



CHAIRMAN

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

August 18, 1988

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Mr. Gerald E. Dwight, Chairman  
Board of Selectmen, Town of Scituate  
600 Chief Justice Cushing Highway  
Scituate, Massachusetts 02066

Dear Mr. Dwight:

I am responding to your letter of June 29, 1988, in which you expressed the concerns of the Town of Scituate's Board of Selectmen regarding the restart of the Pilgrim Nuclear Power Station. The issues you identified have been and will continue to be monitored by the Nuclear Regulatory Commission (NRC), as well as the Federal Emergency Management Agency (FEMA) and the Commonwealth of Massachusetts. I want to assure you that the NRC will not permit the Pilgrim plant to resume operation until we determine that the licensee is ready and capable of resuming safe operations and that the public health and safety is protected.

Our determination whether to restart Pilgrim will involve consideration of the adequacy of emergency preparedness. Contrary to your understanding, however, emergency plans are in place that include measures for evacuation of the Pilgrim plume exposure pathway emergency planning zone (EPZ), which is about 10 miles in radius. Since August 1987, the Commonwealth of Massachusetts, the five towns within the EPZ, and the two designated reception center towns of Bridgewater and Taunton have undertaken extensive efforts to improve emergency plans and procedures as a result of FEMA findings. A location in the town of Wellesley has been tentatively selected as a site for a third reception center for residents of the Pilgrim EPZ. If implemented, this reception center would be designated for the citizens of the towns of Duxbury and Marshfield. The Commonwealth of Massachusetts is currently conducting a feasibility study to determine whether or not Wellesley is a suitable site for a reception center. The Town of Scituate is not designated a reception center community in the revised emergency plans for Pilgrim. You may wish to contact the Massachusetts officials in charge of emergency planning for more detailed information.

With respect to your concern about obtaining the results of the health study underway on the incidence of leukemia, the NRC has concluded on the basis of the existing data that we would not be justified in delaying our determination on whether or not to

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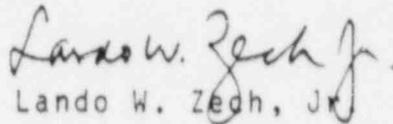
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allow the restart of the Pilgrim plant pending completion of this study. The enclosed March 29, 1988 letter to Senator Kennedy provides the basis for this conclusion.

I hope this response will resolve your concerns. Concerns that are brought to the attention of NRC by local communities contribute to our efforts to protect the health and safety of the public. If you have further questions, please contact me or Mr. William T. Russell, Regional Administrator, Region I, U. S. Nuclear Regulatory Commission, 475 Allendale Road, King of Prussia, Pennsylvania 19406 (Telephone: (215) 337-5299).

Sincerely,

  
Lando W. Zech, Jr.

Enclosure: As stated



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

**ACTION**

EDO Principal Correspondence Control

FROM:

DUE: <sup>2/4/88</sup> 07/28/88

EDO CONTROL: 0003841  
DOC DT: 06/29/88  
FINAL REPLY:

Gerald E. Dwight, Chairman  
Board of Selectmen  
Town of Scituate, Massachusetts

TO:

Chairman Zech

FOR SIGNATURE OF:

\*\* PRI \*\*

CRC NO: 88-0651

Chairman

DESC:

ROUTING:

EXPRESSES THE CONCERNS OF THE BOARD OF SELECTMEN  
IN THE TOWN OF SCITUATE IN THE MATTER OF ANY  
PLANNED REOPENING OF THE PILGRIM NUCLEAR POWER  
PLANT

Stello  
Taylor  
Rehm  
Russell

DATE: 07/19/88

ASSIGNED TO:

CONTACT:

NRR

Murley

SPECIAL INSTRUCTIONS OR REMARKS:

NRR RECEIVED: JULY 19, 1988

ACTION: DREP: CONGEL

NRR ROUTING: MURLEY/SNIEZEK  
MIRAGLIA  
MARTIN  
GILLESPIE  
MOSSBURG

**ACTION**  
DUE TO NRR DIRECTOR'S OFFICE  
BY <sup>30</sup> July 25, 1988





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20565

March 29, 1988

The Honorable Edward M. Kennedy  
Committee on Labor and Human Resources  
United States Senate  
Washington, D. C.

Dear Mr. Chairman:

I am responding to your February 17, 1988 letter, in which you expressed concern regarding both the process we adopted to reach a decision on the restart of the Pilgrim Power Station and the possible timing of that decision. You also offered five specific recommendations for our consideration that in your view would remedy the defects you perceive in our procedures.

