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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
Boston Edison Company	)	Docket No. 50-293
(Pilgrim Nuclear Power Station)	)	

MASSACHUSETTS ATTORNEY GENERAL'S COMMENTS IN OPPOSITION TO PROPOSED FINDING OF NO SIGNIFICANT HAZARDS CONSIDERATION

I. Introduction

On April 30, 1993, the Nuclear Regulatory Commission ("NRC" or "Commission") issued public notice of an operating license amendment request by the Boston Edison Company ("Boston Edison" or "Company"), for the Pilgrim Nuclear Power Station ("PNPS" or "Pilgrim"), which would increase the number of allowed fuel assembly storage cells from 2,320 to 3,859, change the maximum loads allowed to travel over the spent fuel assemblies from 1,000 lbs. to 2,000 lbs., and change the limiting characteristics of assemblies to be stored in the spent fuel. 58 Fed. Reg. 26171 (April 30, 1993). The NRC proposes to make a determination of no significant hazards consideration regarding the proposed license amendment.

The Massachusetts Attorney General ("Attorney General") opposes the proposed finding of no significant hazards consideration.

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II. STATEMENT OF FACTS

The Pilgrim spent fuel pool is presently licensed for 2,320 storage cells which were installed in the pool in 1985. Boston Edison proposes to utilize the open space available in the fuel pool for spent fuel storage by adding six additional storage racks containing a total of 1,526 storage cells. This will increase the total storage capacity of the Pilgrim pool to 3,859 cells and will extend the full core reserve capacity to the end of the plant's licensed life (year 2012).

The proposed operating license amendment is to allow an additional six racks, however, Boston Edison's current intention is to install only two racks that will increase the installed storage capacity of the fuel pool by 558 cells to a total of 2,878 storage cells. The additional four racks will be installed at some future undisclosed time.

III. THE PROPOSED LICENSE AMENDMENT POSES SIGNIFICANT HAZARDS CONSIDERATIONS

A. Statutory and Regulatory Framework

Section 189 of the Atomic Energy Act, 42 U.S.C. § 2239 sets forth the hearing framework for nuclear power plants. The Nuclear Regulatory Commission ("NRC") may not issue an operating license amendment before granting a public hearing unless it determines that the proposed amendment poses "no significant hazards consideration." Such a determination can be made only when the amendment does not:

(1) Involve a significant increase in the

probability or consequences of an accident previously evaluated; or

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

(3) Involve a significant reduction in the margin of safety. 10 C.F.R. § 50.92.

B. The Proposed License Amendment Raises Significant Hazards Considerations

The circumstances of this case raise significant hazards considerations.

1. Proposed Elimination of Cask Loading Area From Spent Fuel Pool

Approval of the amendment will eliminate the spent fuel storage/cask loading area from the spent fuel pool. The proposed license amendment would result in the placement of a spent fuel storage rack in a location in the spent fuel pool which is currently dedicated to spent fuel cask loading, leaving no other space in the spent fuel pool for this purpose. The storage rack proposed for this space by Boston Edison should not be installed since their are feasible alternatives which will more cost effective and safer, i.e. dry-cask storage. Sufficient room for cask loading must be maintained in the spent fuel pool as a prudent safety precaution against the potential need to unload the spent fuel pool in the event of an emergency.

2. Failure to Consider Alternatives in a Timely Fashion

Boston Edison has failed to consider alternatives to adding spent fuel racks in a timely fashion in violation of the National Environmental Policy Act (NEPA). PNPS's need for additional storage facilities was predictable.[1] By waiting until 1993 to file a license amendment request for installation of additional spent fuel storage racks in the existing spent fuel pool, Boston Edison has effectively foreclosed all other options since there is not sufficient time to implement any other option except to shut down the plant. Plant shutdown solely on the basis of inadequate spent fuel storage capability is not environmentally acceptable due to the economic and environmental impacts of the alternative of adding additional racks. By delaying taking action to reasonably ensure itself of adequate spent fuel storage capability (including full core discharge capability and adequate storage to accommodate the full licensed period of operation), Boston Edison has effectively contravened a basic purpose of NEPA and has attempted to guarantee that its choice of spent fuel management methods is approved regardless of its merits.

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[1]A BNL study of spent fuel pool severe accidents published in March 1989, almost four years before this license amendment application, concluded that the Pilgrim spent fuel pool would be filled in 1993. See J.H. Jo, et al., Value/Impact Analyses of Accident Preventive and Mitigative Options for Spent Fuel Pools, Brookhaven National Laboratory, NUREG/CR-5281, prepared for the Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, March 1989 at 21.

3. Failure to Consider Long-Term Costs

Boston Edison has failed to consider long-term costs of spent fuel management options. The Department of Energy's (DOE) current schedule for accepting title to spent fuel is the year 2010. Pilgrim will cease operation in 2012 under its current operating license. Boston Edison's current plan, as set forth in its 1991 Decommissioning Study (NES Report 83A5879, Rev.O, December 1991) envisions removal of all spent fuel within two years of final shutdown (i.e. by 2014). Given that spent fuel will be taken by DOE on a priority basis based on discharge date from the reactor, and given that spent fuel from Pilgrim will be competing with more than 110 other plants, it is all but impossible for this schedule to be met.

