



Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
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Plymouth, MA 02360

Stephen J. Bethay  
Director, Nuclear Assessment

October 14, 2008

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

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

Response to Request for Additional Information to Support the  
Review of the Pilgrim Nuclear Power Station Spent Fuel  
Management Plan Pursuant to 10 CFR 50.54(bb) and the  
Preliminary Decommissioning Cost Estimate Pursuant to  
10 CFR 50.75(f)(3) (TAC NOS. MD8036 and MD9416)

REFERENCE: 1. NRC Letter, "Request for Additional Information to Support the  
Review of the Pilgrim Nuclear Power Station Spent Fuel  
Management Plan Pursuant to 10 CFR 50.54(bb) and the  
Preliminary Decommissioning Cost Estimate Pursuant to  
10 CFR 50.75(f)(3) (TAC NOS. MD8036 and MD9416)", dated  
September 12, 2008

2. Entergy Letter, "Spent Fuel Management Plan Submittal in  
accordance with 10 CFR 50.54(bb)", dated June 7, 2007

3. Entergy Letter, "PNPS Report Pursuant to 10 CFR 50.75(f)(3)",  
dated July 31, 2008

4. Entergy Letter, "Annual Report of Proof of Financial  
Protection", dated March 26, 2008

LETTER NUMBER: 2.08.052

Dear Sir or Madam:

This letter provides the response to the NRC Request for Additional Information (Reference 1) regarding Entergy Nuclear Operations, Inc. (ENO), Pilgrim Nuclear Power Station's (PNPS) following documents: "Spent Fuel Management Plan Submittal in accordance with 10 CFR 50.54(bb)", dated June 7, 2007 (Reference 2) and "PNPS Report Pursuant to 10 CFR 50.75(f)(3)", dated July 31, 2008 (Reference 3). The additional information is provided in Attachment 1 to this letter.

Accol  
WRR

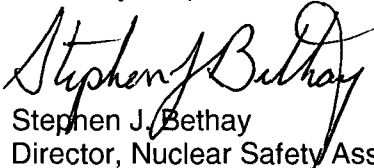
If you have any questions or require additional information, please contact Mr. Joseph R. Lynch, Licensing Manager, at (508) 830-8403.

This letter contains no commitments.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 14<sup>th</sup> of October 2008.

Sincerely,



Stephen J. Bethay  
Director, Nuclear Safety Assurance

MJG/dl

Attachment: 1. Entergy Response to NRC Request for Additional Information to Support the Review of the Pilgrim Nuclear Power Station Spent Fuel Management Plan Pursuant to 10 CFR 50.54(bb) and the Preliminary Decommissioning Cost Estimate Pursuant to 10 CFR 50.75(f)(3) (TAC NOS. MD8036 and MD9416)

cc: Mr. James S. Kim, Project Manager  
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Senior Resident Inspector  
Pilgrim Nuclear Power Station

**Attachment 1 to Letter 2.08.052**

**Entergy Response to NRC Request for Additional Information to Support the Review of  
the Pilgrim Nuclear Power Station Spent Fuel Management Plan Pursuant to  
10 CFR 50.54(bb) and the Preliminary Decommissioning Cost Estimate Pursuant to  
10 CFR 50.75(f)(3) (TAC NOS. MD8036 and MD9416)  
(5 Pages)**

Entergy Response to NRC Request for Additional Information to Support the Review of  
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**Spent Fuel Management Program (SFMP) and Preliminary Decommissioning Cost  
Estimate (PDCE)**

**NRC RAI No. 1: Section 5 of the SFMP, Financial Assurance and Section 1.7.1 of  
the PDCE, Spent Fuel Disposition**

Pilgrim stated in both Section 5 of the SFMP and in Section 1.7.1. of the PDCE, the cost associated with the isolation and continued operation of the spent fuel pool, and the construction and operation of the Independent Spent Fuel Storage Installation (ISFSI) would be covered by the decommissioning trust funds. The costs are identified in Table 5 and included in the decommissioning cost estimate in Table 8 of PDCE.

