U.S. NUCLEAR REGULATORY COMMISSION

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATING TO THE RESTART OF PILGRIM NUCLEAR POWER STATION

INTRODUCTION

In April 1986 the Boston Edison Company, after discussion with NRC Region I officials, decided to keep the Pilgrim Nuclear Power Station shut down and to undertake a substantial corrective action program aimed at ensuring compliance with NRC requirements and enhancing overall plant operational safety. After substantial corrective actions had been taken, the Pilgrim plant resumed operation in December 1988, with the concurrence of the NRC.

NEED FOR THE PROPOSED ACTION

The restart of the facility was challenged in Commonwealth of Massachusetts V. NRC, NO. 88-2211 (1st. Cir.). In its decision upholding the restart, the Court concluded that the Pilgrim restart involved NRC action to reinstate the license. The Court went on to uphold the NRC actions against other related challenges. The case did not raise, nor did the Court address, any National Environmental Protection Act (NEPA) related issues in connection with this matter.

Although the reinstatement action may well be considered part of an overall enforcement process, so that NEPA consideration is not required, the Commission has determined that it is desirable to document the absence of environmental impacts associated with the resumption of licensed operations at the Pilgrim facility.

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ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

The environmental impacts associated with operation of the Pilgrim Station are thoroughly documented in the Final Environmental Statement (FES) issued by the NRC in connection with the issuance of the full power operating license for the Pilgrim Station in May 1972.

The FES discusses site characteristics, general plant design, and operating characteristics, as well as the environmental impacts of plant construction, the impacts of plant operation, and the impacts of postulated accidents. The FES also discusses a number of other NEPA considerations, including the need for power and alternatives to the facility. The environmental impacts of operation discussed in the FES include land use, water use including biological aquatic impacts, radiological impacts of routine operation, and fuel and solid radioactive waste transportation impacts.

The reinstatement of the license does not affect the site characteristics or basic plant design, although the licensee's corrective action program included a number of plant improvements designed to enhance the safety of plant operation. These included a self initiated re-review of emergency planning; plant hardware improvements in accordance with the requirements of 10 CFR 50.62 (the Anticipated Transients Without Scram (ATWS) Rule); and significant improvements in containment integrity through the addition of a torus vent and an on-site emergency diesel generator as part of the Pilgrim Safety Enhancement Program (SEP). The SEP is a licensee initiated program which included several modifications, in addition to those identified, to enhance overall plant safety.

1. Land Use and Water Use Impacts

The reinstatement of the license does not affect land use in any way other than that addressed in the FES. Land use was evaluated in the FES and has not changed.

Water Use, including aquatic impacts, are discussed at length in the FES. The use of Cape Cod Bay waters for the resumed operation of the facility remains the same as when the plant was licensed in 1972. Operation of the facility produces thermal and other water discharges from the plant. These were evaluated in the FES. Discharges to Cape Cod Bay from resumed plant operation will be consistent with those previously evaluated.

2. Radiological Impacts

Routine operations affecting radiological impacts have significantly improved over the past few years as a result of improved effluent release systems and closer control of radioactive effluents as noted in NUREG/CR-2850 (Vol. 7) and NUREG/CR-2907 (Vol. 7). Plant restart does not adversely affect or change routine releases from the facility from those described in the FES. One area of further improvement, which was the subject of plant corrective actions during the shutdown, included plant health physics and improved effluent release controls. The improvements were noted in the most recent NRC report on the Safety Assessment of Licensee Performance (SALP) for Pilgrim, SALP Report No. 50-293/87-99, provided by letter to Boston Edison Company dated July 27, 1988.

Radiological impacts of plant accidents due to plant restart are not increased over those described in the FES. None of the previously analyzed postulated accidents are adversely affected by the resumption of operations at the facility. Indeed, as set forth in the NRC letters to the licensee dated

August 21, 1987, and October 12, 1988, related to our assessment of the Pilgrim SEP, there have been significant improvements in plant safety features, procedures, and control. These improvements include additional sources of water to the reactor pressure vessel, containment enhancements, a back-up nitrogen supply, and improvements in the Reactor Core Isolation Cooling System.

