FPL

March 30, 2017

L-2017-040
10 CFR 50.75(f)(1)
10 CFR 72.30(c)

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

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Docket No. 72-61

Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Docket No. 72-62

NextEra Energy Seabrook, LLC
Seabrook Station
Docket No. 50-443
Docket No. 72-63

NextEra Energy Duane Arnold, LLC
Duane Arnold Energy Center
Docket No. 50-331
Docket No. 72-32

NextEra Energy Point Beach, LLC
Point Beach Units 1 and 2
Docket Nos. 50-266, 50-301
Docket No. 72-05

Decommissioning Funding Status Reports / Independent Spent Fuel Storage Installation (ISFSI) Financial Assurance Update

Pursuant to 10 CFR 50.75(f)(1) and 10 CFR 72.30(c), enclosed are the Decommissioning Funding Status (DFS) Reports and Independent Spent Fuel Storage Installation Financial Assurance Update for the following units:

1. St. Lucie Units 1 and 2
2. Turkey Point Units 3 and 4
3. Seabrook Station
4. Duane Arnold Energy Center
5. Point Beach Units 1 and 2

Florida Power and Light Company (FPL) is the sole owner of Turkey Point Units 3 and 4 and St. Lucie Unit 1. FPL, Florida Municipal Power Agency, and Orlando Utilities Commission own St. Lucie Unit 2. The report for St. Lucie Unit 2 provides the status of decommissioning funding for all three owners of that unit.

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NextEra Energy Seabrook, LLC (Seabrook), Hudson Light and Power Department, Massachusetts Municipal Wholesale Electric Company, and Taunton Municipal Lighting Plant own Seabrook Station. The report for Seabrook Station provides the status of decommissioning funding for all four owners of that unit.

NextEra Energy Duane Arnold, LLC (Duane Arnold), Central Iowa Power Cooperative, and Corn Belt Power Cooperative own Duane Arnold Energy Center. The report for Duane Arnold Energy Center provides the status of decommissioning funding for all three owners of that unit.

NextEra Energy Point Beach, LLC is the sole owner of Point Beach Units 1 and 2.

This letter contains no new commitments and no revisions to existing commitments.

Should there be any questions, please contact Pam Metz at (561) 904-5189.

Larry Nicholson
Nuclear Licensing and Regulatory Compliance Director

Enclosures (2)

Enclosure 1

Decommissioning Funding Status Reports
10 CFR 50.75(f)(1)

- St. Lucie Units 1 and 2
- Turkey Point Units 3 and 4
- Seabrook Station
- Duane Arnold Energy Center
- Point Beach Units 1 and 2

St. Lucie Nuclear Plant – Unit 1
Florida Power and Light Company (FPL),
Decommissioning Funding Status Report

1. **The minimum decommissioning fund estimate pursuant to 10 CFR 50.75(b) and (c).**

Plant Owner (% Ownership)	NRC Minimum (a)
FPL (100%)	468,366,936

(a) Refer to St. Lucie Unit 1 for calculation assumptions

2. **The amount accumulated at the end of the calendar year preceding the date of the report. (Trust fund balance is net of taxes)**

	Total[1]
FPL (100%)	1,014,177,909

3. **Projected Funds at Shutdown (2% real rate of return).**

	Total
FPL (100%) (see note (b))	1,482,685,182

(b) Pursuant to Florida Public Service Commission (FPSC) Order No. PSC-16-0250-PAA-EI, customer contributions to the decommissioning trust remain at zero effective June 29, 2016.

4. **Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v).** None

5. **Any modifications to a licensee's method of providing financial assurance occurring since the last submitted report.** None

6. **Any material changes to trust agreements.** None

[1] NRC letter dated November 26, 2008, St. Lucie Plant, Unit Nos. 1 and 2 – Biennial Decommissioning Funding Report (TAC Nos. MD9354 and MD9355), directed FPL to report all funds within the trust as designated for radiological decommissioning purposes since FPL does not earmark each cost component of decommissioning within the trust. However, the trust includes non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the Florida Public Service Commission (FPSC). FPL understands that under NRC guidance, either an order of the FPSC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, St. Lucie Unit 1 allocates the trust account amounts by license termination, spent fuel management and site restoration costs based on assumptions from the decommissioning cost study filed in December 2015 with the FPSC.

