

SEP 12 1988

The Honorable Nicholas J. Costello
Commonwealth of Massachusetts Senate
Joint Committee on Energy
State House, Room 540
Boston, Massachusetts 02133

The Honorable Lawrence R. Alexander
Commonwealth of Massachusetts House
of Representatives
Joint Committee on Energy
State House, Room 540
Boston, Massachusetts 02133

Dear Messrs. Costello and Alexander:

This letter is in response to your letter to me dated July 25, 1988. In that letter you asked several questions regarding Pilgrim Nuclear Power Station and their storage of radioactively contaminated soil onsite. You also expressed concern about potential dumping of radioactive material in a lay-down area offsite.

In preparation for restart of the facility, the NRC is performing inspections in all areas of our regulatory jurisdiction. Included is the contaminated dirt pile onsite. During the period of August 18-20, 1988, the NRC performed independent measurements of samples of the dirt pile and of the lay-down area at the station with our mobile laboratory. The results of that inspection are in the attached Inspection Report No. 50-293/88-29. Also attached as Enclosure 1 are answers to your specific questions.

While the radioactivity measured in the dirt pile is low and does not pose a threat to public health and safety, we are concerned that the licensee has not taken adequate measures to ensure that wind erosion does not take place. We are currently pursuing a resolution of this problem with the licensee. No radioactivity was detected in the off-site lay-down area mentioned in your letter.

Thank you for your concerns. Please do not hesitate to contact us if you have further questions.

Sincerely,

Original Signed By
WILLIAM T. RUSSELL

William T. Russell
Regional Administrator

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Enclosures:

1. Detailed Responses to Costello/Alexander Letter of July 25, 1988
2. NRC Inspection Report No. 50-293/88-29
3. NRC Inspection Report No. 50-293/82-20
4. NRC Inspection Report No. 50-293/81-04

cc w/encl:

K. Highfill, Station Director
R. Anderson, Plant Manager
J. Keyes, Licensing Division Manager
E. Robinson, Nuclear Information Manager
R. Swanson, Nuclear Engineering Department Manager
The Honorable Edward J. Markey
The Honorable Edward P. Kirby
The Honorable Peter V. Forman
B. McIntyre, Chairman, Department of Public Utilities
Chairman, Plymouth Board of Selectmen
Chairman, Duxbury Board of Selectmen
Plymouth Civil Defense Director
P. Agnes, Assistant Secretary of Public Safety, Commonwealth of Massachusetts
S. Pollard, Massachusetts Secretary of Energy Resources
R. Shimshak, MASSPIRG
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
Commonwealth of Massachusetts (2)

bcc w/encl:

Region I Docket Room (with concurrences)
R. Blough, DRP
L. Doerflein, DRP
D. McDonald, PM, NRR
R. Bores, DRSS
S. Collins, DRP

<i>W</i> WPasciak DRSS 9/8/88	<i>mb</i> RBellamy FRSSB 9/8/88	<i>SE</i> SEbnetter DRSS 9/9/88	<i>MM</i> MMiller SLO 9/9/88	<i>JAN</i> JANan JRE 9/10/88	<i>WR</i> WRussell RA 9/1/88	<i>R</i> R. Blough 9/9/88
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DETAILED RESPONSES TO COSTELLO/ALEXANDER LETTER OF 7/25/88

Question 1:

How much radioactivity is in the 110,000 cubic foot pile of dirt? What measurements were made, when were the measurements made, where were samples taken from, and how were they analyzed? Has there been any additional material added to the site since measurements and samples were taken?

Answer:

The best estimate of the volume of the pile of dirt is 65,000 cubic feet. During early August, 1988, the pile was moved to an area where erosion could be better controlled and to increase the distance from the wetlands. Its volume was determined based on the number of truckloads and the capacity of the trucks needed for the move. Measurements were made by NRC of 30 samples taken from the pile (see NRC Inspection Report 88-29). Based on these measurements, it is estimated that the dirt pile contains 0.004 Curies of Co-60. There are other radionuclides in the pile that were measured that are naturally occurring but are due to fallout and not from releases from the reactor. During the movement of the dirt, the licensee collected about 5 to 6 samples per truckload (140 truckloads) for future analysis. The measurements made by NRC were made using the NRC Mobile Radioanalytical Measurements Laboratory at the Pilgrim site. They were analyzed using our low-background germanium detector which is calibration traceable to the National Bureau of Standards. The inspection report indicates from what truckloads NRC samples were collected. As of the time of NRC Inspection 88-29, the licensee was planning to add a small increment of sediment to the pile. The sediment consisted of approximately 3800 cubic feet of silt from the intake structure. The licensee stated that measurements had been made of this sediment and found that concentrations ranged from 10 to 60 pCi/kg of Co-60 (1 nCi = 0.000000000001 Curies).