The Commission ultimately must decide whether to authorize the Pilgrim plant to restart. We must do so based on the best information available to us and with full awareness of our responsibility for the protection of the public health and safety. We take this responsibility very seriously. Our staff is carefully monitoring the progress of the Boston Edison Company in addressing the issues that must be resolved prior to restart. We believe we are taking the necessary steps to assure ourselves that the Pilgrim plant will not restart unless and until we are fully satisfied that the licensee is ready and capable of resuming safe operations and that the public health and safety is protected.

Our detailed responses to your recommendations are enclosed. We believe that the information provided in our recent correspondence and in the enclosure to this letter addresses the concerns that you raised.

Sincerely,

*Lando W. Zech Jr.*  
Lando W. Zech, Jr.

Enclosure:  
Responses to Recommendations

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## RESPONSES TO RECOMMENDATIONS

Recommendation 1. Until we receive satisfactory answers to the question whether there is a link between cancer and nuclear power, the Pilgrim plant should not be permitted to restart.

Response 1. The NRC staff has reviewed the epidemiological study entitled, "Health Surveillance of the Plymouth Area," which was performed by the Massachusetts Department of Health and referenced in the enclosure to your letter. The study reports detecting an increased incidence of leukemia cases in five towns in the vicinity of the Pilgrim Nuclear Power Plant. Because many factors other than the Pilgrim plant could cause this increase, the authors of the study state that the cause of the increased incidence has not been determined. The staff agrees with the authors' statement.

The effects of radiation on living systems have been studied for decades by individual scientists as well as by select committees that have been formed to objectively and independently assess the risks from radiation. These studies were considered in the development of the public health and safety limits that apply to the Pilgrim plant, as well as to other nuclear power plants. The studies have not detected a statistically significant increase in cancer for doses and dose rates normally encountered in the vicinity of nuclear power plants. However, as a prudent measure, the NRC staff assumes that there is a linear relation between cancer and low doses of radiation. NRC limits are selected so that the statistical probability of risk is extremely low.

We are also aware of the National Institutes of Health's involvement in studying the adverse effects of low-level ionizing radiation. We support the need to further define the effects of this phenomenon, but we believe it will be several years before the results of these studies will be available. We look forward to incorporating those results into the body of data already available on this subject.

Thus, the staff has found that on the basis of the substantial data available in the area of health effects from exposure to radiation, it is not appropriate to delay restarting the Pilgrim plant pending completion of further study to determine if there is a link between certain types of cancer and commercial nuclear power generation.

Recommendation 2. Until there is an evacuation plan which is approved by the Federal Emergency Management Agency (FEMA) and is acceptable to the Commonwealth of Massachusetts, the plant should not be permitted to restart.

Response 2. The NRC will not permit the Pilgrim facility to resume operation until corrective actions satisfactory to NRC have been taken to address the emergency planning deficiencies identified by FEMA. The NRC will give special attention to the corrective actions involving the emergency plans for schools and day care centers, as well as for special needs and transport-dependent populations in the plume exposure pathway emergency planning zone. Before allowing Pilgrim to restart, the NRC will require some demonstration that critical aspects of the emergency plan can be adequately implemented.

Under the NRC's regulatory framework, whether an outstanding emergency planning deficiency delays restart will depend on the gravity of the deficiency, the nature of any compensatory actions, and progress toward correction of the deficiency. Thus, it may be that restart can be authorized with some emergency planning issues not fully resolved. For Pilgrim, the restart decision will be made by the Commissioners.

Recommendation 3. Members of the Commission should make an on-site visit to the Pilgrim plant to assess for themselves the merits of the serious health and safety problems which have been raised.

Response 3. The Commissioners have been personally and directly involved in the consideration of the Pilgrim issues. Chairman Zech and three other Commissioners made visits to Pilgrim during 1987. One Commissioner met in State offices with State officials to hear their concerns about Pilgrim. At this time, there are no additional Commissioner visits to Pilgrim scheduled in 1988.

Recommendation 4. Prior to any consideration of whether the Pilgrim plant should be permitted to restart, Commission members should convene a public meeting to receive first-hand testimony from State and local officials and experts from the Plymouth area.

Response 4. As described in our letter of November 20, 1987, the NRC is holding several meetings in the Plymouth area regarding Pilgrim. These meetings are open to the public and are structured to allow the broadest possible public participation. The most recent of these meetings was held on February 18, 1988, and provided an opportunity for State and local officials, as well as members of the public, to provide their views to the staff. The Commonwealth was consulted and agreed to the scheduling and purpose of these meetings but did not participate, although approximately 50 members of the public did provide comments regarding the Pilgrim Restart Plan and other matters of individual concern. We intend to conduct followup public meetings in the Plymouth area to discuss the disposition of comments and concerns raised during the February 18, 1988 meeting. The Commonwealth would be free, of course, to participate in any of these follow-on meetings if it chooses to do so, and we urge the Commonwealth and local officials to provide whatever information they believe should be considered by the Commission in making a restart decision.