ST. LUCIE NUCLEAR PLANT - UNIT 1
NRC Minimum Decommissioning Cost Determination

NRC Minimum = $101.58 million X (0.65L + 0.13E + 0.22B)

Where:

$101.58 million is value for reference PWR in 1986 dollars

L = Labor escalation factor to current year[3]

E = Energy escalation factor to current year[4]

B = LLRW escalation factor to current year[5]

#	Item Description	Value
1	Labor escalation factor for Quarter 4, 2016 [3]	126.2
2	Base adjustment factor from NUREG-1307 [2]	1.98
3	Escalation factor from NUREG-1307	100
4	L = #1 times #2 divided by #3	2.50
5	Electric power escalation factor, 2016 [6]	215.0
6	Electric power escalation factor for Jan., 1986 from NUREG-1307	114.2
7	Fuel escalation factor for 2016 [7]	152.0
8	Fuel escalation factor for Jan., 1986 from NUREG-1307	82
9	P = #5 divided by #6	1.88
10	F = #7 divided by #8	1.85
11	E = 0.58P(#9) + 0.42F(#10) per NUREG-1307	1.87
12	Value of B from Table 2.1 of NUREG-1307 [5]	12.471
13	0.65L(#4) + 0.13E(#11) + 0.22B(#12)	4.61
14	1986 minimum-millions of dollars for PWR	101.58
15	2016 minimum-millions of dollars: #13 times #14	468.4

[2] NUREG 1307, Rev 16, Table 3.2

[3] NUREG 1307 specified that source is Bureau of Labor Statistics Data, Employment Cost Index, Series CIU2010000000220I (South Region).

[4] NUREG 1307 specifies that source is a weighted calculation using Bureau of Labor Statistics Data, Producer Price Index-Commodities, Series wpu0573 (light fuel oils) and wpu0543 (industrial electric power).

[5] NUREG 1307 provides a value for B in Table 2.1. In the March 2017 Revision 16, the CWF in Andrews County, Texas, is also available as a full-service (i.e., Class A, B, and C) LLW disposal facility for waste generators located in States not affiliated with the Texas Compact. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of-compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S., the Generic LLW Disposal Site option used in previous versions of NUREG-1307 is replaced with this option, which provides Bx values representing a composite of the disposal rates for these two disposal facilities.

[6] December 2016 value is 215.0 (See note #4) Information was preliminary as of 01/13/17.

[7] December 2016 value is 152.0 (See note #4) Information was preliminary as of 01/13/17.

ST. LUCIE NUCLEAR PLANT - UNIT 1

The St. Lucie Unit 1 trust includes non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the Florida Public Service Commission (FPSC). FPL understands that under NRC guidance, either an order of the FPSC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, the data summarized below allocates the NRC license termination portion of the trust fund balance based upon percentages in FPL's most recent FPSC decommissioning cost study. St. Lucie Unit 1 is utilizing the formula method to demonstrate financial assurance pursuant to 10CFR 50.75(b).

Florida Power and Light Company		
Decommissioning Trust Fund - License Termination Funds		
As of December 31, 2016		
TLG Cost Study (thousands of $2015)		**St. Lucie Unit 1**
License Termination		589,149
Spent Fuel Management		296,190
Site Restoration		49,309
Total		**934,648**
Category %		
License Termination		63.03%
Spent Fuel Management		31.69%
Site Restoration		5.28%
Total		**100%**
Projected Trust Fund Balance at Shutdown		**1,482,685,182**
Projection at Shutdown - License Termination Portion (Allocation based on TLG Study)		**934,600,505**

St. Lucie Nuclear Plant – Unit 2
Florida Power and Light Company (FPL),
Florida Municipal Power Agency (FMPA),
Orlando Utilities Commission (OUC)
Decommissioning Funding Status Report

1. **The minimum decommissioning fund estimate pursuant to 10 CFR 50.75(b) and (c).**

Plant Owner (% Ownership)	NRC Minimum (a)
FPL (85.10449%)	398,601,292
FMPA (8.806%)	41,244,392
OUC (6.08951%)	28,521,251
Total	**468,366,936**

(a) Refer to St. Lucie Unit 2 for calculation assumptions

2. **The amount accumulated at the end of the calendar year preceding the date of the report. (Trust fund balances are net of taxes)**

	Total[8]
FPL (85.10449%)	859,683,907
FMPA (8.806%)	73,909,113
OUC (6.08951%)	41,044,267
Total	**974,637,286**

3. **Projected Funds at Shutdown (2% real rate of return).**

	Total
FPL (85.10449%) (see note (b))	1,446,593,796
FMPA (8.806%) (see note (c))	124,367,181
OUC (6.08951%) (see note (c))	69,065,364
Total	**1,640,026,341**

(b) Pursuant to Florida Public Service Commission (FPSC) Order No. PSC-16-0250-PAA-EI, customer contributions to the decommissioning trust remain at zero effective June 29, 2016.

