

Entergy Nuclear Operations, Inc. 440 Hamilton Avenue White Plains, NY 10601 Tel: 914-272-3370

John F. McCann Vice President, Nuclear Safety, Emergency Planning and Licensing

March 31, 2011

ENOC-11-0005

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

- SUBJECT: Status of Decommissioning Funding for Plants Operated by Entergy Nuclear Operations, Inc. For Year Ending December 31, 2010 - 10 CFR 50,75(f)(1) Entergy Nuclear Operations, Inc. Indian Point Nuclear Generating Stations 1, 2 and 3 Docket Nos. 50-3, 50-247 and 50-286 Vermont Yankee Nuclear Power Station Docket No. 50-271 **Pilgrim Nuclear Power Station** Docket No. 50-293 James A. FitzPatrick Nuclear Power Plant Docket No. 50-333 Palisades Nuclear Plant Docket No. 50-255 **Big Rock Point** Docket 50-155
- REFERENCES: 1. NUREG-1307, "Report on Waste Burial Charges," Revision 14, dated November 2010.
  - 2. NRC Regulatory Issue Summary 2001-07, "10 CFR 50.75(f)(1) Reports on the Status of Decommissioning Funds (Due March 31, 2001)."

Dear Sir or Madam:

10 CFR 50.75(f)(1) requires each power reactor licensee to report to the NRC by March 31, 1999, and every two years thereafter, on the status of its decommissioning funding for each reactor, or share of a reactor, that it owns. On behalf of Entergy Nuclear Indian Point 2 LLC, Entergy Nuclear Indian Point 3 LLC, Entergy Nuclear Vermont Yankee LLC, Entergy Nuclear Generation Company (Pilgrim Station), Entergy Nuclear FitzPatrick LLC, and Entergy Nuclear Palisades LLC (Palisades and Big Rock Point), Entergy Nuclear Operations, Inc. hereby submits the information requested for power reactors operated by Entergy Nuclear Operations, Inc. The reports, provided in Attachments 1 through 13, respectively, for the six

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listed plants, were prepared in accordance with NUREG-1307 (Reference 1) and NRC Regulatory Issue Summary 2001-07 (Reference 2). Attachments 14 and 15 are updated site specific decommissioning cost estimates for IP 1 and 2. Attachment 16 includes Minimum Funding Assurance calculation worksheets for the plants (derived from LIC-205 Revision 4), provided for the convenience of the reviewer.

The aforementioned worksheets, using the December 31, 2010 trust fund balances and parent guarantee amounts, indicate that all of the plants covered by this submittal met or exceeded the NRC's funding requirements, except that Palisades was just under one percent below the requirement. Since December 31, 2010, the Palisades' decommissioning trust fund has experienced an increase (as have the available funds for all the plants in this submittal). Entergy Nuclear Operations, Inc. has recomputed the financial assurance for Palisades using the most recent month end and available balance information, i.e., for February 28, 2011, and provided a revised calculation worksheet for Palisades. The revised worksheet is included in Attachment 16, behind the worksheet for the December 31, 2010 balance for Palisades, indicating a March 1, 2011 date for the analysis (also removing two months from the escalation calculations). The revised worksheet indicates that the currently-available financial assurance for Palisades now exceeds the NRC's funding requirements. Accordingly, the licensee concludes that no further action is required at this time to demonstrate adequate funding assurance for decommissioning Palisades.

On March 21, 2011, the NRC issued a renewed operating license for Vermont Yankee (ML092110050), authorizing operation of that plant for an additional twenty years. As a result of this renewed license, Entergy Nuclear Operations, Inc. has calculated that Vermont Yankee now has an approximately \$211 million surplus over the NRC's minimum amount for financial assurance for decommissioning, rendering the existing parent company guarantee for additional financial assurance in the amount of \$40 million for that plant no longer necessary. Accordingly, Entergy Nuclear Operations, Inc. intends to take the necessary steps to cancel the aforementioned parent company guarantee.

There are no new commitments made in this letter. If you have any questions, please contact Mr. Bryan Ford at 601-368-5516.

Sincerely,

JFM/CDF/LAE Attachments: As described above

cc: See next page.

cc: All Below with Attachments Mr. J. A. Aluise (ENT) Mr. M. A. Balduzzi (WPO) Mr. K. H. Bronson (JAF) Mr. M. J. Colomb (EVY) Ms. W. C. Curry (ECH) Mr. T. P. Kirwin (PLP) Mr. J. F. McCann (WPO) Mr. J. E. Pollock (IPEC) Mr. L. Jager Smith (Wise, Carter) Mr. R. G. Smith (PNP)

**USNRC** Regional Administrator, Region I **USNRC** Regional Administrator, Region III USNRC Project Manager, Indian Point 1 USNRC Project Manager, Indian Point 2 **USNRC Project Manager, Indian Point 3** USNRC Project Manager, FitzPatrick **USNRC** Project Manager, Vermont Yankee **USNRC** Project Manager, Pilgrim **USNRC** Project Manager, Palisades USNRC Project Manager, Big Rock Point **USNRC** Resident Inspector, Indian Point 2 **USNRC** Resident Inspector, Indian Point 3 **USNRC** Resident Inspector, FitzPatrick **USNRC** Resident Inspector, Vermont Yankee **USNRC** Resident Inspector, Pilgrim **USNRC** Resident Inspector, Palisades Michigan Department of Environmental Quality Michigan Public Service Commission

