Entergy Nuclear Operations, Inc.
Pilgrim Station
600 Rocky Hill Road
Plymouth, MA 02360

Stephen J. Bethay
Director, Nuclear Assessment

December 12, 2006

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
Docket No. 50-293 License No. DPR-35

License Renewal Application Amendment 10

REFERENCE: Entergy letter, License Renewal Application, dated January 25, 2006 (2.06.003)

LETTER NUMBER: 2.06.094

Dear Sir or Madam:

In the referenced letter, Entergy Nuclear Operations, Inc. applied for renewal of the Pilgrim Station operating license. NRC TAC NO. MC9669 was assigned to the application.

This License Renewal Application (LRA) amendment consists of four attachments. Attachment A contains the list of revised regulatory commitments. Attachment B contains the response to the RAI on LRA Section B.1.16.1 Containment Inservice Inspection, conveyed in NRC letter dated November 7, 2006. Attachment C contains the response to the RAIs on LRA Appendix E concerning Severe Accident Mitigation Alternatives, conveyed in NRC letter dated November 28, 2006, and for which a compact disc labeled PNPS MACCS2 Input Files is enclosed. Attachment D contains changes to the LRA stemming from NRC Region I inspection of the LRA.

Please contact Mr. Bryan Ford, (508) 830-8403, if you have any questions regarding this subject.

I declare under penalty of perjury that the foregoing is true and correct. Executed on December 12, 2006.

Sincerely,

Stephen J. Bethay
Director, Nuclear Safety Assessment

DWE/dl
Attachments: (as stated)
Enclosure: Compact Disc labeled PNPS MACCS2 Input Files
cc: see next page

cc: with Attachments

Mr. Perry Buckberg
Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Alicia Williamson
Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Susan L. Uttal, Esq.
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
Washington, DC 20555-0001

Sheila Slocum Hollis, Esq.
Duane Morris LLP
1667 K Street N.W., Suite 700
Washington, DC 20006

Mr. Joseph Rogers
Commonwealth of Massachusetts
Assistant Attorney General
Division Chief, Utilities Division
1 Ashburton Place
Boston, MA 02108

Mr. Matthew Brock, Esq.
Commonwealth of Massachusetts
Assistant Attorney General
Environmental Protection Division
One Ashburton Place
Boston, MA 02108

Diane Curran, Esq.
Harmon, Curran, and Eisenberg, L.L.P.
1726 M Street N.W., Suite 600
Washington, DC 20036

Molly H. Bartlett, Esq.
52 Crooked Lane
Duxbury, MA 02332

cc: without Attachments

Mr. James Shea
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Mr. Jack Strosnider, Director
Office of Nuclear Material and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-00001

Mr. Samuel J. Collins, Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

NRC Resident Inspector
Pilgrim Nuclear Power Station

Mr. Robert Walker, Director
Massachusetts Department of Public Health
Radiation Control Program
Schrafft Center, Suite 1M2A
529 Main Street
Charlestown, MA 02129

Ms. Cristine McCombs, Director
Massachusetts Emergency Management Agency
400 Worchester Road
Framingham, MA 01702

Mr. James E. Dyer, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-00001

ATTACHMENT C to Letter 2.06.094
(4 pages)

Response to Request for Additional Information on LRA
Appendix E Concerning
Severe Accident Mitigation Alternatives

NRC RAI 1:

Provide the complete MACCS2 user input file used for the revised calculations described in Entergy's July 5, 2006 response to RAIs. This should include all files necessary to reproduce Entergy's calculations, i.e., the ATMOS, EARLY, CHRONC files, as well as any auxiliary input files containing meteorological data, dose conversion factors, food chain data, and site data. This should be provided in the form of a CD. Also identify and discuss any changes made to the MACCS2 source code.

Response to RAI 1:

A complete set of user prepared files is provided in the enclosed compact disc (CD). The files include ATMOS, EARLY, CHRONC, meteorological data, dose conversion factors, food chain data, and site data with file names ATMBP1Q, EARBP1, CHRBP1, MET01P, DOSDATA, SAMP_A, and SITEP, respectively. In addition, a specific ATMOS file named ATMPS2Q is also included to reflect reduced source terms for the filtered containment vent case (SAMA 2).