(c) Assumes no contributions to the fund.

4. **Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v).** None

5. **Any modifications to a licensee's method of providing financial assurance occurring since the last submitted report.** None

6. **Any material changes to trust agreements.** None

[8] NRC letter dated November 26, 2008, St. Lucie Plant, Unit Nos. 1 and 2 – Biennial Decommissioning Funding Report (TAC Nos. MD9354 and MD9355), directed FPL to report all funds within the trust as designated for radiological decommissioning purposes since FPL does not earmark each cost component of decommissioning within the trust. However, the trust includes non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the Florida Public Service Commission (FPSC). FPL understands that under NRC guidance, either an order of the FPSC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, St. Lucie Unit 2, allocates the trust account amounts by license termination, spent fuel management and site restoration costs based on assumptions from the decommissioning cost study filed in December 2015 with the FPSC. .

ST. LUCIE NUCLEAR PLANT - UNIT 2
NRC Minimum Decommissioning Cost Determination

NRC Minimum = $101.58 million X (0.65L + 0.13E + 0.22B)

Where:

$101.58 million is value for reference PWR in 1986 dollars

L = Labor escalation factor to current year[10]

E = Energy escalation factor to current year[11]

B = LLRW escalation factor to current year[12]

#	Item Description	Value
1	Labor escalation factor for Quarter 4, 2016 [10]	126.2
2	Base adjustment factor from NUREG-1307 [9]	1.98
3	Escalation factor from NUREG-1307	100
4	L = #1 times #2 divided by #3	2.50
5	Electric power escalation factor, 2016[13]	215.0
6	Electric power escalation factor for Jan., 1986 from NUREG-1307	114.2
7	Fuel escalation factor for 2016 [14]	152.0
8	Fuel escalation factor for Jan., 1986 from NUREG-1307	82
9	P = #5 divided by #6	1.88
10	F = #7 divided by #8	1.85
11	E = 0.58P(#9) + 0.42F(#10) per NUREG-1307	1.87
12	Value of B from Table 2.1 of NUREG-1307 [12]	12.471
13	0.65L(#4) + 0.13E(#11) + 0.22B(#12)	4.61
14	1986 minimum-millions of dollars for PWR	101.58
15	2016 minimum-millions of dollars: #13 times #14	468.4

[9] NUREG 1307, Rev 16, Table 3.2

[10] NUREG 1307 specified that source is Bureau of Labor Statistics Data, Employment Cost Index, Series CIU2010000000220I (South Region).

[11] NUREG 1307 specifies that source is a weighted calculation using Bureau of Labor Statistics Data, Producer Price Index-Commodities, Series wpu0573 (light fuel oils) and wpu0543 (industrial electric power).

[12] NUREG 1307 provides a value for B in Table 2.1. In the March 2017 Revision 16, the CWF in Andrews County, Texas, is also available as a full-service (i.e., Class A, B, and C) LLW disposal facility for waste generators located in States not affiliated with the Texas Compact. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of-compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S., the Generic LLW Disposal Site option used in previous versions of NUREG-1307 is replaced with this option, which provides Bx values representing a composite of the disposal rates for these two disposal facilities.

[13] December 2016 value is 215.0. (See note #12) Information was preliminary as of 01/13/17.

[14] December 2016 value is 152.0 (See note #12) Information was preliminary as of 01/13/17.

ST. LUCIE NUCLEAR PLANT - UNIT 2

The St. Lucie Unit 2 trust includes non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the Florida Public Service Commission (FPSC). FPL understands that under NRC guidance, either an order of the FPSC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, the data summarized below allocates the NRC license termination portion of the trust fund balance based upon percentages in FPL's most recent FPSC decommissioning cost study. St. Lucie Unit 2 is utilizing the formula method to demonstrate financial assurance pursuant to 10CFR 50.75(b).