Withdrawals from decommissioning trust funds under 10 CFR 50.82(a)(8)(i)(A) are limited to legitimate decommissioning activities consistent with the definition of decommissioning. In addition, withdrawals under 10 CFR 50.82(a)(8)(i)(C) are not permitted if they would inhibit the ability of the licensee to complete funding of any shortfalls in the decommissioning trust needed to ensure the availability of funds to ultimately release the site and terminate the license. For the scenario that was identified in Pilgrim's submittal, Pilgrim did acknowledge in their discussion the necessity for an exemption in accordance with 10 CFR 50.12, from the requirements of 10 CFR 50.82(a)(8)(i)(A) in order to use the decommissioning trust funds for spent fuel management expenses. What is the source of funds to address the annual spent fuel costs identified in Table 5 of the PDCE?

**Entergy Response:**

Pilgrim Nuclear Power Station (PNPS) Spent Fuel Management plan assumes withdrawals from the decommissioning trust for spent fuel management purposes. Entergy will make appropriate submittals for an exemption in accordance with 10 CFR §50.12 from the requirements of 10 CFR §50.82(a)(8)(i)(A) in order to use the decommissioning trust funds for spent fuel management expenses.

Entergy will also monitor the decommissioning fund to ensure that spent fuel management withdrawals will not inhibit the ability of Entergy to complete radiological decommissioning.

It should be noted that the projected expenditures for spent fuel management identified in the preliminary decommissioning cost analysis do not include any credit or offset for costs that may be incurred by the licensee, Entergy Nuclear Operations, Inc. (ENO), as a result of the Department of Energy's (DOE) failure in the timely removal of spent fuel from the site pursuant to the DOE contractual obligations (Nuclear Waste Policy Act). ENO believes that the extended spent fuel management costs are compensable damages incurred by ENO that should be paid by DOE because DOE failed to comply with the contractual obligations for the disposal of spent fuel for the site. This would provide an alternate source of funds for spent fuel management, and as such, the results of litigation or potential changes in future government policy could reduce or eliminate the need to make withdrawals from the trust fund for spent fuel management. However, the analysis for the Spent Fuel Management Program conservatively assumes that these costs are not recovered from DOE.

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**Preliminary Decommissioning Cost Estimate (PDCE)**

**NRC RAI No. 2: Section 2.2 Financial Assurance of the PDCE**

In Section 2.2, Pilgrim stated that their analysis, whose results are shown in Table 8 of the July 31, 2008, submittal, was based on a 3-percent inflation rate. Was the 3-percent inflation rate based on the information identified in Section 2.1, "Escalation of the 2005 Costs to 2007 Dollars" or was it based on a different analysis? Based on the information provided in Section 2.1, the NRC staff could not reproduce the 3-percent inflation rate. Pilgrim should provide the supporting analysis that was used to develop the 3-percent escalation rate.

**Entergy Response:**

A 3% inflation rate (along with a 5% earnings rate) has been used by the licensee in the past to escalate the estimated decommissioning cost in the 10 CFR 50.75(f)(1) reports on the status of the decommissioning funding for the Pilgrim Nuclear Power Station (Reference 4). It was used in the Table 8 analyses for consistency with the assumptions in the 50.75(f)(1) reports for future escalation of decommissioning costs.

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**NRC RAI No. 3: Section 2.2 Financial Assurance of the PDCE**

Section 2.2 stated that Pilgrim used a 1.47 percent real rate of return to produce the results listed in Table 8. The staff applied both the Pilgrim's 1.47 percent real rate of return as well as a 2 percent real rate of return. The staff analysis was based on a trust balance of \$621.76 million and a license termination date of 2012 and deducted the expenses identified in Table 7, "Pilgrim Nuclear Power Station Schedule of Annual Expenditures, License Termination and Spent Fuel Management Allocations." The staff analysis did not support the conclusion that sufficient funds would be available to decommission Pilgrim starting in 2043 applying the licensee's real rate of return of 1.47 percent. In addition, the staff could not reconcile the differences between Pilgrim's and the staff's approaches for analyzing the decommissioning trust fund balance and projected expenditures. The licensee should provide the supporting analysis for values/cost identified in each of the columns listed in Table 8.

**Entergy Response:**

The original Table 8 displays the results of a present value method which solved for the required rate of return necessary to end up with a net zero balance for the trust fund at the completion of decommissioning. The analysis showed a real rate of return less than 2% would be required for this scenario.

However, a more basic method that the licensee believes is acceptable to the Staff is to escalate the trust fund balance of \$621.74 million assuming a 2% rate of return and compare the earnings against the costs shown in Table 7 for license termination and spent fuel. As shown in the attached Revised Table 8; this results in a positive balance at the conclusion of decommissioning, confirming that there are more than sufficient funds for both activities (radiological and spent fuel). The licensee requests that the Staff substitute the Revised Table 8 in the licensee's plan for the original Table 8. The calculation methodology for Revised Table 8 is shown at the end of the table.