No changes were made to the MACCS2 source code.

NRC RAI 2:

Provide updated versions of Environmental Report Tables E.1-14 through E.1-16, based on the revised reactor core radionuclide inventories.

Response to RAI 2:

Updated Tables E.1-14, E.1-15, and E.1-16 are provided as follows:

Table E.1-14 Updated PNPS Core Inventory (Becquerels)[1]

Nuclide	Inventory	Nuclide	Inventory
Co-58	1.15E+16	Te-131m	2.87E+17
Co-60	1.37E+16	Te-132	2.80E+18
Kr-85	1.88E+16	I-131	1.94E+18
Kr-85m	6.84E+17	I-132	2.85E+18
Kr-87	1.24E+18	I-133	4.07E+18
Kr-88	1.68E+18	I-134	4.45E+18
Rb-86	1.05E+15	I-135	3.83E+18
Sr-89	2.08E+18	Xe-133	4.07E+18
Sr-90	1.84E+17	Xe-135	9.68E+17
Sr-91	2.71E+18	Cs-134	3.97E+17
Sr-92	2.83E+18	Cs-136	8.51E+16
Y-90	1.58E+17	Cs-137	2.38E+17
Y-91	2.54E+18	Ba-139	3.75E+18
Y-92	2.84E+18	Ba-140	3.70E+18
Y-93	3.23E+18	La-140	3.77E+18
Zr-95	3.34E+18	La-141	3.48E+18
Zr-97	3.44E+18	La-142	3.35E+18
Nb-95	3.16E+18	Ce-141	3.36E+18
Mo-99	3.65E+18	Ce-143	3.27E+18
Tc-99m	3.15E+18	Ce-144	2.18E+18
Ru-103	2.77E+18	Pr-143	3.20E+18
Ru-105	1.85E+18	Nd-147	1.43E+18
Ru-106	7.52E+17	Np-239	4.26E+19
Rh-105	1.38E+18	Pu-238	2.96E+15
Sb-127	1.74E+17	Pu-239	7.51E+14
Sb-129	6.06E+17	Pu-240	9.41E+14
Te-127	1.69E+17	Pu-241	1.62E+17
Te-127m	2.27E+16	Am-241	1.65E+14
Te-129	5.68E+17	Cm-242	4.35E+16
Te-129m	1.49E+17	Cm-244	2.35E+15

[1] Derived from Reference E.1-21 for a power level of 2028 MW(t) with an increase of 25% for long half-life nuclides Sr-90, Cs-134, and Cs-137 to reflect the average core exposure at PNPS

