

March 15, 1994

The Honorable John F. Kerry  
United States Senator  
One Bowdoin Square  
Tenth Floor  
Boston, Massachusetts 02114

Dear Senator Kerry:

In response to the letter you sent to Chairman Selin on February 15, 1994, please find the enclosed letter dated January 27, 1994, to Ms. Lampert regarding the possible dredging of the Pilgrim Nuclear Power Station intake canal and disposal of the sand at sea.

Should the Boston Edison Company decide to dispose of any radioactive material at a location other than a licensed low-level radioactive-waste disposal site, the U.S. Nuclear Regulatory Commission would evaluate the proposal consistent with appropriate regulations and agreements. Massachusetts is not an Agreement State at this time.

I hope this response satisfies the concerns of your constituent.

Sincerely,

Original signed by  
James M. Taylor

James M. Taylor  
Executive Director  
for Operations

Enclosure:

As stated

\*Previously concurred

OFFICE	PDI-3:PM	PDI-3:LA	PDI-3:D	*Tech ED	*ADRI
NAME	REaton:dt	SLittle	WButler	RSanders	JCalvo
DATE	3/8/94	3/8/94	3/8/94	02/28/94	03/01/94
OFFICE	*DRPE:D	*ADP: (A)	NRR:D	EDO	
NAME	SVarga	LReyes	WRussell	JTaylor	
DATE	03/01/94	03/02/94	3/9/94	3/14/94	

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3/24/94

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Docket File (50-293) w/incoming  
NRC & Local PDRs (w/incoming)  
EDO# 0009804  
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UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 WASHINGTON, D.C. 20555-0001

January 27, 1994

Ms. Mary Elizabeth Lampert, Chair  
 Duxbury Nuclear Advisory Committee  
 148 Washington Street  
 Duxbury, Massachusetts 02332

Dear Ms. Lampert:

Enclosed is our response to the questions you sent us in your letter dated December 1, 1993, regarding the Pilgrim Nuclear Power Station. These questions were based on a news article in the Duxbury Reporter. It is my understanding that the Duxbury Supervisors received a briefing from the Boston Edison Company (BECO) on January 3, 1994, on their progress in securing a dredging permit from the Army Corps of Engineers.

The U.S. Nuclear Regulatory Commission (NRC) has not been involved in the early activities relative to the issuance of a permit to BECO for the dredging planned for 1995 or beyond. We are aware that BECO is seeking the required permits from the appropriate Federal agencies. It is our understanding that the actions being considered by BECO are preliminary at this time. If BECO decides to dispose of material that contains radioactive material at any location other than a licensed low level radioactive waste disposal site, it must submit a request for approval to the NRC since it is not located in an Agreement State. At that time, the NRC would evaluate the proposal considering potential impact to the public and the environmental and other regulations and agreements. If BECO requests approval to dispose of such material offsite, the NRC would publish a notice in the Federal Register to solicit comments from the public.

Sincerely,

*Thomas E. Murley*  
 Thomas E. Murley, Director  
 Office of Nuclear Reactor Regulation

Enclosure:  
 As stated

~~9402030206~~ 5pp.

## QUESTIONS ABOUT CONTAMINATED SAND AT THE PILGRIM NUCLEAR POWER STATION

1. Who determined that the sand contained "minute" quantities of radioactive material and what is the basis?

Answer: The Boston Edison Company (the licensee) made the determination that the sand contained minute quantities of radioactive material. The basis for this characterization appears to be the sampling and analysis program undertaken by the licensee for this material. Two of the 14 samples showed detectable concentrations of cobalt-60, a radionuclide that is present in liquid effluents from the Pilgrim plant. The analysis used to determine the level of radioactive material in these two samples was more sensitive than is required by the licensee's technical specifications for analyzing environmental samples.

