October 6, 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 9

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

LETTER NUMBER: 2.06.089

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 six attachments. Attachment A contains the list of revised regulatory commitments. Attachment B contains the response to the requests for additional information (RAIs) on aging management review in LRA Section 3.2 Engineered Safety Features, conveyed in NRC letter dated September 8, 2006. Attachment C contains the response to the RAIs on time limited aging analysis in LRA Section 4.2 Reactor Vessel Neutron Embrittlement, conveyed in NRC letter dated September 8, 2006. Attachment D contains the response to the RAIs on metal fatigue in LRA Section 4.3.1.2 Reactor Vessel Internals, conveyed in NRC letter dated September 7, 2006. Attachment E contains population dose risk reduction for severe accident mitigation alternatives requested in a telephone conference call with the NRC license renewal staff on September 26, 2006. Attachment F contains changes to the LRA and other changes and clarifications stemming from telephone conference calls with the NRC license renewal staff on September 6, 2006 and September 25, 2006, and request for clarification of commitments identified by the NRC license renewal staff on October 4, 2006.

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 October 6, 2006.

(Original signed by B. Ford for S. Bethay)

Stephen J. Bethay
Director, Nuclear Safety Assessment

DWE/dl
Attachments: (as stated)
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

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

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

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

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

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

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

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

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

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

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

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

NRC Resident Inspector
Pilgrim Nuclear Power Station

ATTACHMENT E to Letter 2.06.089
(4 pages)

Population Dose Risk Reduction for Severe Accident Mitigation Alternatives
Requested in Telephone Conference with NRC License Renewal Staff on September 26, 2006

The table beginning on the next page contains population dose risk (PDR) reduction in units of % for each Severe Accident Mitigation Alternative (SAMA) and for RAIs 5e, 5f, 5g, and 5h.

To three significant digits, the values for CDF, PDR, and OECR SAMAs 6 (equivalent to 18 and 20), 48, and 52 are as follows:

Initial Analysis				Re-analysis		
SAMA	CDF	PDR	OECR	CDF	PDR	OECR
6,18,20	6.41E-06	1.35E+01	4.59E+04	6.41E-06	1.46E+01	5.26E+04
48	6.41E-06	1.35E+01	4.59E+04	6.41E-06	1.46E+01	5.26E+04
52	6.40E-06	1.35E+01	4.59E+04	6.40E-06	1.46E+01	5.26E+04
Base	6.41E-06	1.36E+01	4.59E+04	6.41E-06	1.46E+01	5.26E+04

Small benefits could result from minor differences in CDF, PDR, or OECR. For example, slight difference in PDR for SAMA 6 and Base results in a benefit of $2,153 and an upper bound benefit of $12,915 with a multiplier of 6 in the initial analysis supporting Appendix E Attachment E, submitted as part of the License Renewal Application (January 25, 2006). However, there is no such difference for the reanalysis. Therefore, the estimated benefit for SAMA 6 is $0 (zero dollars).

Also, the Reduction in Off-site Economic Cost Risk (OECR) reduction for SAMA 27 on Table RAI.6-1 should be 15.02% (same as RAI 5e) rather than 1.71%.

Reduction in Population Dose Risk (PDR)

SAMA ID	SAMA Description	PDR Reduction (%)
1	Install an independent method of suppression pool cooling.	4.79%
2	Install a filtered containment vent to provide fission product scrubbing.	18.49%
3	Install a containment vent large enough to remove ATWS decay heat.	1.37%
4	Create a large concrete crucible with heat removal potential under the base mat to contain molten core debris.	48.97%
5	Create a water-cooled rubble bed on the pedestal.	48.97%
6	Provide modification for flooding the drywell head.	0.00%
7	Enhance fire protection system and standby gas treatment system hardware and procedures.	1.37%
8	Create a core melt source reduction system.	48.97%
9	Install a passive containment spray system.	4.79%
10	Strengthen primary and secondary containment.	26.03%
11	Increase the depth of the concrete basemat or use an alternative concrete material to ensure melt-through does not occur	0.68%
12	Provide a reactor vessel exterior cooling system	0.00%
13	Construct a building to be connected to primary/ secondary containment that is maintained at a vacuum	1.37%
14	Dedicated Suppression Pool Cooling	4.79%
15	Create a larger volume in containment.	26.03%
16	Increase containment pressure capability (sufficient pressure to withstand severe accidents).	26.03%
17	Install improved vacuum breakers (redundant valves in each line).	0.00%
18	Increase the temperature margin for seals.	0.00%
19	Install a filtered vent	18.49%
20	Provide a method of drywell head flooding.	0.00%
21	Use alternate method of reactor building spray.	1.37%
22	Provide a means of flooding the rubble bed.	22.60%
23	Install a reactor cavity flooding system.	48.97%
24	Add ribbing to the containment shell.	26.03%
25	Provide additional DC battery capacity.	2.74%

Reduction in Population Dose Risk (PDR)

SAMA ID	SAMA Description	PDR Reduction (%)
26	Use fuel cells instead of lead-acid batteries.	2.74%
27	Modification for Improving DC Bus Reliability	16.44%
28	Provide 16-hour SBO injection.	2.74%
29	Provide an alternate pump power source.	5.48%
30	AC Bus Cross-Ties	8.22%
31	Add a dedicated DC power supply.	16.44%
32	Install additional batteries or divisions.	16.44%
33	Install fuel cells.	2.74%
34	DC Cross-Ties	2.05%
35	Extended SBO provisions.	2.74%
36	Locate RHR inside containment.	0.00%
37	Increase frequency of valve leak testing.	0.68%
38	Improve MSIV design.	0.00%
39	Install an independent diesel for the CST makeup pumps.	0.00%
40	Provide an additional high pressure injection pump with independent diesel.	2.05%
41	Install independent AC high pressure injection system.	2.05%
42	Install a passive high pressure system.	2.05%
43	Improved high pressure systems	1.37%
44	Install an additional active high pressure system.	2.05%
45	Add a diverse injection system.	2.05%
46	Increase SRV reseat reliability.	0.68%
47	Install an ATWS sized vent.	1.37%
48	Diversify explosive valve operation.	0.00%
49	Increase the reliability of SRVs by adding signals to open them automatically.	0.68%
50	Improve SRV design.	3.42%
51	Provide self-cooled ECCS pump seals.	0.68%

Reduction in Population Dose Risk (PDR)

SAMA ID	SAMA Description	PDR Reduction (%)
52	Provide digital large break LOCA protection.	0.00%
53	Control containment venting within a narrow band of pressure	4.79%
54	Install a bypass switch to bypass the low reactor pressure interlocks of LPCI or core spray injection valves.	0.68%
55	Improve SSW System and RBCCW pump recovery.	6.85%
56	Provide redundant DC power supplies to DTV valves.	3.42%
57	Proceduralize the use of diesel fire pump hydroturbine in the event of EDG A failure or unavailability.	3.42%
58	Proceduralize the operator action to feed B1 loads via B3 when A5 is unavailable post-trip.	3.42%
59	Provide redundant path from fire protection pump discharge to LPCI loops A and B cross-tie.	17.12%
RAI 5e	Equivalent to SAMA 27	16.44%
RAI 5f	Firewater injection	4.11%
RAI 5g	Reduntant diesel firewater pump	8.22%
RAI 5h	Passive direct torus vent	14.38%