November 13, 2002

Mr. Mike Bellamy
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360

SUBJECT: PILGRIM NUCLEAR POWER STATION - REQUEST FOR ADDITIONAL INFORMATION REGARDING APPENDIX K MEASUREMENT UNCERTAINTY RECOVERY - POWER UPRATE REQUEST (TAC NO. MB5603)

Dear Mr. Bellamy:

By letter dated July 5, 2002, as supplemented August 29 and September 27, 2002, Entergy Nuclear Operations, Inc., submitted a license amendment request for proposed changes to the Operating License and Technical Specifications associated with an increase in the licensed power level for Pilgrim Nuclear Power Station from 1,998 MWt to 2,028 MWt (1.5%).

The U.S. Nuclear Regulatory Commission staff is reviewing your submittal and has determined that additional information is required to complete the review. The information was transmitted by fax to Mr. Bryan Ford of your staff on October 29, 2002, and further discussed with members of your staff during a telephone call on October 31, 2002. The specific information requested is addressed in the enclosure to this letter. Mr. Ford agreed that your staff will respond to the requested information by November 22, 2002. If circumstances result in the need to revise the response date, please contact me at (301) 415-8474.

Sincerely,

/RA/

Travis L. Tate, Project Manager, Section 2
Project Directorate I
Division of Licensing and Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure: Request for Additional Information

cc w/encl: See next page

cc:
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U. S. Nuclear Regulatory Commission
Pilgrim Nuclear Power Station
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Plymouth, MA 02360

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11 Lincoln Street
Plymouth, MA 02360

Chairman, Duxbury Board of Selectmen
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Massachusetts Department of
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Ms. Jane Perlov
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Massachusetts Emergency Management
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Chairman
Nuclear Matters Committee
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Mr. William D. Meinert
Nuclear Engineer
Massachusetts Municipal Wholesale
Electric Company
P.O. Box 426
Ludlow, MA 01056-0426

November 13, 2002

Mr. Mike Bellamy
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360

SUBJECT: PILGRIM NUCLEAR POWER STATION - REQUEST FOR ADDITIONAL INFORMATION REGARDING APPENDIX K MEASUREMENT UNCERTAINTY RECOVERY - POWER UPRATE REQUEST (TAC NO. MB5603)

Dear Mr. Bellamy:

By letter dated July 5, 2002, as supplemented August 29 and September 27, 2002, Entergy Nuclear Operations, Inc., submitted a license amendment request for proposed changes to the Operating License and Technical Specifications associated with an increase in the licensed power level for Pilgrim Nuclear Power Station from 1,998 MWt to 2,028 MWt (1.5%).

The U.S. Nuclear Regulatory Commission staff is reviewing your submittal and has determined that additional information is required to complete the review. The information was transmitted by fax to Mr. Bryan Ford of your staff on October 29, 2002, and further discussed with members of your staff during a telephone call on October 31, 2002. The specific information requested is addressed in the enclosure to this letter. Mr. Ford agreed that your staff will respond to the requested information by November 22, 2002. If circumstances result in the need to revise the response date, please contact me at (301) 415-8474.

Sincerely,

/RA/

Travis L. Tate, Project Manager, Section 2
Project Directorate I
Division of Licensing and Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-293

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cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION

APPENDIX K MEASUREMENT UNCERTAINTY RECOVERY - POWER UPRATE REQUEST

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

1. In Section 10.5 “Operator Training and Human Factors” of the Pilgrim Nuclear Power Station (PNPS) Thermal Power Optimization (TPO) uprate amendment, the licensee has not identified any changes to the control room (i.e., controls, displays, and alarms) that will be available to the operators. The U.S. Nuclear Regulatory Commission (NRC) staff anticipates that modifications will be made to the control room and the simulator to assist operators in identifying problems with the ultrasonic flow measurement instrumentation installed to support the TPO uprate. The licensee is requested to provide a description of any modifications, their use, and controls that will be in place to properly monitor them. Additionally, the licensee is requested to provide a brief description of any effects of the power uprate on the safety parameter display system. Finally, please provide a commitment to identify and revise all plant operating procedures that will be affected by the power uprate prior to operation above the current licensed thermal power level. Please use “NRC Regulatory Issue Summary 2002-03: Guidance on the Content of Measurement Uncertainty Recapture Uprate Applications” Section VII, Questions 2, 3, and 4 to frame your response and provide the appropriate information.

2. In section 7.1 “Turbine Generator” of the PNPS TPO uprate amendment, PNPS stated that the overspeed trip settings will be changed from 110% and 111% to 110.6% and 111.6%. PNPS specified increased entrapped energy within the turbine as the basis for the changes. Please provide a description of the effects of these changes on any transients or anticipated operational occurrences that credit the overspeed trip in the safety analysis. The licensee is requested to provide information to demonstrate that the plant will continue to operate within its design limits.

3. In Section 7.3 “Turbine Steam Bypass” of the PNPS TPO uprate amendment, the licensee stated that the steam flow capacity of the bypass system is 25% of the 100% rated flow at current licensed thermal power level. The licensee specified that the percentage of bypass at TPO uprate conditions would decrease even though the capacity would remain unchanged. Additionally, the licensee specified that some transient analyses credit only the actual capacity. Due to higher rated thermal power, this may result in unintended consequences (i.e., higher peak reactor vessel pressures and temperatures) for transients crediting the operation of this system. The licensee is requested to verify that a review of all transient analyses that credit the actual capacity of this system has been performed and identify whether it is sufficient to prevent exceeding safety and design limits.

4. In Section 6.4.5 “Ultimate Heat Sink” (UHS) of the PNPS TPO uprate amendment, the licensee stated that "...TPO operation increases the amount of heat discharged to the UHS by a small amount..." The NRC staff reviewed this statement and the original 1972 Final Environmental Impact Statement for PNPS. The staff requests the licensee

provide either of the following: 1) A statement identifying the environmental assessment performed for PNPS, and approved by the NRC, that demonstrates the heat load rejected to the UHS under the TPO uprate conditions is bounded, or 2) A technical justification for the increased heat load rejected to the UHS including relevant numerical data such as change in heat load discharged, effluent temperature, and condenser cooling water flow rate.

5. The American Society of Mechanical Engineers overpressure analysis was performed at 102% power, which would bound the proposed uprate power level. What was the calculated peak pressure for the ASME overpressure analysis for the current cycle, based on the current safety relief value (SRV) capacity?

6. Section 1.2.1, “TPO Analysis Basis,” states that the throat size of the SRVs is being increased, which may result in a 7.5 % increase in the SRV capacity. Table 9-1, “Key Inputs for ATWS [Anticipated Transient Without Scram] Analysis,” indicates that the peak ATWS pressure is 1495 psig, based on the TPO conditions and the increased SRV capacity. The analysis used SRV setpoint drift of 22 psig. What type of SRVs are installed at PNPS? Explain the basis for the SRV drift value used in the analysis.

7. Section 4.3 of the submittal states that the pre-TPO SAFER/GESTR-LOCA analysis did not have sufficient margin to the statistical Upper Bound peak clad temperature (PCT) limit of 1600 F, a plant specific analysis for PNPS was performed at the TPO rated thermal power level. What is the calculated Upper Bound PCT for the TPO conditions?

8. Section 3.9, “Reactor Core Isolation Cooling,” evaluates the reactor core isolation cooling (RCIC) system capability. The submittal states that the generic evaluation in the Thermal Power optimization Licensing Topical, NEDC - 32938P Section 5.6.7 is applicable to PNPS. Confirm that the loss of all feedwater event was performed at 102% power. (This event is the design basis assumption for the RCIC system).