Question 2:

Which "small spills of contaminated liquid and resin...during the last 15 years" is Mr. Bird referring to in his letter of February 4, 1988 (enclosed) to Mr. Hallisey? What amounts of radiation were in each spill and when did each spill occur? Are the original test results still available?

Answer:

Two of the most recent spills occurred in 1981 and 1982. These are probably being referred to by Mr. Bird, in addition to some earlier spills. Both of these most recent occurrences were investigated by NRC inspectors. The inspection reports are attached. For information on other spills than those described in these inspection reports, you should contact the licensee directly.

1982 contaminated resin beads were being spewed out of the main stack to the turbine and reactor building and ground vicinity. This occurred because of a breakdown of a filter. Modifications were made to the plant to prohibit this from happening in the future. This is described in more detail in enclosed NRC Inspection Report No. 50-293/82-20.

- * in early 1981, a contaminated resin spill occurred from a fill valve near the old administration building. Details regarding this event are described in enclosed NRC Inspection Report No. 50-293/81-04.

For more specific information regarding what Mr. Bird is referring to, you should contact him directly.

Question 3:

Has the dirt been protected from rain and wind? If so, what manner of protection has been used?

Answer:

The licensee had made some attempts to protect the dirt from wind and rain. Plastic has been placed over the dirt to protect it from wind and rain erosion, and when it was recently moved it was placed on top of plastic. During the NRC Inspection No. 88-29, it was observed that much of the plastic had fallen off or had been blown off the piles. Hay bales had been placed all around the pile and it appeared that they would effectively contain small amounts of rain forced erosion of the piles. Also, an eight foot fence encircled the entire area with plastic sheet attached to the fence, somewhat controlling wind erosion. Either under heavy rain or strong wind conditions, it is not likely that the licensee's current methods would control erosion.

Question 4:

How much radiation is in the fill dirt, asphalt and concrete that filled a gully in the "lay down" area off the Pilgrim access road? When and where did this fill come from? How much fill has been dumped here since the plant opened?

Answer:

Several licensee representatives were asked these questions during NRC Inspection No. 88-29. One of them thought that contaminated materials were ever deposited in the subject lay down area. As a result of a recent allegation, the licensee performed some limited surface sampling of the area and found no reactor associated radioactivity. During Inspection 88-29, NRC collected seven core samples from dirt and asphalt piles scattered about the area and found less than MDA (MDA: lowest level the instrument can detect) quantities. According to one licensee representative, during plant construction this area was set up with a small concrete plant which was dismantled after the station was completed. The area is currently used as a dump for

non-contaminated natural materials and stable fill such as sand, asphalt, concrete, bushes, etc. No licensee representatives that were questioned on this area during the 88-29 inspection knew of detailed records describing when, how much, and what type of materials were dumped there, and none knew of dumping of contaminated materials.

Question 5:

Have there been any efforts to measure leachate from the contaminated dirt pile of the "lay down" area?

Answer:

The licensee has wells around the PNPS site for sampling of groundwater. Measurement of groundwater samples from these wells has not detected Co-60 contamination. No wells have been placed around the lay down area as it is not used for storage or disposal of contaminated materials.

Question 5:

Does Yankee Atomic have comparable storage piles of radioactively contaminated debris onsite?

Answer:

There are no comparable storage piles of radioactively contaminated debris onsite

Question 7:

Are small spills of contaminated liquid and resins inevitable in nuclear power plant operations?

Answer:

Small spills occur from time to time at nuclear power facilities, but usually occur inside buildings in radiation controlled areas where they are easily dealt with and pose no risk to the public. Very infrequently spills will occur outside buildings and result in site contamination such as has occurred at Pilgrim. Even at Pilgrim where several small spills and inadvertent releases of radioactivity have occurred over the years, the risk to the public, even those individuals residing close to the plant, has been negligible.

Question 8:

How much radioactively contaminated debris is a licensee allowed to store onsite by the NRC? Is Boston Edison in compliance with current NRC waste disposal standards? If so, which standards? Has Boston Edison ever applied to the NRC for approval of special disposal procedure under 10 CFR Section 20.302?

Answer:

NRC does not place limits on amount of contaminated debris that a licensee may store. What NRC does is place limits on radiation exposures that may be received by workers and the public and thereby indirectly controls amounts of radiation hazards onsite. Boston Edison has conformed to NRC waste disposal standards. These standards are promulgated in 10 CFR 61. Boston Edison has not yet applied for a waiver to dispose of the dirt pile under 10 CFR 20.302. During the NRC Inspection No. 88-29, licensee representatives said that they intend to apply for such a waiver sometime after the plant becomes operational again.