

December 21, 1993

Docket No. 50-293

Mr. E. Thomas Boulette, Phd.  
Senior Vice President - Nuclear  
Boston Edison Company  
Pilgrim Nuclear Power Station  
Rocky Hill Road  
Plymouth, Massachusetts 02360

Dear Mr. Boulette:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT  
REGARDING 10 CFR PART 20 EXEMPTION REQUEST

In a letter dated September 13, 1993, you requested an exemption, pursuant to 10 CFR 20.2301, from 10 CFR Part 20, Appendix B, Table 1, to use more appropriate specific derived air concentrations (DAC) instead of the generic DACs for Kr-89 and Xe-137 for posting requirements to be implemented in the Final Rule on Standards for Protection Against Radiation, 10 CFR Part 20, on January 1, 1994. Enclosed is the Environmental Assessment and Finding of No Significant Impact related to your request.

This Assessment has been forwarded to the Office of the Federal Register for publication.

Sincerely,  
Original signed by:  
Ronald B. Eaton, Senior Project Manager  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosure:  
Environmental Assessment and  
Finding of No Significant Impact

cc w/enclosure:  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in black ink, appearing to read "Ronald B. Eaton".

Ronald B. Eaton, Senior Project Manager  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosure:  
Environmental Assessment and  
Finding of No Significant Impact

cc w/enclosure:  
See next page

Mr. E. Thomas Boulette

Pilgrim Nuclear Power Station

cc:

Mr. Edward S. Kraft,  
Vice President of Nuclear  
Operations & Station Director  
Pilgrim Nuclear Power Station  
RFD #1 Rocky Hill Road  
Plymouth, Massachusetts 02360

Mr. H. Vernon Oheim  
Manager, Reg. Affairs Dept.  
Pilgrim Nuclear Power Station  
RFD #1 Rocky Hill Road  
Plymouth, Massachusetts 02360

Resident Inspector  
U. S. Nuclear Regulatory Commission  
Pilgrim Nuclear Power Station  
Post Office Box 867  
Plymouth, Massachusetts 02360

Mr. David F. Tarantino  
Nuclear Information Manager  
Pilgrim Nuclear Power Station  
RFD #1, Rocky Hill Road  
Plymouth, Massachusetts 02360

Chairman, Board of Selectmen  
11 Lincoln Street  
Plymouth, Massachusetts 02360

Mr. Thomas Rapone  
Secretary of Public Safety  
Executive Office of Public Safety  
One Ashburton Place  
Boston, Massachusetts 02108

Office of the Commissioner  
Massachusetts Department of  
Environmental Protection  
One Winter Street  
Boston, Massachusetts 02108

Mr. David Rodham, Director  
Massachusetts Emergency Management  
Agency  
400 Worcester Road  
P.O. Box 1496  
Framingham, Massachusetts 01701-0317  
Attn: James Muckerheide

Office of the Attorney General  
One Ashburton Place  
20th Floor  
Boston, Massachusetts 02108

Chairmen, Citizens Urging  
Responsible Energy  
P. O. Box 2621  
Duxbury, Massachusetts 02331

Mr. Robert M. Hallisey, Director  
Radiation Control Program  
Massachusetts Department of  
Public Health  
305 South Street  
Boston, Massachusetts 02130

Citizens at Risk  
P. O. Box 3803  
Plymouth, Massachusetts 02361

Regional Administrator, Region I  
U. S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406

W. S. Stowe, Esquire  
Boston Edison Company  
800 Boylston St., 36th Floor  
Boston, Massachusetts 02199

Mr. Paul J. Hamilton  
Licensing Division Manager  
Boston Edison Company  
25 Braintree Hill Park  
Braintree, Massachusetts 02184

UNITED STATES NUCLEAR REGULATORY COMMISSIONBOSTON EDISON COMPANYPILGRIM NUCLEAR POWER STATIONDOCKET NO. 50-293ENVIRONMENTAL ASSESSMENT ANDFINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering the approval of an exemption, pursuant to 10 CFR 20.2301, from the requirements of 10 CFR Part 20, Appendix B, Table 1, to Boston Edison Company, for the Pilgrim Nuclear Power Station (PNPS) located in Plymouth, Massachusetts. The requested exemption would allow the use of a derived air concentration (DAC) of  $10^{-6}$  for krypton-89 and a DAC of  $10^{-5}$  for xenon-137, instead of using the generic value DAC of  $10^{-7}$   $\mu\text{Ci/ml}$  that is specified in Appendix B to 10 CFR 20.1001 - 20.2402 for these two radionuclides, when determining when an area is, and requires posting as, an airborne radioactivity area in accordance with the requirements of 10 CFR Part 20.

ENVIRONMENTAL ASSESSMENTIdentification of the Proposed Action:

The proposed action would approve the use of the requested DAC values for posting airborne radioactivity areas at PNPS. Posting of airborne radioactivity areas is required by 10 CFR Part 20 as one means of controlling occupational radiation exposure.

The Need for the Proposed Action:

The Boston Edison Company (BECO) states the requested exemption is needed because krypton-89 and xenon-137 are a significant fraction of the noble gas radioactivity in a boiling water reactor (BWR) and the DAC of  $10^{-7}$

$\mu\text{Ci/ml}$  specified in Appendix B to 10 CFR 20.1001 - 20.2402 is too small for these particular radionuclides. BECo further states that the use of the  $10^{-7}$   $\mu\text{Ci/ml}$  value for the krypton-89 and xenon-137 DACs would cause over posting of airborne radioactivity areas, which erodes the significance of the posting and consumes resources. BECo also states that the use of the  $10^{-7}$   $\mu\text{Ci/ml}$  value for the krypton-89 and xenon-137 DACs would result in undue hardship and would overburden operational staff by posting areas that are normally not required to be posted while providing little to no benefit.

Environmental Impacts of the Proposed Action:

The Commission has evaluated the environmental impact of the proposed action and has concluded that the use of the proposed DACs for posting airborne radioactivity areas will not result in any significant increase in individual or cumulative occupational radiation exposure. The radiation doses corresponding to the DAC values requested by BECo for krypton-89 and xenon-137 are within the radiation dose limits that were used to calculate the DAC values for the other radioisotopes of krypton and xenon that are listed in Appendix B to 10 CFR 20.1001-20.2402. The staff has determined that this exemption involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released. Accordingly, the Commission has concluded that there are no significant radiological environmental impacts associated with the proposed exemption.

With regard to potential nonradiological impacts, the proposed approval would not affect nonradiological plant effluents and has no other environmental impact. Therefore, the Commission concludes that there is no significant nonradiological environmental impact associated with the proposed exemption.

Alternatives to the Proposed Action:

Since the Commission has concluded that the environmental effects of the proposed action are not significant, any alternatives with equal or greater environmental impact need not be evaluated.

The principal alternative would be to deny the requested exemption. This would not reduce the environmental impact attributable to this facility.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for the Pilgrim Nuclear Power Station, dated May 1972.

Agencies and Persons Consulted:

The NRC staff consulted with Dr. Keith Eckerman, Oak Ridge National Laboratory, to obtain calculations of relevant radiation dose conversion factors for krypton-89 and xenon-137.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the foregoing environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to this action, see the application for exemption dated September 13, 1993, which is available for public inspection

at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington DC 20555, and at the local public document room located at the Plymouth Public Library, 11 North Street, Plymouth Massachusetts 02360.

Dated at Rockville, Maryland, this 21st day of December 1993.

FOR THE NUCLEAR REGULATORY COMMISSION



Walter R. Butler, Director  
Project Directorate I-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation