with the determination that protective clothing and/or breathing apparatus would be of very limited value. We agree with the position expressed by MDPH and must decline your request for assistance on this matter.

In a separate but related matter, future requests for equipment support should follow the guidelines outlined in Administrative Procedure AP-06, "Equipment Maintenance Program", for the Town of Duxbury. This procedure describes the mechanism the Town is to use for requests for new equipment. The process within this administrative procedure allows for Boston Edison and the town to quickly review and respond to Agency/Selectmen requests.

Mr. Carl O'Neil  
EP92-324  
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As stated earlier, if there is a need for further information regarding the protective clothing issue, please contact the Massachusetts Department of Public Health or the Massachusetts Emergency Management Agency.

Sincerely,



Ronald A Varley  
Manager, Emergency Preparedness

BY/jlm

cc: Abdule C. Hamadeh, Chairman Board of Selectmen ✓  
Tom Groux, Town Manager  
Donald Beers, Duxbury Harbormaster  
Robert Hallisey, Director Radiation Control Program  
Richard Strome, Regional Director FEMA  
A. David Rodham, Director MEMA  
Alfred Slaney, Regional Planner, MEMA  
Ron Markovich, BECo Offsite Division Manager  
Richard Finn, BECo Sr. Community Representative  
Barney Yetman, BECo Community Representative  
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