3. Fuel and Solid Radioactive Waste Transportation Impacts

Impacts associated with fuel and solid radioactive waste transportation are unchanged from those described in the FES except for spent fuel. Transportation impacts associated with spent fuel shipments from the facility are different from those described in the FES because of the modification in spent fuel processing capability in the United States since that time. Fuel is now stored on site until a permanent repository is established. The impacts associated with storage of fuel, however, were considered in the Environmental Assessment (EA) of August 17, 1978, issued in support of Amendment Number 33 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. This amendment authorized an increase in the spent fuel storage capacity at the site. The supporting EA concluded that the increased storage capacity will not significantly affect the quality of the human environment and that there will be no environmental impacts attributable to the proposed action other than those described in the FES.

ALTERNATIVES TO THE PROPOSED ACTION

The principal alternatives would be to deny restart of the plant. Since plant problems which lead to the shut down have been corrected, and since restart will be controlled through a carefully phased power ascension program with adequate hold points to assure safe resumption of full power operation, there is no safety

or environmental reason to deny the phased restart. Power from the Pilgrim facility is still needed for Massachusetts and the New England area. Last summer (1988) the New England Power Pool called for five percent voltage reductions on 10 occasions. Eight of the reductions took place in eastern Massachusetts.

ALTERNATIVES USE OF RESOURCES

This action does not involve the use of resources not previously related to the operation of the plant.

AGENCIES AND PERSONS CONSULTED

This assessment was prepared entirely by the NRC staff. No other agencies nor persons were consulted.

BASIS AND CONCLUSION FOR NOT PREPARING AN ENVIRONMENTAL IMPACT STATEMENT

Based on this assessment, the staff concludes that there are no significant radiological or nonradiological impacts associated with the restart and operation to licensed power levels of the Pilgrim Station and that the restart and operation to licensed power levels will have no significant impact on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for this action.

Dated at Rockville, Maryland, this 18th day of August 1989.

FOR THE NUCLEAR REGULATORY COMMISSION

original signed by

Daniel G. McDonald, Acting Director
Project Directorate I-3
Division of Reactor Projects I/I
Office of Nuclear Reactor Regulation

[PILGRIM ENV.ASSESSMENT RESTART]

*For previous concurrences see attached ORC

OFC	PDI-3/LA	PDI-3/PM*	PDI-3/D	OGC*			
NAME	MRushbrook	DMcDonald:mw	RWessman	LChandler			
DATE	8/18/89	8/14/89	8/18/89	8/15/89			

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ALTERNATIVES USE OF RESOURCES

This action does not involve the use of resources not previously related to the operation of the plant.

AGENCIES AND PERSONS CONSULTED

This assessment was prepared entirely by the NRC staff. No other agencies nor persons were consulted.

BASIS AND CONCLUSION FOR NOT PREPARING AN ENVIRONMENTAL IMPACT STATEMENT

Based on this assessment, the staff concludes that there are no significant radiological or nonradiological impacts associated with the restart and operation to licensed power levels of the Pilgrim Station and that the restart and operation to licensed power levels will have no significant impact on the quality of the human environment. Therefore, pursuant to 10 CFR 51.31, an environmental impact statement need not be prepared for this action.

Dated at Rockville, Maryland, this day of , 1989.

Richard H. Wessman Director
Project Directorate I-3
Division of Reactor Projects I/II

DISTRIBUTION: Docket File, NRC & Local PDRs, PDI-3 r/f, SVarga, BBoger, MRushbrook, DMcDonald, MFairtile, OGC, EJordan, BGrimes, ACRS(10), GPA/PA RWessman

[PILGRIM ENV.ASSESSMENT RESTART]

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