Table E.1-15 Updated Base Case Mean PDR and OECR Values

Release Mode	Frequency (/yr)	Population Dose (person-sv)[1]	Offsite Economic Cost ($)	Population Dose Risk (PDR) (person-rem/yr)	Offsite Economic Cost Risk (OECR) ($/yr)
CAPB-1	9.51E-08	5.77E-01	3.82E+06	5.49E-06[2]	3.63E-01
CAPB-2	1.27E-08	1.21E+02	7.18E+06	1.53E-04	9.08E-02
CAPB-3	2.39E-09	1.28E+02	7.31E+06	3.06E-05	1.75E-02
CAPB-4	3.29E-09	1.50E+04	4.93E+09	4.94E-03	1.62E+01
CAPB-5	2.73E-09	1.92E+04	6.15E+09	5.24E-03	1.68E+01
CAPB-6	7.95E-09	1.60E+04	4.35E+09	1.27E-02	3.46E+01
CAPB-7	7.93E-09	1.78E+04	5.25E+09	1.41E-02	4.16E+01
CAPB-8	2.06E-08	4.42E+04	1.68E+10	9.10E-02	3.46E+02
CAPB-9	9.25E-09	2.54E+04	9.26E+09	2.35E-02	8.56E+01
CAPB-10	8.53E-08	4.74E+04	1.72E+10	4.05E-01	1.47E+03
CAPB-11	4.35E-08	3.72E+04	1.29E+10	1.62E-01	5.61E+02
CAPB-12	1.70E-06	1.18E+02	4.85E+06	2.01E-02	8.25E+00
CAPB-13	2.30E-09	8.48E+03	8.36E+08	1.95E-03	1.93E+00
CAPB-14	2.26E-06	1.69E+04	4.96E+09	3.82E+00	1.12E+04
CAPB-15	2.12E-06	4.65E+04	1.80E+10	9.86E+00	3.82E+04
CAPB-16	1.18E-09	1.93E+04	6.28E+09	2.27E-03	7.40E+00
CAPB-17	6.91E-09	5.12E+04	1.98E+10	3.54E-02	1.37E+02
CAPB-18	4.61E-10	2.58E+04	8.43E+09	1.19E-03	3.88E+00
CAPB-19	2.43E-08	5.72E+04	2.11E+10	1.39E-01	5.12E+02
			Totals	**1.46E+01**	**5.26E+04**

1. 1 sv = 100 rem
2. 5.49E-06 (person-rem/yr) = 9.51E-08 (/yr) x 5.77E-01 (person-sv) x 100 (rem/sv)

Table E.1-16 Updated Summary of Offsite Consequence Sensitivity Results

	Population Dose (person-sv)			Offsite Economic Cost ($)		
Release Mode	Base Case	2–hr delayed evacuation	Lower speed of evacuation	Base Case	2–hr delayed evacuation	Lower speed of evacuation
CAPB-1	5.77E-01	5.77E-01	5.77E-01	3.82E+06	3.82E+06	3.82E+06
CAPB-2	1.21E+02	1.21E+02	1.21E+02	7.18E+06	7.18E+06	7.18E+06
CAPB-3	1.28E+02	1.28E+02	1.28E+02	7.31E+06	7.31E+06	7.31E+06
CAPB-4	1.50E+04	1.51E+04	1.51E+04	4.93E+09	4.93E+09	4.93E+09
CAPB-5	1.92E+04	1.93E+04	1.93E+04	6.15E+09	6.15E+09	6.15E+09
CAPB-6	1.60E+04	1.61E+04	1.61E+04	4.35E+09	4.35E+09	4.35E+09
CAPB-7	1.78E+04	1.79E+04	1.79E+04	5.25E+09	5.25E+09	5.25E+09
CAPB-8	4.42E+04	4.49E+04	4.50E+04	1.68E+10	1.68E+10	1.68E+10
CAPB-9	2.54E+04	2.55E+04	2.56E+04	9.26E+09	9.26E+09	9.26E+09
CAPB-10	4.74E+04	4.77E+04	4.79E+04	1.72E+10	1.72E+10	1.72E+10
CAPB-11	3.72E+04	3.75E+04	3.76E+04	1.29E+10	1.29E+10	1.29E+10
CAPB-12	1.18E+02	1.18E+02	1.19E+02	4.85E+06	4.85E+06	4.85E+06
CAPB-13	8.48E+03	8.48E+03	8.49E+03	8.36E+08	8.36E+08	8.36E+08
CAPB-14	1.69E+04	1.69E+04	1.69E+04	4.96E+09	4.96E+09	4.96E+09
CAPB-15	4.65E+04	4.67E+04	4.69E+04	1.80E+10	1.80E+10	1.80E+10
CAPB-16	1.93E+04	1.94E+04	1.95E+04	6.28E+09	6.28E+09	6.28E+09
CAPB-17	5.12E+04	5.14E+04	5.17E+04	1.98E+10	1.98E+10	1.98E+10
CAPB-18	2.58E+04	2.59E+04	2.61E+04	8.43E+09	8.43E+09	8.43E+09
CAPB-19	5.72E+04	5.75E+04	5.78E+04	2.11E+10	2.11E+10	2.11E+10