Florida Power and Light Company					
Decommissioning Trust Fund - License Termination Funds As of December 31, 2016					
TLG Cost Study (thousands of $2015)		St. Lucie Unit 2	FPL	FMPA	OUC
License Termination		619,088			
Spent Fuel Management		190,515			
Site Restoration		62,228			
Total		**871,831**			
Category %					
License Termination		71.01%			
Spent Fuel Management		21.85%			
Site Restoration		7.14%			
Total		**100%**			
Projected Trust Fund Balance at Shutdown		**1,640,026,341**	**1,446,593,796**	**124,367,181**	**69,065,364**
Projection at Shutdown - License Termination Portion (Allocation based on TLG Study)		**1,164,584,223**	**1,027,227,594**	**88,313,250**	**49,043,379**

Turkey Point Nuclear Plant – Unit 3
Florida Power and Light Company (FPL),
Decommissioning Funding Status Report

1. **The minimum decommissioning fund estimate pursuant to 10 CFR 50.75(b) and (c).**

Plant Owner (% Ownership)	NRC Minimum (a)
FPL (100%)	453,110,059

(a) Refer to Turkey Point Unit 3 for calculation assumptions

2. **The amount accumulated at the end of the calendar year preceding the date of the report. (Trust fund balance is net of taxes)**

	Total[15]
FPL (100%)	839,232,304

3. **Projected Funds at Shutdown (2% real rate of return).**

	Total
FPL (100%) (see note (b))	1,142,066,625

(b) Pursuant to Florida Public Service Commission (FPSC) Order No. PSC-16-0250-PAA-EI, customer contributions to the decommissioning trust remain at zero effective June 29, 2016.

4. **Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v).** None

5. **Any modifications to a licensee's method of providing financial assurance occurring since the last submitted report.** None

6. **Any material changes to trust agreements.** None

[15] NRC letter dated November 26, 2008, St. Lucie Plant, Unit Nos. 1 and 2 – Biennial Decommissioning Funding Report (TAC Nos. MD9354 and MD9355), directed FPL to report all funds within the trust as designated for radiological decommissioning purposes since FPL does not earmark each cost component of decommissioning within the trust. However, the trust includes non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the Florida Public Service Commission (FPSC). FPL understands that under NRC guidance, either an order of the FPSC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, Turkey Point Unit 3, allocates the trust account amounts by license termination, spent fuel management and site restoration costs based on assumptions from the decommissioning cost study filed in December 2015 with the FPSC

TURKEY POINT NUCLEAR PLANT - UNIT 3
NRC Minimum Decommissioning Cost Determination

NRC Minimum = $98.27 million X (0.65L + 0.13E + 0.22B)

Where:

$98.27 million is value for reference PWR in 1986 dollars

L = Labor escalation factor to current year[17]

E = Energy escalation factor to current year[18]

B = LLRW escalation factor to current year[19]

#	Item Description	Value
1	Labor escalation factor for Quarter 4, 2016 [17]	126.2
2	Base adjustment factor from NUREG-1307 [16]	1.98
3	Escalation factor from NUREG-1307	100
4	L = #1 times #2 divided by #3	2.50
5	Electric power escalation factor, 2016 [20]	215.0
6	Electric power escalation factor for Jan., 1986 from NUREG-1307	114.2
7	Fuel escalation factor for 2016 [21]	152.0
8	Fuel escalation factor for Jan., 1986 from NUREG-1307	82
9	P = #5 divided by #6	1.88
10	F = #7 divided by #8	1.85
11	E = 0.58P(#9) + 0.42F(#10) per NUREG-1307	1.87
12	Value of B from Table 2.1 of NUREG-1307 [19]	12.471
13	0.65L(#4) + 0.13E(#11) + 0.22B(#12)	4.61
14	1986 minimum-millions of dollars for PWR	98.27
15	2016 minimum-millions of dollars: #13 times #14	453.1

[16] NUREG 1307, Rev 16, Table 3.2

[17] NUREG 1307 specified that source is Bureau of Labor Statistics Data, Employment Cost Index, Series CIU2010000000220I (South Region).

[18] NUREG 1307 specifies that source is a weighted calculation using Bureau of Labor Statistics Data, Producer Price Index-Commodities, Series wpu0573 (light fuel oils) and wpu0543 (industrial electric power).

[19] NUREG 1307 provides a value for B in Table 2.1. In the March 2017 Revision 16, the CWF in Andrews County, Texas, is also available as a full-service (i.e., Class A,B, and C) LLW disposal facility for waste generators located in States not affiliated with the Texas Compact. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of-compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S., the Generic LLW Disposal Site option used in previous versions of NUREG-1307 is replaced with this option, which provides Bx values representing a composite of the disposal rates for these two disposal facilities.