Ms. Elizabeth Miller, Commissioner Department of Public Service 120 State Street – Drawer 20 Montpelier, VT 05602

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## Entergy Nuclear Operations, Inc. Status of Decommissioning Funding - Indian Point 1 For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

### Plant Name: Indian Point Nuclear Generating Unit No. 1

1.	Minimum Financial Assurance (MFA) estimated per 10 CFR 50.75(b) and (c) (2010\$)	\$ 464.84 million <sub>(Note)</sub>
2.	Decommissioning Trust Fund Total as of 12/31/10	\$ 286.86 million
3.	A schedule of the annual amounts remaining to be collected	None
4.	Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
5.	Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
6.	Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	None
7.	Any material changes to trust agreements	None

Note: This amount is based upon total SAFSTOR expenditures set forth in the updated Decommissioning Funding Assurance Plan and SAFSTOR analysis that are provided in Attachment 14. (Calculation of the NRC Minimum Amount is provided in Attachment 4.)

### Entergy Nuclear Operations, Inc. Status of Decommissioning Funding - Indian Point 2 For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

## Plant Name: Indian Point Nuclear Generating Unit No. 2

1.	Minimum Financial Assurance (MFA) estimated per 10 CFR 50.75(b) and (c) (2010\$)	\$ 696.20 million [Note 1]
2.	Decommissioning Trust Fund Total as of 12/31/10	\$ 374.74 million
3.	A schedule of the annual amounts remaining to be collected	None
4.	Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
5.	Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
6.	Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	None
7.	Any material changes to trust agreements	None

Note 1:This amount is based upon total SAFSTOR expenditures set forth in the updated Decommissioning Funding Assurance Plan and SAFSTOR analysis provided in Attachment 15. (Calculation of the NRC Minimum Amount is provided in Attachment 4.) Note 2:Includes provisional fund balance of \$30.11 million.

# Entergy Nuclear Operations, Inc. Status of Decommissioning Funding – Indian Point 3 For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

# Plant Name: Indian Point Nuclear Generating Unit No. 3

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1.	Minimum Financial Assurance (MFA) estimated per 10 CFR 50.75(b) and (c) (2010\$)	\$ 474.22 million
2.	Decommissioning Trust Fund Total as of 12/31/10	\$ 493.33 million
3.	A schedule of the annual amounts remaining to be collected	None
4.	Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
5.	Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
6.	Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	None
7.	Any material changes to trust agreements	None

Note: Calculation of the NRC Minimum Amount is provided in Attachment 4.

### Entergy Nuclear Operations, Inc. Calculation of Minimum Amount – Indian Point For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Entergy Nuclear Indian Point 2, LLC: 100% ownership interest of Indian Point 1 & 2 Entergy Nuclear Indian Point 3, LLC: 100% ownership interest of Indian Point 3 Plant Location: Buchanan, New York Reactor Type: Pressurized Water Reactor ("PWR") Indian Point Unit 1 Power Level: <3,400 MWt (615 MWt) Indian Point Unit 1 PWR Base Year 1986\$: \$85,560,000 Indian Point Unit 2 Power Level: <3,400 MWt (3,216 MWt) Indian Point Unit 2 PWR Base Year 1986\$: \$103,300,800 Indian Point Unit 3 Power Level: <3,400 MWt (3,216 MWt) Indian Point Unit 3 PWR Base Year 1986\$: \$103,300,800 Labor Region: North Waste Burial Facility: Generic Disposal Site

#### 10CFR50.75(c)(2) Escalation Factor Formula: 0.65(L) +0.13(E) +0.22(B)

L=Labor (North) E=Energy (PWR) B=Waste Burial-Vendor (PWR)	<u>Factor</u> 2.45 <sup>1</sup> 2.263 <sup>2</sup> 12.28 <sup>3</sup>
PWR Escalation Factor: 0.65(L) +0.13(E) +0.22(B)=	4.590710

1986 PWR Base Year \$ Escalated:	
Indian Point 1: \$85,560,000 * Factor=	<u>\$392,781,200</u>
Indian Point 2 & 3: \$103,300,800 * Factor=	\$474,224,079

<sup>&</sup>lt;sup>1</sup> Bureau of Labor Statistics, Series Report ID: CIU201000000210i (4<sup>th</sup> Quarter 2010) <sup>2</sup> Bureau of Labor Statistics, Series Report ID: www.9542 and www.9572 (December 2010)

<sup>&</sup>lt;sup>2</sup> Bureau of Labor Statistics, Series Report ID: wpu0543 and wpu0573 (December 2010)

<sup>&</sup>lt;sup>3</sup> Nuclear Regulatory Commission: NUREG-1307 Revision 14, Table 2.1 (2010)

# Entergy Nuclear Operations, Inc. Status of Decommissioning Funding Vermont Yankee For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

### Plant Name: Vermont Yankee Nuclear Power Station

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1.	Minimum Financial Assurance (MFA) estimated per 10 CFR 50.75(b) and (c) (2010\$)	\$ 564.25 million <sup>[Note 1]</sup>
2.	Decommissioning Trust Fund Total as of 12/31/10	\$ 474.22 million <sup>[Note 2]</sup>
3.	A schedule of the annual amounts remaining to be collected	None
4.	Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
5.	Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
6.	Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	See Note 3
7.	Any material changes to trust agreements	None

Note 1: Calculation of the NRC Minimum Amount is provided in Attachment 6.