Boston Edison's own consultants (Nuclear Energy Services) estimate that maintaining the spent fuel pool as a storage location after plant shutdown will cost slightly over $80 million for two years, or about $40 million per year in 1991 dollars. Clearly some wet pool storage will be necessary since the fuel cannot be placed in dry storage until it has decayed for a minimum of one year. However, any period of storage substantially longer than one year will rapidly overcome the short-term cost advantage attributed to pool storage by Boston Edison. The Company estimates the cost of adding additional racks at $5 million, and the cost of dry storage at somewhat over $13 million. The asserted cost differential of $8 million is easily overcome by the annual $40 million cost of maintaining pool storage after plant shutdown.

4. Use of RHR System for Spent Fuel Pool Cooling

As currently designed, the residual heat removal (RHR) system can be used to supplement the spent fuel pool cooling system (SFPCS) in an emergency. The RHR system is required by the Pilgrim license and by NRC regulations (principally the General Design Criteria of Appendix B to 10 C.F.R. Part 50) to be available for the reactor to perform low pressure coolant injection (the same pumps are used for LPCI and RHR purposes), shutdown cooling, containment spray, and containment heat removal purposes.

The proposed amendment would alter the circumstances surrounding the use of the RHR system for spent fuel pool cooling from being an emergency backup to one which is required to be used due to the extra heat load associated with the additional spent fuel which would be allowed to be stored in the pool if the license amendment request is granted. Using the RHR on a regular basis to cool the spent fuel pool reduces its availability and reliability for reactor cooling purposes.

In addition, the Pilgrim updated FSAR current states that the spent fuel pool water temperature can be maintained at or below 125 degrees F. with the existing configuration. If the license amendment request is approved, the temperature limit will have to be increased to 142 degrees F. following a normal refueling, and this is with both trains of the SFPCS operating. If one train of the SFPCS fails, or if a full core discharge occurs, the RHR system will have to be used in an enhanced spent fuel pool cooling mode to prevent the boiling of the spent fuel pool water. In the extreme

case of Cycle 19 conditions and a full core discharge, a loss of spent fuel pool cooling will result in pool boiling within 6.41 hours. Considering the mean time to repair RHR pumps or diesel generators (of the order of 8 hours or significantly more), it is unlikely that boiling can be avoided.

5. Spent Fuel Severe Accidents

Severe accidents involving spent fuel pools are possible due to loss of pool inventory or loss of heat removal. Such accidents have been studied and evaluated in some detail in a number of NRC-sponsored reports (NUREG/CR-4982, NUREG-1353, NUREG/CR-5281, AND NUREG/CR-5176), including the potential for spent fuel pool fire.

This amendment presents significant hazards considerations in the most fundamental way. Nearly doubling the total stored quantity of long-lived spent fuel radionuclides in the spent fuel cannot help but to increase the consequences of hypothetical spent fuel pool accidents. Moreover, the impact is enhanced because the additional spent fuel rods which would be stored in the spent fuel pool under the proposed license amendment are higher in enrichment than the spent fuel discharged as a result of earlier plant operation and these fuel rods are used to higher burnups than the previously discharged fuel. Both factors increase the radionuclide loading on a per rod or per assembly basis.

Since no plant-specific analysis of spent fuel pool accident risks is currently available, and expert judgment (unsupported by detailed studies) regarding risk issues has been shown to be

unreliable, the Commission has no basis for an assertion that the risks of spent fuel pool accidents are low. Indeed, in the only existing study of such accidents (for Vermont Yankee Nuclear Power Station), their probability approaches that of reactor accidents (within a factor of ten), and the consequences of spent fuel pool accidents can be much more significant than reactor accidents due to the much greater quantity of radioactive cesium and strontium isotopes available for release in a spent fuel pool accident as compared with a reactor accident.

Risk comparisons of spent fuel pool storage, reactor operation, and dry storage are also illuminating. An EPRI study of spent fuel storage risks, indicated that pool storage posed significantly more risk than dry storage concepts. See, NUS corporation, Review of proposed Dry-Storage Concepts Using Probabilistic Risk Assessment, EPRI NP-3365, February 1984, page S-3, which indicates a margin of a factor of 100 to 1,000 or more at varying consequence levels.

CONCLUSION

Boston Edison has failed to demonstrate that the proposed license amendment involves no significant hazards considerations; in fact, on its face, it would significantly increase the risk to public health and safety posed by operation of the PNPS. Accordingly the Attorney General requests that the NRC reverse its proposed finding of no significant hazards considerations, and order a prior hearing on the proposed license amendment.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing pleadings to which this certificate is attached were served by Federal Express or first-class mail on the parties listed below on this date.

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Division of Freedom of Information
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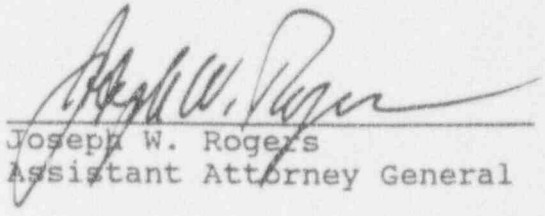

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Dated: May 27, 1993