[20] December 2016 value is 215.0. (See note #19) Information was preliminary as of 01/13/17.

[21] December 2016 value is 152.0 (See note #19) Information was preliminary as of 01/13/17.

TURKEY POINT NUCLEAR PLANT - UNIT 3

The Turkey Point Unit 3 trust includes non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the Florida Public Service Commission (FPSC). FPL understands that under NRC guidance, either an order of the FPSC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, the data summarized below allocates the NRC license termination portion of the trust fund balance based upon percentages in FPL's most recent FPSC decommissioning cost study. Turkey Point Unit 3 is utilizing the formula method to demonstrate financial assurance pursuant to 10CFR 50.75(b).

Florida Power and Light Company Decommissioning Trust Fund - License Termination Funds	
As of December 31, 2016	
TLG Cost Study (thousands of $2015)	**Turkey Point Unit 3**
License Termination	580,783
Spent Fuel Management	224,586
Site Restoration	40,665
Total	**846,034**
Category %	
License Termination	68.65%
Spent Fuel Management	26.55%
Site Restoration	4.81%
Total	**100%**
Projected Trust Fund Balance at Shutdown	**1,142,066,625**
Projection at Shutdown - License Termination Portion (Allocation based on TLG Study)	**784,002,630**

Turkey Point Nuclear Plant – Unit 4
Florida Power and Light Company (FPL),
Decommissioning Funding Status Report

1. **The minimum decommissioning fund estimate pursuant to 10 CFR 50.75(b) and (c).**

Plant Owner (% Ownership)	NRC Minimum (a)
FPL (100%)	453,110,059

(a) Refer to Turkey Point Unit 4 for calculation assumptions

2. **The amount accumulated at the end of the calendar year preceding the date of the report. (Trust fund balance is net of taxes)**

	Total[22]
FPL (100%)	948,100,859

3. **Projected Funds at Shutdown (2% real rate of return).**

	Total
FPL (100%) (see note (b))	1,308,903,859

(b) Pursuant to Florida Public Service Commission (FPSC) Order No. PSC-16-0250-PAA-EI, customer contributions to the decommissioning trust remain at zero effective June 29, 2016.

4. **Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v).** None

5. **Any modifications to a licensee's method of providing financial assurance occurring since the last submitted report.** None

6. **Any material changes to trust agreements.** None

[22] NRC letter dated November 26, 2008, St. Lucie Plant, Unit Nos. 1 and 2 – Biennial Decommissioning Funding Report (TAC Nos. MD9354 and MD9355), directed FPL to report all funds within the trust as designated for radiological decommissioning purposes since FPL does not earmark each cost component of decommissioning within the trust. However, the trust includes non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the Florida Public Service Commission (FPSC). FPL understands that under NRC guidance, either an order of the FPSC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, Turkey Point Unit 4, allocates the trust account amounts by license termination, spent fuel management and site restoration costs based on assumptions from the decommissioning cost study filed in December 2015 with the FPSC.

TURKEY POINT NUCLEAR PLANT - UNIT 4
NRC Minimum Decommissioning Cost Determination

NRC Minimum = $98.27 million X (0.65L + 0.13E + 0.22B)

Where:

$98.27 million is value for reference PWR in 1986 dollars

L = Labor escalation factor to current year[24]

E = Energy escalation factor to current year[25]

B = LLRW escalation factor to current year[26]

#	Item Description	Value
1	Labor escalation factor for Quarter 4, 2016 [24]	126.2
2	Base adjustment factor from NUREG-1307 [23]	1.98
3	Escalation factor from NUREG-1307	100
4	L = #1 times #2 divided by #3	2.50
5	Electric power escalation factor, 2016 [27]	215.0
6	Electric power escalation factor for Jan., 1986 from NUREG-1307	114.2
7	Fuel escalation factor for 2016 [28]	152.0
8	Fuel escalation factor for Jan., 1986 from NUREG-1307	82
9	P = #5 divided by #6	1.88
10	F = #7 divided by #8	1.85
11	E = 0.58P(#9) + 0.42F(#10) per NUREG-1307	1.87
12	Value of B from Table 2.1 of NUREG-1307 [26]	12.471
13	0.65L(#4) + 0.13E(#11) + 0.22B(#12)	4.61
14	1986 minimum-millions of dollars for PWR	98.27
15	2016 minimum-millions of dollars: #13 times #14	453.1

[23] NUREG 1307, Rev 16, Table 3.2

[24] NUREG 1307 specified that source is Bureau of Labor Statistics Data, Employment Cost Index, Series CIU2010000000220I (South Region).