These results are of little radiological significance. The Final Environmental Statement related to operation of the Pilgrim Nuclear Power Station (FES-OL), published in May 1972 by the U.S. Atomic Energy Commission, examined radiation doses to members of the public who might come in contact with water-borne effluent radionuclides that could accumulate in the sediments near the plant. The FES-OL estimated, for example, that individuals fishing in the discharge canal of the Pilgrim plant for 500 hours per year would receive a dose of about 0.004 millirem per year. We believe that any radiation doses to members of the public which may be associated with radioactive materials detected in the recent sampling of the intake canal would be smaller than the 0.004 millirem value presented in the FES-OL. This value is well within the 3-15 mrem per year design objectives of Title 10 of the Code of Federal Regulations (10 CFR) Part 50 that the licensee must meet. For perspective, the average radiation dose that U.S. citizens receive each year from natural background radiation (including radon) is 300 millirem.

2. Who performed the analysis of the sand?

Answer: The licensee performed the laboratory analysis of the sand using an approved station procedure.

3. Were other radioactive contaminants identified?

Answer: Yes. The analysis also identified K-40, Cs-137, and Uranium/Thorium and their associated daughter decay products. It should be noted that K-40 and Uranium/Thorium are found naturally in the environment and that Cs-137 also exists in the environment as a product of atmospheric atomic weapons testing. Additionally, in the FES-OL, it was recognized that radioactive material would be discharged into the environment from operation of the plant. The report cites

anticipated annual releases of Co-60 and Cs-137 in the amounts of 1.1 and 0.36 curies, respectively, based on full-power operation. As such, it is reasonable to expect that radioactive material would occasionally be detected in and around the plant's environment.

4. What are the rules and regulations relating to release of radioactive material in plant effluents.

Answer: There are numerous regulations and additional controls imposed by rules that require a licensee to monitor and control the release of radioactive material in plant effluents and to monitor the environment for radioactivity. These are listed below.

- 10 CFR 20.1302(b) Limits the concentration of radioactive material in dispersed effluents to the annual average concentrations in Appendix B.
- 10 CFR 20.1301(d) Incorporates EPA environmental radiation standards (25 mrem/yr) into 10 CFR Part 20.
- 10 CFR 50.34a and 10 CFR 50.36a Sets design objectives and technical specification requirements for effluents.
- General Design Criterion 64 Monitoring radioactivity releases.
- Appendix I As low as reasonably achievable (ALARA) design objectives (3-15 mrem/yr) for gaseous and liquid effluents (10 CFR Part 50, Appendix I).

In addition to the regulations, licensed power reactors have technical specifications (license conditions) for effluent and environmental monitoring. These specifications require a licensee to have programs that limit effluent releases and a radiological environmental monitoring program to determine the impact of plant operation on the environment.

WACT B

**ACTION**

EDO Principal Correspondence Control

FROM: DUE: 03/08/94 EDO CONTROL: 0009804  
DOC DT: 02/15/94  
FINAL REPLY:

Sen. John F. Kerry

TO:

Chairman Selin

FOR SIGNATURE OF : \*\* GRN \*\* CRC NO: 94-0173

Executive Director

DESC:

ROUTING:

ENCLOSES LETTER FROM MARY ELIZABETH LAMPERT,  
DUXBURY NUCLEAR ADVISORY COMMITTEE RE DISPOSAL OF  
RADIOACTIVE CONTAMINATED SAND FROM THE PILGRIM  
NUCLEAR POWER STATION

Taylor  
Milhoan  
Thompson  
Blaha  
Martin, RI  
Bernero, NMSS  
Cyr, OGC

DATE: 02/25/94

ASSIGNED TO: CONTACT:

NRR Murley

SPECIAL INSTRUCTIONS OR REMARKS:

Ref. EDO 9591

NRR RECEIVED: FEBRUARY 25, 1994  
NRR ACTION: ~~DRPE:VARGA~~

NRR ROUTING:  
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WR  
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FG  
MAIL ROOM

**ACTION**  
DUE TO NRR DIRECTOR'S OFFICE  
BY Barch 3, 1994