Note 2:Does not include the Parent Guarantee amount as indicated in Note 3.

Note 3:A \$40 million Parent Guarantee is in place.

### Entergy Nuclear Operations, Inc. Calculation of Minimum Amount – Vermont Yankee For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Entergy Nuclear Vermont Yankee LLC.: 100% ownership interest Plant Location: Vernon, Vermont Reactor Type: Boiling Water Reactor ("BWR") Power Level: <3,400 MWt (1912 MWt) BWR Base Year 1986\$: \$121,208,000 Labor Region: North Waste Burial Facility: Generic Disposal Site

### 10CFR50.75(c)(2) Escalation Factor Formula: 0.65(L) +0.13(E) +0.22(B)

	Factor
L=Labor (North)	2.45 <sup>1</sup>
E=Energy (BWR)	2.319 <sup>2</sup>
B=Waste Burial-Vendor (BWR)	12.54 <sup>3</sup>

#### **BWR Escalation Factor:**

0.65(L) +0.13(E	) +0.22(B)=	4.655187
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#### **1986 BWR Base Year \$ Escalated:**

\$121,208,000 * Factor= \$5	564,245,876
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<sup>&</sup>lt;sup>1</sup> Bureau of Labor Statistics, Series Report ID: CIU201000000210i (4<sup>th</sup> Quarter 2010)

<sup>&</sup>lt;sup>2</sup> Bureau of Labor Statistics, Series Report ID: wpu0543 and wpu0573 (December 2010)

<sup>&</sup>lt;sup>3</sup> Nuclear Regulatory Commission: NUREG-1307 Revision 14, Table 2.1 (2010)

# Entergy Nuclear Operations, Inc. Status of Decommissioning Funding - Pilgrim For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

## Plant Name: Pilgrim Nuclear Power Station

1.	Minimum Financial Assurance (MFA) estimated per 10 CFR 50.75(b) and (c) (2010\$)	\$ 569.11 million <sup>[Note]</sup>
3.	Decommissioning Trust Fund Total as of 12/31/10	\$ 645.92 million
3.	A schedule of the annual amounts remaining to be collected	None
4.	Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
5.	Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
6.	Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	None
7.	Any material changes to trust agreements	None

Note: Calculation of the NRC Minimum Amount is provided in Attachment 8.

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#### Entergy Nuclear Operations, Inc. Calculation of Minimum Amount - Pilgrim For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Entergy Nuclear Generation Co.: 100% ownership interest Plant Location: Plymouth, Massachussetts Reactor Type: Boiling Water Reactor ("BWR") Power Level: <3,400 MWt (2028 MWt) BWR Base Year 1986\$: \$122,252,000 Labor Region: North Waste Burial Facility: Generic Disposal Site

# 10CFR50.75(c)(2) Escalation Factor Formula:

0.65(L) +0.13(E) +0.22(B)

	<u>⊢actor</u>
L=Labor (North)	2.45 <sup>1</sup>
E=Energy (BWR)	2.319 <sup>2</sup>
B=Waste Burial-Vendor (BWR)	12.54 <sup>3</sup>

#### **BWR Escalation Factor:**

0.65(L) +0.13(E) +0.22(B)= 4.655187

**1986 BWR Base Year \$ Escalated:** 

\$122,252,000 \* Factor=

\$569,105,891

<sup>&</sup>lt;sup>1</sup> Bureau of Labor Statistics, Series Report ID: CIU201000000210i (4<sup>th</sup> Quarter 2010) <sup>2</sup> Bureau of Labor Statistics, Series Report ID: www.9542 and www.9542 (December 2014)

<sup>&</sup>lt;sup>2</sup> Bureau of Labor Statistics, Series Report ID: wpu0543 and wpu0573 (December 2010)

<sup>&</sup>lt;sup>3</sup> Nuclear Regulatory Commission: NUREG-1307 Revision 14, Table 2.1 (2010)

# Entergy Nuclear Operations, Inc. Status of Decommissioning Funding – James A. Fitzpatrick For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

## Plant Name: James A. Fitzpatrick Nuclear Power Plant

1.	Minimum Financial Assurance (MFA) estimated per 10 CFR 50.75(b) and (c) (2010\$)	\$ 590.39 million <sup>[Note]</sup>
2.	Decommissioning Trust Fund Total as of 12/31/10	\$ 538.31 million
3.	A schedule of the annual amounts remaining to be collected	None
4.	Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
5.	Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
6.	Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	None
7.	Any material changes to trust agreements	None

Note: Calculation of the NRC Minimum Amount is provided in Attachment 10.