[25] NUREG 1307 specifies that source is a weighted calculation using Bureau of Labor Statistics Data, Producer Price Index-Commodities, Series wpu0573 (light fuel oils) and wpu0543 (industrial electric power).

[26] NUREG 1307 provides a value for B in Table 2.1. In the March 2017 Revision 16, the CWF in Andrews County, Texas, is also available as a full-service (i.e., Class A, B, and C) LLW disposal facility for waste generators located in States not affiliated with the Texas Compact. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of-compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S., the Generic LLW Disposal Site option used in previous versions of NUREG-1307 is replaced with this option, which provides Bx values representing a composite of the disposal rates for these two disposal facilities.

[27] December 2016 value is 215.0 (See note #26) Information was preliminary as of 01/13/17.

[28] December 2016 value is 152.0 (See note #26) Information was preliminary as of 01/13/17.

TURKEY POINT NUCLEAR PLANT - UNIT 4

The Turkey Point Unit 4 trust includes non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the Florida Public Service Commission (FPSC). FPL understands that under NRC guidance, either an order of the FPSC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, the data summarized below allocates the NRC license termination portion of the trust fund balance based upon percentages in FPL's most recent FPSC decommissioning cost study. Turkey Point Unit 4 is utilizing the formula method to demonstrate financial assurance pursuant to 10CFR 50.75(b).

Florida Power and Light Company		
Decommissioning Trust Fund - License Termination Funds		
As of December 31, 2016		
TLG Cost Study (thousands of $2015)		**Turkey Point Unit 4**
License Termination		624,798
Spent Fuel Management		255,084
Site Restoration		53,633
Total		**933,515**
Category %		
License Termination		66.93%
Spent Fuel Management		27.33%
Site Restoration		5.75%
Total		**100%**
Projected Trust Fund Balance at Shutdown		**1,308,903,859**
Projection at Shutdown - License Termination Portion (Allocation based on TLG Study)		**876,044,320**

Seabrook Station
NextEra Energy Seabrook, LLC,
Hudson Light and Power Department,
Massachusetts Municipal Wholesale Electric Company,
Taunton Municipal Lighting Plant
Decommissioning Funding Status Report[29]

1. **The minimum decommissioning fund estimate pursuant to 10 CFR 50.75(b) and (c).**

Plant Owner (% Ownership)	NRC Minimum (a)
NextEra Energy Seabrook, LLC. (88.22889%)	444,089,971
Hudson Light and Power Department (.07737%)	389,433
Massachusetts Municipal Wholesale Electric Company (11.5934%)	58,354,046
Taunton Municipal Lighting Plant (.10034%)	505,050
Total	**503,338,500**

(a) Refer to Seabrook for calculation assumptions

2. **The amount accumulated at the end of the calendar year preceding the date of the report. (Trust fund balances are net of taxes)**

	Total[30]
NextEra Energy Seabrook, LLC. (88.22889%)	593,287,528
Hudson Light and Power Department (.07737%)	516,197
Massachusetts Municipal Wholesale Electric Company (11.5934%)	56,192,055
Taunton Municipal Lighting Plant (.10034%)	676,011
Total	**650,671,790**

3. **Projected Funds at Shutdown (2% real rate of return).**

	Total
NextEra Energy Seabrook, LLC. (88.22889%)	827,989,111
Hudson Light and Power Department (.07737%)	720,401
Massachusetts Municipal Wholesale Electric Company (11.5934%)	78,421,351
Taunton Municipal Lighting Plant (.10034%)	943,437
Total	**908,074,301**

[29] The New Hampshire Nuclear Decommissioning Financing Committee (NDFC) was established under New Hampshire law to provide assurance of adequate funding for decommissioning of nuclear generating facilities. This was intended "to ensure proper and safe decommissioning and subsequent surveillance of nuclear reactor sites to the extent necessary to prevent such sites from constituting a hazard to future generations." RSA 162-F:1. The NDFC is responsible for determining the appropriate amount of money that needs to be set aside and maintained in a trust fund, for the purpose of decommissioning any nuclear facilities located in the state of New Hampshire.