The Commission is continuing to involve Commonwealth and local officials, and leaders of local citizens groups, with respect to the restart issues at Pilgrim. On February 9, 1988, a senior member of the NRC staff met with the Massachusetts Assistant Secretary of Public Safety, State Senator William Golden, and others to discuss the Commission's approach toward the restart readiness assessment of Pilgrim. An additional meeting with Senator Golden and others who submitted a July 1986 10 CFR 2.206 Petition is planned.

In summary, the staff has provided and is continuing to afford the opportunity for ample public participation.

Recommendation 5. Finally, I request that in my capacity as Chairman of the Senate Committee on Labor and Human Resources, with experience concerning, and responsibility for, the health and safety issues involved, I be given the opportunity to appear before the Commission to present information on this issue, prior to any Commission deliberation on the question whether the Pilgrim plant should be permitted to restart.

Response 5. Although the Commission does plan to hold one or more public meetings in Rockville, Maryland, concerning the restart of the Pilgrim plant, it is difficult at this time to predict when these meetings might be scheduled. The structure for the meetings will be established at the appropriate time and, if official and public appearances are planned, we would be pleased to have you appear before the Commission to present your views.

## United States Senate

WASHINGTON, DC 20510

February 17, 1988

Mr. Lando W. Zech, Jr.  
Chairman  
Nuclear Regulatory Commission  
1717 H Street, N.W.  
Washington, D.C. 20555

Dear Mr. Chairman:

I am sure that Commission staff have brought to your attention the highlights of our recent Senate Labor Committee hearing in Plymouth, Massachusetts, concerning the problems involved with the proposed re-start of the Pilgrim I nuclear power plant.

You are also probably aware of the investigation which has been launched by the National Institutes of Health concerning the possible relationship between cancer and radiation from nuclear power plants. As NIH Director James B. Wyngaarden pointed out in the attached response to my request for such a study, the NIH inquiry was prompted in part by the reports of increased incidence of leukemia around the Pilgrim plant. These reports were part of the testimony at our hearings.

I am concerned that the Commission may be considering a timetable for deciding whether the Pilgrim plant should be allowed to re-start which does not give adequate consideration to the large number of relevant factors involved. I previously urged you to use your discretionary authority to provide an adjudicatory hearing at which all of these issues could be appropriately aired. Unfortunately, you rejected this approach, leaving the people of Massachusetts, who would stand the most to lose if Pilgrim is permitted to re-start, and their elected state officials, without a formal and meaningful contribution into the re-start decision-making process.

In view of the urgency of this situation, and in light of my responsibilities as Chairman of the Senate Committee responsible for matters relating to the public health and safety, I want to stress the following points for your consideration:

1. Until we receive satisfactory answers to the question whether there is a link between cancer and nuclear power, the Pilgrim plant should not be permitted to re-start.

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Mr. Lando W. Zech, Jr.  
Page Two

2. Until there is an evacuation plan which is approved by the Federal Emergency Management Agency and is acceptable to the Commonwealth of Massachusetts, the plant should not be permitted to re-start.

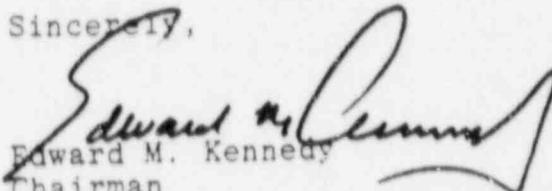
3. Members of the Commission should make an on-site visit to the Pilgrim plant to assess for themselves the merits of the serious health and safety problems which have been raised.

4. Prior to any consideration of whether the Pilgrim plant should be permitted to re-start, Commission members should convene a public meeting to receive first-hand testimony from state and local officials and experts from the Plymouth area.

5. Finally, I request that in my capacity as Chairman of the Senate Committee on Labor and Human Resources, with experience concerning, and responsibility for, the health and safety issues involved, I be given the opportunity to appear before the Commission to present information on this issue, prior to any Commission deliberation on the question whether the Pilgrim plant should be permitted to re-start.

I would appreciate hearing from you at your earliest convenience concerning the Commission's position with respect to these requests.