#### Entergy Nuclear Operations, Inc. Calculation of Minimum Amount – James A. Fitzpatrick For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Entergy Nuclear FitzPatrick LLC.: 100% ownership interest Plant Location: Oswego, New York Reactor Type: Boiling Water Reactor ("BWR") Power Level: <3,400 MWt (2536 MWt) BWR Base Year 1986\$: \$126,824,000 Labor Region: North Waste Burial Facility: Generic Disposal Site

#### 10CFR50.75(c)(2) Escalation Factor Formula: 0.65(L) +0.13(E) +0.22(B)

	<u>Factor</u>
L=Labor (North)	2.45 <sup>1</sup>
E=Energy (BWR)	2.319 <sup>2</sup>
B=Waste Burial-Vendor (BWR)	12.54 <sup>3</sup>

#### **BWR Escalation Factor:**

0.65(L) +0.13(E) +0.22(B)= 4.655187

**1986 BWR Base Year \$ Escalated:** 

\$126,824,000 \* Factor=

\$590,389,405

<sup>&</sup>lt;sup>1</sup> Bureau of Labor Statistics, Series Report ID: CIU201000000210i (4<sup>th</sup> Quarter 2010)

<sup>&</sup>lt;sup>2</sup> Bureau of Labor Statistics, Series Report ID: wpu0543 and wpu0573 (December 2010)

<sup>&</sup>lt;sup>3</sup> Nuclear Regulatory Commission: NUREG-1307 Revision 14, Table 2.1 (2010)

# Entergy Nuclear Operations, Inc. Status of Decommissioning Funding – Palisades For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

### Plant Name: Palisades Nuclear Plant

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1.	Minimum Financial Assurance (MFA) estimated per 10 CFR 50.75(b) and (c) (2010\$)	\$ 439.13 million <sup>[Note]</sup>
2.	Decommissioning Trust Fund Total as of 12/31/10	\$ 271.16 million
	Decommissioning Trust Fund Total as of 2/28/11	\$ 279.20 million
3.	A schedule of the annual amounts remaining to be collected	None
4.	Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
5.	Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
6.	Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	None
7.	Any material changes to trust agreements	None

Note: Calculation of the NRC Minimum Amount is provided in Attachment 12.

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### Entergy Nuclear Operations, Inc. Calculation of Minimum Amount -- Palisades For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Entergy Nuclear Palisades LLC.: 100% ownership interest Plant Location: Covert, Michigan Reactor Type: Pressure Water Reactor ("PWR") Power Level: <3,400 MWt (2565 MWt) PWR Base Year 1986\$: \$97,572,000 Labor Region: Midwest Waste Burial Facility: Generic Disposal Site

#### 10CFR50.75(c)(2) Escalation Factor Formula: 0.65(L) +0.13(E) +0.22(B)

	Factor
L=Labor (Midwest)	$2.32^{1}$
E=Energy (PWR)	2.263 <sup>2</sup>
B=Waste Burial-Vendor (PWR)	12.28 <sup>3</sup>

### **PWR Escalation Factor:**

0.65(L) + 0.13(E) + 0.22(B) =

4.500543

## **1986 PWR Base Year \$ Escalated:**

\$97,572,000 \* Factor=

\$439,126,944

<sup>&</sup>lt;sup>1</sup> Bureau of Labor Statistics, Series Report ID: CIU201000000230i (4<sup>th</sup> Quarter 2010)

<sup>&</sup>lt;sup>2</sup> Bureau of Labor Statistics, Series Report ID: wpu0543 and wpu0573 (December 2010)

<sup>&</sup>lt;sup>3</sup> Nuclear Regulatory Commission: NUREG-1307 Revision 14, Table 2.1 (2010)

# Entergy Nuclear Operations, Inc. Status of Decommissioning Funding – Big Rock Point For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

# Plant Name: Big Rock Point ISFSI

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1.	Amount of decommissioning funds required from most recent estimate (2003 dollars).	\$ 2.74 million
	Decommissioning cost estimate escalated at 3% per year to 2010 dollars.	\$ 3.37 million
2.	Decommissioning Funding Assurance Method.	Parent Guarantee (\$5 million)
3.	A schedule of the annual amounts remaining to be collected	None
4.	Assumptions used in determining rates of escalation in decommissioning costs, rates of	Escalation rate: 3.0%
	earnings on decommissioning funds, and rates of other factors used in funding projections	Rate of earnings: n/a
5.	Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v)	None
6.	Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	None
7.	Any material changes to trust agreements	None

### Entergy Nuclear Operations, Inc. IP1 DTF Balance Based on Decommissioning Funding Assurance Plan For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

On October 23, 2008, Entergy Nuclear Indian Point 2, LLC (ENIP2) submitted a preliminary decommissioning cost analysis to the NRC in conjunction with its spent fuel management plan under 10 CFR 50.75(f)(3) and 10 CFR 50.54(bb) (Accession No. ML083040378, as supplemented by ENIP2's reply to RAIs on July 15, 2009 (Accession No. ML092050204). The preliminary decommissioning cost analysis contained separate site-specific decommissioning cost estimates for Indian Point 1 and Indian Point 2. The estimates were subsequently found to be reasonable by the NRC on March 17, 2010 (Accession No. ML100280544).