[30] NRC letter dated November 26, 2008, St. Lucie Plant, Unit Nos. 1 and 2 – Biennial Decommissioning Funding Report (TAC Nos. MD9354 and MD9355), directed FPL to report all funds within the trust as designated for radiological decommissioning purposes since FPL does not earmark each cost component of decommissioning within the trust. The Seabrook trusts contain non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the NDFC. NextEra understands that under NRC guidance, either an order of the NDFC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, Seabrook allocates the trust account amounts by license termination, spent fuel management and site restoration costs based on assumptions from the decommissioning cost study filed in 2015 with the NDFC.

Seabrook Station
NextEra Energy Seabrook, LLC,
Hudson Light and Power Department,
Massachusetts Municipal Wholesale Electric Company,
Taunton Municipal Lighting Plant
Decommissioning Funding Status Report

4.	**Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v).**	None
5.	**Any modifications to a licensee's method of providing financial assurance occurring since the last submitted report.**	None
6.	**Any material changes to trust agreements.**	None

SEABROOK STATION
NRC Minimum Decommissioning Cost Determination

NRC Minimum = $105 million X (0.65L + 0.13E + 0.22B)

Where:

$105 million is value for reference PWR in 1986 dollars

L = Labor escalation factor to current year[32]

E = Energy escalation factor to current year[33]

B = LLRW escalation factor to current year[34]

#	Item Description	Value
1	Labor escalation factor for Quarter 4, 2016 [32]	128.7
2	Base adjustment factor from NUREG-1307 [31]	2.16
3	Escalation factor from NUREG-1307	100
4	L = #1 times #2 divided by #3	2.78
5	Electric power escalation factor, 2016 [35]	215.0
6	Electric power escalation factor for Jan., 1986 from NUREG-1307	114.2
7	Fuel escalation factor for 2016 [36]	152.0
8	Fuel escalation factor for Jan., 1986 from NUREG-1307	82
9	P = #5 divided by #6	1.88
10	F = #7 divided by #8	1.85
11	E = 0.58P(#9) + 0.42F(#10) per NUREG-1307	1.87
12	Value of B from Table 2.1 of NUREG-1307 [34]	12.471
13	0.65L(#4) + 0.13E(#11) + 0.22B(#12)	4.79
14	1986 minimum-millions of dollars for PWR	105
15	2016 minimum-millions of dollars: #13 times #14	503.3

[31] NUREG 1307, Rev 16, Table 3.2

[32] NUREG 1307 specified that source is Bureau of Labor Statistics Data, Employment Cost Index, and Series CIU2010000000210I (Northeast Region).

[33] NUREG 1307 specifies that source is a weighted calculation using Bureau of Labor Statistics Data, Producer Price Index-Commodities, Series wpu0573 (light fuel oils) and wpu0543 (industrial electric power).

[34] NUREG 1307 provides a value for B in Table 2.1. In the March 2017 Revision 16, the CWF in Andrews County, Texas, is also available as a full-service (i.e., Class A, B, and C) LLW disposal facility for waste generators located in States not affiliated with the Texas Compact. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of-compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S., the Generic LLW Disposal Site option used in previous versions of NUREG-1307 is replaced with this option, which provides Bx values representing a composite of the disposal rates for these two disposal facilities.

[35] December 2016 value is 215.0 (See note #34) Information was preliminary as of 01/13/17.

[36] December 2016 value is 152.0 (See note #34) Information was preliminary as of 01/13/17.

SEABROOK STATION

The Seabrook trusts contain non-earmarked funds for spent fuel management and site restoration purposes collected at the direction of the New Hampshire Decommissioning Financing Committee (NDFC). NextEra understands that under NRC guidance, either an order of the NDFC or an NRC exemption would be necessary to utilize the funds for these non-radiological purposes. For informational purposes only, the data summarized below allocates the trust account amounts by license termination, spent fuel management and site restoration costs based on assumptions from the decommissioning cost study filed in 2015 with the NDFC. Seabrook is utilizing the formula method to demonstrate financial assurance pursuant to 10CFR 50.75(b).