(Using the values of 3% inflation and 4.47% in the attached table, the decommissioning trust fund would net to \$0 at the conclusion of the decommissioning process, consistent with the analysis previously provided in the original Table 8.)

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**Pilgrim Nuclear Station  
Decommissioning Funding Plan**  
(thousands of 2007 dollars)  
**Table 8 (Revised)**

Basis Year		2007			
Fund Balance		\$621.740	(millions)		
Annual Escalation		0.00%			
Annual Earnings		2.00%			
	A	B	C	D	E
	50.75 License Termination Cost (millions)	50.54(bb) Spent Fuel Management Cost (millions)	Total License Termination and Spent Fuel Management Cost (millions)	Total Cost Escalated at 0% (millions)	Decommissioning Trust Fund Escalated at 2% (minus expenses) (millions)
Year					
2007	-	-		-	621.740
2008	-	-		-	634.175
2009	-	-		-	646.858
2010	-	-		-	659.795
2011	-	-		-	672.991
2012	28.119	7.203	35.322	35.322	651.129
2013	75.178	12.725	87.903	87.903	576.249
2014	0.655	35.706	36.361	36.361	551.413
2015	0.655	35.706	36.361	36.361	526.080
2016	0.657	35.804	36.461	36.461	500.141
2017	0.655	33.783	34.438	34.438	475.705
2018	0.655	6.456	7.111	7.111	478.109
2019	0.655	6.456	7.111	7.111	480.560
2020	0.657	6.474	7.131	7.131	483.040
2021	0.655	6.456	7.111	7.111	485.590
2022	0.655	6.456	7.111	7.111	488.190
2023	0.655	6.456	7.111	7.111	490.843
2024	0.657	6.474	7.131	7.131	493.529
2025	0.655	6.456	7.111	7.111	496.289
2026	0.655	6.456	7.111	7.111	499.104
2027	0.655	6.456	7.111	7.111	501.975
2028	0.657	6.474	7.131	7.131	504.883
2029	0.655	6.456	7.111	7.111	507.870
2030	0.655	6.456	7.111	7.111	510.916
2031	0.655	6.456	7.111	7.111	514.023
2032	0.657	6.474	7.131	7.131	517.173
2033	0.655	6.456	7.111	7.111	520.405

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**Pilgrim Nuclear Station  
Decommissioning Funding Plan**  
(thousands of 2007 dollars)  
**Table 8 (Revised)**

Basis Year	2007				
Fund Balance	\$621.740	(millions)			
Annual Escalation	0.00%				
Annual Earnings	2.00%				
	A	B	C	D	E
Year	50.75 License Termination Cost (millions)	50.54(bb) Spent Fuel Management Cost (millions)	Total License Termination and Spent Fuel Management Cost (millions)	Total Cost Escalated at 0% (millions)	Decommissioning Trust Fund Escalated at 2% (minus expenses) (millions)
2034	0.655	6.456	7.111	7.111	523.703
2035	0.655	6.456	7.111	7.111	527.066
2036	0.657	6.474	7.131	7.131	530.476
2037	0.655	6.456	7.111	7.111	533.974
2038	0.655	6.456	7.111	7.111	537.543
2039	0.655	6.456	7.111	7.111	541.183
2040	0.657	6.474	7.131	7.131	544.875
2041	0.655	6.456	7.111	7.111	548.662
2042	0.767	6.438	7.205	7.205	552.430
2043	41.452	-	41.452	41.452	522.027
2044	102.047	-	102.047	102.047	430.420
2045	95.513	1.246	96.759	96.759	342.270
2046	74.110	1.684	75.794	75.794	273.321
2047	74.110	1.684	75.794	75.794	202.993
2048	39.177	0.426	39.603	39.603	167.450
2049	0.798	1.013	1.811	1.811	168.988
2050	0.182	0.230	0.412	0.412	171.956
	549.81	328.70	878.51	878.51	

Calculations:

Column C = A + B

Column D = (C)\*(1+0%)^(current year – 2007) or for 0%, D = C

Column E = (Previous year's fund balance) \* (1 + .02) – D (current year's decommissioning expenditures)