The Indian Point 1 site-specific decommissioning cost estimate that was submitted was based on a period of safe storage that is specifically described in the estimate, namely storage until 2066, at which time the plant will be decommissioned and the site released for alternative use without restriction. Table 7 in the Indian Point 1 site-specific estimate (page 34 of 36) provides the annual license termination phase expenditures for Indian Point 1 in 2007 dollars (excluding those costs expended to date and through the 3<sup>rd</sup> quarter of 2013 which are funded by operations). Table 9-1 below escalates those 2007 dollar figures to 2010 dollars using escalation values obtained from data provided by IHS Global Insight. The decommissioning trust fund (DTF) ending balance is escalated each year by the 2% real growth figure allowed pursuant to 10 CFR 50.75(e)(1)(i).

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# Entergy Nuclear Operations, Inc. IP1 DTF Balance Based on Decommissioning Funding Assurance Plan For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Table 9-1										
	NRC License	e Termination C	ost							
	(\$	millions)								
	2007\$	2010\$								
	Unit 1	Unit 1	Ending DTF							
	Radiological	Radiological	Balance							
2010			286.857							
2011			292.594							
2012			298.446							
2013	1.059	1.119	303.296							
2014	4.236	4.476	304.886							
2015	4.236	4.476	306.508							
2016	2.656	2.801	309.838							
2017	2.649	2.793	313.242							
2018	2.649	2.793	316.714							
2019	2.649	2.793	320.255							
2020	2.656	2.801	323.859							
2021	2.649	2.793	327.543							
2022	2.649	2.793	331.301							
2023	2.649	2.793	335.134							
2024	2.656	2.801	339.036							
2025	2.649	2.793	343.024							
2026	2.649	2.793	347.091							
2027	2.649	2.793	351.240							
2028	2.656	2.801	355.464							
2029	2.649	2.793	359.780							
2030	2.649	2.793	364.183							
2031	2.649	2.793	368.674							
2032	2.656	2.801	373.247							
2033	2.649	2.793	377.919							
2034	2.649	2.793	382.684							
2035	2.649	2.793	387.545							
2036	2.656	2.801	392.495							
2037	2.649	2.793	397.552							
2038	2.649	2.793	402.710							
2039	2.649	2.793	407.971							
2040	2.656	2.801	413.330							
2041	2.649	2.793	418.804							
2042	2.649	2.793	424.387							
2043	2.649	2.793	430.082							
2044	2.656	2.801	435.883							
2045	2.611	2.752	441.848							

### Entergy Nuclear Operations, Inc. IP1 DTF Balance Based on Decommissioning Funding Assurance Plan For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Table 9-1 (continued)											
	NRC License Termination Cost										
	(\$	millions)									
	2007\$	2010\$									
	Unit 1	Unit 1	Ending DTF								
	Radiological	Radiological	Balance								
2046	1.826	1.922	448.763								
2047	1.826	1.922	455.816								
2048	1.831	1.928	463.005								
2049	1.826	1.922	470.343								
2050	<b>1.826</b>	1.922	477.827								
2051	1.826	1.922	485.461								
2052	1.831	1.928	493.243								
2053	1.826	1.922	501.185								
2054	1.826	1.922	509.286								
2055	1.826	1.922	517.549								
2056	1.831	1.928	525.972								
2057	1.826	1.922	534.569								
2058	1.826	1.922	543.338								
2059	1.826	1.922	552.282								
2060	1.831	1.928	561.400								
2061	1.826	1.922	570.706								
2062	1.826	1.922	580.198								
2063	1.826	1.922	589.880								
2064	1.831	1.928	599.750								
2065	1.826	1.922	609.823								
2066	18.899	20.013	602.006								
2067	68.313	71.807	542.239								
2068	148.490	156.022	397.062								
2069	17.216	18.143	386.861								
2070	17.216	18.143	376.456								
2071	17.216	18.143	365.842								
2072	17.235	18.163	354.995								
2073	11.400	12.054	350.041								
Total	441.549	464.844									

The foregoing SAFSTOR analysis shows that when the December 31, 2010 DTF balance is escalated at the allowable rate and compared against the annual figures for the SAFSTOR period, that an approximately \$350.041 million surplus exists at the end of the decommissioning project. Accordingly, ENIP2 concludes that no further action is required at this time to demonstrate adequate funding assurance for decommissioning Indian Point 1.

### Entergy Nuclear Operations, Inc. IP2 DTF Balance Based on Decommissioning Funding Assurance Plan For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

On August 13, 2009, Entergy Nuclear Indian Point 2, LLC (ENIP2) submitted a decommissioning funding assurance plan for Indian Point Energy Center, Unit 2 (Indian Point 2) (Accession No. ML 092260720). The plan was in response to a projected decommissioning funding shortfall for ENIP2 and the subsequent need to describe how and when the licensee intends to make adjustments to its financial assurance mechanisms. This attachment provides an update to the August 13, 2009 funding plan.

ENIP2 has determined that use of a SAFSTOR analysis shows that there is presently reasonable assurance that adequate funds will be available for the decommissioning process in compliance with NRC decommissioning funding assurance rules.