Sincerely,



Edward M. Kennedy  
Chairman

Committee on Labor and Human Resources



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health  
National Cancer Institute  
Bethesda, Maryland 20892

The Honorable Edward M. Kennedy  
United States Senate  
Washington, D.C. 20510

Dear Senator Kennedy:

I am pleased to respond to your letter of January 7, 1988 regarding potential health risks associated with low-level radiation. Specifically, you raised concerns about the health consequences of nuclear power plant accidents, adverse effects related to nuclear power plant operations, and cancer risks linked to radioactive fallout from nuclear weapons testing.

The National Institutes of Health is actively involved in studying the adverse effects of ionizing radiation, and we concur with your view that the risks at low levels need further clarification. We know, of course, that radiation can cause cancer, but the biological effects of quite low levels are a subject of current scientific conjecture. Because new information relevant to the assessment of low-level risks will be available within the next one or two years, we do not believe public discussions at this time would be as fruitful as they might be in the future. Our reasoning is discussed below.

The descriptive studies of leukemia clusters around the Pilgrim power plant in Massachusetts, and several plants in the United Kingdom, have led us to initiate a large-scale evaluation of cancer deaths occurring among persons living near the over 100 reactors operating in the United States. We are correlating county mortality data from the 1950s through early 1980s with reactor operations to determine whether the previous reports might be chance occurrences based on small numbers, or whether there might be valid reasons for concern. This evaluation should be completed within about one year.

One of the major radioactive isotopes emitted during nuclear power plant operations, and from nuclear weapons testing, is iodine-131. For the past three years we have been collaborating with Swedish colleagues on a study of 40,000 patients given low doses of iodine-131 for diagnostic reasons. This large study will be finished within one year and will prove invaluable in estimating the possible adverse effects from this environmental contaminant. We have also evaluated descriptive mortality data regarding possible cancer risks in the general population living downwind of the Nevada nuclear test site. While many reported associations are unsupported by these data, a small increase in leukemia in southwest Utah cannot be ruled out at this time. Our contract-supported study with the University of Utah should provide more definitive answers within the next year. Finally, staff members have conducted studies of the military personnel participating at nuclear weapons tests, and have confirmed that leukemia was increased above expectation, but apparently only for participants at one test series. No excess mortality from other malignancies was found among participants at any test series.

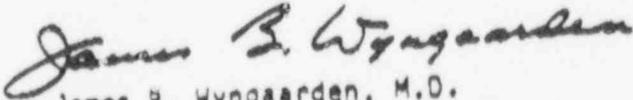
The most serious health impact of the Three Mile Island (TMI) accident that can be identified with certainty is mental stress to those living near the plant, particularly pregnant women and families with teenagers and young children. Although increased risks of cancer, birth defects and genetic abnormalities are potential long-term consequences of low-level irradiation, few if any such effects are likely. The average dose of radiation to the 36,000 people living within a five-mile radius of the plant was only 2-8 mrem, or approximately what might be received from natural background radiation within one or two weeks. There is no serious possibility that this dosage would result in any deleterious effects that could be detected epidemiologically. (In contrast, at Chernobyl in the USSR the average dose to the 24,000 people living near the reactor was estimated as 44,000 mrem.) The Pennsylvania Department of Public Health, in consultation with the Centers for Disease Control, however, is conducting periodic health and behavior surveys of the population living near TMI. Although psychological effects are temporary in most individuals, the ultimate impact of these effects remains to be fully assessed, as does the degree to which they may differ from those caused by other accidents or disasters. The mental stress following TMI, of course, has been aggravated by the fear that a larger release of radiation might take place, with consequences that could be disastrous as now exemplified by the Chernobyl accident. While we are thankful that such an event has not occurred in the United States, we should profit from these experiences by taking steps to minimize the risks of such accidents in the future.

Finally, within two years the National Academy of Sciences and the United Nations will complete their next reports on the biological effects of low-level radiation. We are also awaiting the publication of these scientific documents before embarking upon our next revision of the Radioepidemiological Tables mandated by Congress.

It is important to stress that useful information about very small health effects, like those associated with very low levels of radiation, is extremely difficult and expensive to obtain. An indirect approach, such as studying populations with higher-level exposures and extrapolating the results to lower levels, tends to be far more productive. For example, studies of the workers at nuclear power plants would be particularly informative because the doses, though low, would be higher than to the general population, and cumulative doses could reach levels where radiation effects might be detectable. By law, radiation doses are recorded on individual workers, and we have contacted the Nuclear Regulatory Commission about the value of creating a registry of the almost 100,000 workers they monitor each year in the United States. Your encouragement and support for the development of such a registry would be invaluable and greatly appreciated.

In closing, I appreciate your continued support for our medical research program, and I will keep you informed on developments in the area of radiation studies as results from our investigations become available.

Sincerely,

  
James B. Wyngaarden, M.D.  
Director