Pursuant to 10 CFR 50.75(e)(1)(i), "A licensee that has prepaid funds based on a site-specific estimate under § 50.75(b)(1) of this section may take, credit for projected earnings on the prepaid decommissioning trust funds, using up to a 2 percent annual real rate of return from the time of future funds' collection through the projected decommissioning period, provided that the site-specific estimate is based on a period of safe storage that is specifically described in the estimate." ENIP2 understands that a facility specific analysis may be used for demonstrating the adequacy of decommissioning funds, provided that "the NRC-required cost estimate for decommissioning costs as defined in 10 CFR 50.2 is equal to or greater than the amount stated in the formulas in 10 CFR 50.75(c)(1) and (2) as the basis for justifying a higher than minimum funding level." (Regulatory Guide 1.159, section 1.1.1; Draft Regulatory Guide-1229, section 1.1.1) ENIP2 also understands that NRC should be provided the analysis, and that the analysis should include data for each year of the analysis.

On October 23, 2008, ENIP2 submitted a site specific decommissioning cost estimate to the NRC in conjunction with its preliminary decommissioning cost estimate, and spent fuel management plan under 10 CFR 50.75(f)(3) and 10 CFR 50.54(bb) (Accession No. ML083040378, as supplemented by ENIP2's reply to RAIs on July 15, 2009 (Accession No. ML092050204). That submittal contained separate site-specific decommissioning cost estimates for Indian Point 1 and Indian Point 2. The Indian Point 2 site-specific decommissioning cost estimate that was submitted was based on a period of safe storage that is specifically described in the estimate, namely storage until 2064, at which time the plant will be decommissioned and the site released for alternative use without restriction. Table 4 in the Indian Point 2 site-specific estimate (page 31 of 38) provides the annual license termination phase expenditures for Indian Point 2 in 2007 dollars.

On December 10, 2010, ENIP3 submitted a site specific decommissioning cost estimate to the NRC in conjunction with its preliminary decommissioning cost estimate, and spent fuel management plan under 10 CFR 50.75(f)(3) and 10 CFR 50.54(bb) (Accession Nos. ML103540233 and ML103550608). In the ENIP3 estimate, the off-loading of the Indian Point 3 spent fuel storage pool was predicated on the availability of the Indian Point 2 spent fuel storage pool through the end of year 2023. This pool operating duration is 2½ years longer than what was assumed in the original 2007 Indian Point 2 estimate. For consistency, the 2007 Indian Point 2 estimate has been revised for the longer pool operating duration. This did not impact the

### Entergy Nuclear Operations, Inc. IP2 DTF Balance Based on Decommissioning Funding Assurance Plan For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

overall Indian Point 2 estimate schedule length. The revised cost (in 2007 dollars) is shown in Table 10-1 along with the original cost.

Table 10-1 below escalates the revised 2007 dollar figures to 2010 dollars using escalation values obtained from data provided by IHS Global Insight. The decommissioning trust fund (DTF) ending balance is escalated each year by the 2% real growth figure allowed pursuant to 10 CFR 50.75(e)(1)(i).

Table 10-1 below uses the December 31, 2010 balance and indicates that there is now a \$163.467 million surplus in 2073 in decommissioning trust funds at the end of radiological decommissioning of Indian Point 2.

# Entergy Nuclear Operations, Inc. IP2 DTF Balance Based on Decommissioning Funding Assurance Plan For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Table 10-1										
	NRC	License Termir	nation Cost							
		(\$ millions	5)							
		2007\$								
	2007\$	Unit 2	2010\$							
	Unit 2	Updated	Unit 2	Ending DTF						
	Radiological	Radiological	Radiological	Balance						
0010				074 700						
2010				3/4./38						
2011				382.233						
2012	11.104	11 104	11.004	389.878						
2013	11.164	11.164	11.824	385.852						
2014	49.271	49.271	52.116	341.453						
2015	25.307	25.307	26.765	321.517						
2016	3.711	3.711	3.921	324.026						
2017	3.701	3.701	3.910	326.596						
2018	3.701	3.701	3.910	329.218						
2019	3.701	3.701	3.910	331.892						
2020	3.711	3.711	3.921	334.609						
2021	3.688	3.701	3.910	337.391						
2022	3.676	3.701	3.910	340.229						
2023	3.676	3.701	3.910	343.123						
2024	3.686	3.686	3.895	346.091						
2025	3.676	3.676	3.884	349.129						
2026	3.676	3.676	3.884	352.227						
2027	3.676	3.676	3.884	355.387						
2028	3.686	3.686	3.895	358.600						
2029	3.676	3.676	3.884	361.888						
2030	3.676	3.676	3.884	365.242						
2031	3.676	3.676	3.884	368.663						
2032	3.686	3.686	3.895	372.141						
2033	3.676	3.676	3.884	375.700						
2034	3.676	3.676	3.884	379.330						
2035	3.676	3.676	3.884	383.032						
2036	3.686	3.686	3.895	386.798						
2037	3.676	3.676	3.884	390.650						
2038	3.676	3.676	3.884	394.579						
2039	3.676	3.676	3.884	398.586						
2040	3.686	3.686	3.895	402.663						
2041	3.676	3.676	3.884	406.832						
2042	3.676	3.676	3.884	411.084						
2043	3.676	3.676	3.884	415.421						
2044	3.686	3.686	3.895	419.835						
2045	3.675	3.676	3.884	424.347						
2046	3.668	3.676	3.884	428.950						

### Entergy Nuclear Operations, Inc. IP2 DTF Balance Based on Decommissioning Funding Assurance Plan For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

Table 10-1 (continued)										
	NRC	License Termir	nation Cost							
	• • • • • • • • • • • • • • • • • • •	(\$ millions	5)							
		2007\$								
	2007\$	Unit 2	2010\$							
	Unit 2	Updated	Unit 2	Ending DTF						
	Radiological	Radiological	Radiological	Balance						
				r						
2047	3.668	3.675	3.884	433.645						
2048	3.678	3.678	3.887	438.431						
2049	3.668	3.668	3.876	443.323						
2050	3.668	3.668	3.876	448.313						
2051	3.668	3.668	3.876	453.403						
2052	3.678	3.678	3.887	458.584						
2053	3.668	3.668	3.876	463.879						
2054	3.668	3.668	3.876	469.280						
2055	3.668	3.668	3.876	474.789						
2056	3.678	3.678	3.887	480.398						
2057	3.668	3.668	3.876	486.130						
2058	3.668	3.668	3.876	491.976						
2059	3.668	3.668	3.876	497.939						
2060	3.678	3.678	3.887	504.011						
2061	3.668	3.668	3.876	510.215						
2062	3.668	3.668	3.876	516.543						
2063	3.668	3.668	3.876	522.998						
2064	24.751	24.751	26.199	507.259						
2065	55.625	55.625	58.792	458.613						
2066	168.560	168.560	177.452	290.334						
2067	71.834	71.834	75.804	220.337						
2068	25.113	25.113	26.507	198.237						
2069	6.046	6.046	6.383	195.819						
2070	6.046	6.046	6.383	193.352						
2071	6.046	6.046	6.383	190.836						
2072	6.547	6.547	6.913	187.740						
2073	26.485	26.485	28.028	163.467						
Total	659.351	659.430	696.201							

As can be seen from the information provided in Table 10-1, the required funding for SAFSTOR decommissioning, \$696.201 million, is greater than the NRC formula amount per 10 CFR 50.75(b) and 1(c) of \$474.22 million, therefore, the site-specific analysis complies with the requirement from Regulatory Guide 1.159 section 1.1.1 previously discussed. The foregoing SAFSTOR analysis shows that when the December 31, 2010 DTF balance is escalated at the allowable rate and compared against the annual figures for the SAFSTOR period, that an

## Entergy Nuclear Operations, Inc. IP2 DTF Balance Based on Decommissioning Funding Assurance Plan For Year Ending December 31, 2010 - 10 CFR 50.75(f)(1)

approximately \$163.467 million surplus exists at the end of the decommissioning project. Accordingly, ENIP2 concludes that no further action is required at this time to demonstrate adequate funding assurance for decommissioning Indian Point 2.

## Entergy Nuclear Operations, Inc. Minimum Financial Assurance Calculation Worksheets

	Plant I	name:		Indian Point, Unit 1										
				M	onth	Da	ay	Ye	ar					
Year of Biennial:					1	-	1	20	11					
T	ermina	tion of C	peration:	9		2	8	20	66	SAFSTOR Site Specific			0	
I		<u>MWth</u>	<u>1986\$</u>	ECI	Base Lx		<u>Lx</u>	Px	Fx		Ex		<u>Bx</u>	
Γ	PWR	615	\$85,560,000	113.6	2.16	0.65	2.45	1.675	3.074	0.13	2.263	0.22	12.28	
NRC Minimum: \$392,					92,781,200	,200 Site Specific: \$464,844,000								
ŀ	Amount of NRC Minimum/Si Licensee: % Owned: Specific: '		um/Site ,	te Amount in Trust Fund:										
	En	tergy	100.00%		\$464,840,000		\$286,860,000							

NOTE: See Attachment 14 for the adequacy of the Trust Fund

## Entergy Nuclear Operations, Inc. Minimum Financial Assurance Calculation Worksheets



NOTE: See Attachment 15 for the adequacy of the Trust Fund

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Plant	name:		Indian Point, Unit 3										
			Month		Day		Year						
Year of Biennial:				1	1		2011						
fermination of Operation		Operation	1	12	12		2015						
-	<u>MWth</u>	<u>1986\$</u>	ECI	Base Lx		<u>Lx</u>	Рх	Fx		<u>Ex</u>		<u>Bx</u>	
PWR	3216	\$103,300,800	113.6	2.16	0.65	2.45	1.675	3.074	0.13	2.263	0.22	12.28	
NRC Minimum: \$474,224,079			Site S	pecific:									
Licensee: % Owned:			Amou	nt of NRC Mir Specific	nimum/Site	Amou	unt in Trust	Fund:	l				
En	Entergy 100.00% \$474,224,079				\$493,330,00	0							
Ste Earning Trust Fur \$493,	Step 1:         rnings Credit:         Real Rate of         Years Left         Total Real         at Fund Balance:         Retum per         in License         Rate of         2%         4.95         1.10292         \$544.10		Total Eam \$544,102	nings: 2,708	Total Earr	nings = Tru	st Fund ba	alance x (1	+RRR)^Ye	ars left in I	icense		
Ste	ep 2:		•		•								
Accum	nulation:												
Value of A	Annuity per	Real Rate of	Veare	of Annuity:	1 Total Ann	uitv:	1						
	\$0	2%	r cuis (	0	\$0	iuity.							
Ste Decom	ep 3: 1 Period:												
1 Total F	aminos	Real Hate of	Decom Boriod:	Potal Real	Total Earnings	for Docom.							
\$544.	102,708	2%	7	0.14869	\$40,450.	137	I Earnings	for Decon	n = (1/2) x	Total Earn	ings x [(1+	RRR)^Dec	om period
		•			Total of Step \$584,552	os 1 - 3: 2,845	Total = To	otal Earning	gs + Total	Earnings fo	or Decom	·	
			Excess (SI	hortfall)	\$110,328,766	to NRC m	inimum						

### Entergy Nuclear Operations, Inc. Minimum Financial Assurance Calculation Worksheets



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Plant	name:				Р	alisad	es Nuc	lear Pl	ant				
			Month		Day		Υe	ear					
Ye	ar of Bie	ennial:		1 1		Í	2011						
<b>Fermination of Operation</b>		Operation	I	3 2		4 2031		31					
	MWth	<u>1986\$</u>	ECI	Base Lx	1	Lx	Рх	Fx		Ex		<u>Bx</u>	
PWR	2565	\$97,572,000	111.3	2.08	0.65	2.32	1.675	3.074	0.13	2.263	0.22	12.28	1
N	RC Mini	mum:	\$4	439,126,9	44								
Licensee: % Owned:			Amount	of NRC Minin Specific:	num/Site	Amou	ant in Trust	Fund:	1				
En	tergy	100.00%		\$439,126,944	ļ		\$271,160,00	00	]				
Ste Earning	ep 1: gs Credit:	Baal Bate of	Voars Lett	Total Beal	I								
Trust Fun	d Balance:	Return per	in License	Rate of	Total Ea	arnings:	1						
\$271,	160,000	2%	20.23	1.49272	\$404,7	66,304	Total Ear	nings = Tru	ust Fund b	alance x (	1+RRR)^Y	ears left in	license
Ste	ep 2:												
Accum	Annuity per	Beal Bate of	1										
y y	ear	Return per	Years	of Annuity:	Total A	nnuity:							
	\$0	2%		0	\$	0	1						
Ste Decom	ep 3: Period:				_		_						
1	- •.	Real Rate of	Decom	Total Real	Total Ear	mings for							
\$404	amings: 766 304	Return per	Period:	Hate of 0 14869		om: 21 474	l Farnings	for Decor	n = (1/2) x	Total Fam	inge v [/1.		om period
Ι <del>Ψ-Ο-</del> ,	,	i 2/0	,	0.17003	I \$00,08	,,,,,,	r carnings						om periou
					Total of St	teps 1 - 3:							
					\$434,857,778 Total = Total Earnings + Tota					Earnings	for Decom	1	
			Excess (S	hortfall)	(\$4,26	9,166)	to NRC m	inimum	]				

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Plant	name:	Palisades Nuclear Plant											
			Month		Da	ay 🧳	Ye	ear					
Ye	ar of Bie	ennial:		3 1		2011							
[ermina	ation of	Operation	ı	3		24		2031					
		- •											
	MWth	<u>1986\$</u>	ECI	Base Lx		<u>Lx</u>	Px	Fx		<u>Ex</u>		<u>Bx</u>	
PWR	2565	\$97,572,000	111.3	2.08	0.65	2.32	1.675	3.074	0.13	2.263	0.22	12.28	
NF	RC Mimi	mum:	\$4	439,126,9	44								
			Amount	of NRC Minin	num/Site								
Licensee: % Owned:			<b> </b>	Specific:	1	Amo	eggo 202 02	Fund:					
Entergy 100.00% \$459,120,944 \$						φ∠19,202,9c							
Ste	ep 1:						•						
Earning	gs Credit:												
	d Polonao:	Real Rate of	Years Left	Total Real	Total Er	minaci	1						
\$279.	202.935	2%	20.06	1.48780	\$415.3	98.901	Total Earr	ninas = Tru	ust Fund b	alance x (	1+RRR)^Y	ears left in	license
1 +=,	,•	1			1 +,-	,	1						
Ste	ep 2:												
Accum	ulation:												
Value of A	Annuity per	Real Rate of		<i>.</i> .									
у	ear	Return per	Years	of Annuity:	Iotal A	nnuity:	4						
	50	2%	I	0	2	0	I						
Ste	ep 3:												
Decom	· Period:			_	_								
		Real Rate of	Decom	Total Real	Total Ear	nings for							
Total E	Earnings:	Return per	Period:	Rate of	Dec	om:							
\$415,	398,901	2%	7	0.14869	\$30,88	1,931	Earnings	for Decon	n = (1/2) x	Total Earr	nings x [(1	+RRR)^Dec	com period
					Total of St	ens 1 - 3	1						
			\$446,280,832		Total = Total Earnin		gs + Total	Earnings	for Decom	1			
					I +				•				
			Excess (S	hortfall)	\$7,153	3,889	to NRC mi	inimum					