NextEra Energy Seabrook, LLC
Decommissioning Trust Fund - License Termination Funds
As of December 31, 2016

TLG Cost Study Scenario 1 (thousands of $2015)	Seabrook	NextEra	Hudson	MMWEC	Taunton
License Termination	647,542				
Spent Fuel Management	232,292				
Site Restoration	51,564				
Total	931,398				
Component %					
License Termination	69.52%				
Spent Fuel Management	24.94%				
Site Restoration	5.54%				
Total	100%				
Projected Trust Fund Balance at Shutdown	908,074,301	827,989,111	720,401	78,421,351	943,437
Projection at Shutdown - License Termination Portion (Allocation based on TLG Study)	631,326,510	575,648,353	500,850	54,521,395	655,912

Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC (NextEra),
Central Iowa Power Cooperative (CIPCO),
Corn Belt Power Cooperative (Corn Belt)
Decommissioning Funding Status Report

1. **The minimum decommissioning fund estimate pursuant to 10 CFR 50.75(b) and (c).**

Plant Owner (% Ownership)	**NRC Minimum (a)**
NextEra (70%)	409,931,516
CIPCO (20%)	117,123,290
Corn Belt (10%)	58,561,645
Total	**585,616,452**

(a) Refer to Duane Arnold for calculation assumptions.

2. **The amount accumulated at the end of the calendar year preceding the date of the report. (Trust fund balances are net of taxes)**

Plant Owner (% Ownership)	**Total**
NextEra (70%)	354,653,394
CIPCO (20%)	60,672,615
Corn Belt (10%)	28,819,363
Total	**444,145,372**

Projected Funds at Shutdown

3.

Plant Owner (% Ownership)	**Total**
NextEra (70%) (a)	535,142,459
CIPCO (20%) (a)	137,679,279
Corn Belt (10%) (a)	65,397,365
Total	**738,219,102**

(a) Projection includes a pro-rata credit during the dismantlement period pursuant to 10CFR 50.75(e)(1)(ii).

4. **Assumptions used regarding escalation in decommissioning costs, rate of earnings on decommissioning funds and rates of other factors used in funding projections.**

Plant Owner (% Ownership)			***Real Rate of Return***
NextEra (see note (c)) (70%)			2%
CIPCO (see note (d)) (20%)			4%
Corn Belt (see note (e)) (10%)			4%

Basis for Allowance:
(c) 10 CFR 50.75 allows licensees to assume up to a 2% real rate of return unless the licensee's rate-setting authority has specifically authorized a higher rate.

(d) Central Iowa Power Cooperative (CIPCO) is a public corporation incorporated under Chapter 499 Iowa Code (2009). CIPCO has the authority and is required to fix, establish, and collect adequate rates and other charges for electrical energy or services sold or furnished by it. CIPCO is accordingly authorized to establish its own rates and other charges through which it can recover its cost of service. CIPCO is governed by a 13 member Board of Directors that are elected by the CIPCO members. The Board of Directors is the rate making authority for CIPCO. CIPCO rates are not regulated by any state or federal authority. In a Board Resolution dated October 27, 2009, the CIPCO Board of Directors resolved that the rates and other charges for electrical energy services and the decommissioning fund be established assuming a real rate of return on the decommissioning fund of four percent.

(e) Corn Belt Power Cooperative is a public corporation incorporated under Chapter 499 Iowa Code (2009). Corn Belt has the authority and is required to fix, establish, and collect adequate rates and other charges for electrical energy or services sold or furnished by it. Corn Belt is governed by an 11 member Board of Directors who are elected by its members. The Corn Belt Board of Directors is accordingly authorized to establish its own rates and other charges through which it can recover its cost of service and is the rate making authority for the Cooperative. The Cooperative's rates are not regulated by any state or federal authority. In a Board Resolution dated May 2, 2014, the Corn Belt Board of Directors resolved that the rates and other charges for electrical energy services and the decommissioning fund be established assuming a real rate of return on the decommissioning fund of four percent.

5. Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v). None

6. Any modifications to a licensee's method of providing financial assurance occurring since the last submitted report. None

7. Any material changes to trust agreements. None

DUANE ARNOLD ENERGY CENTER
NRC Minimum Decommissioning Cost Determination

NRC Minimum = $121.2 million X (0.65L + 0.13E + 0.22B)

Where:

$121.2 million is value for reference BWR in 1986 dollars

L = Labor escalation factor to current year[38]

E = Energy escalation factor to current year[39]

B = LLRW escalation factor to current year[40]

#	Item Description	Value
1	Labor escalation factor for Quarter 4, 2016 [38]	125.7
2	Base adjustment factor from NUREG-1307 [37]	2.08
3	Escalation factor from NUREG-1307	100
4	L = #1 times #2 divided by #3	2.61
5	Electric power escalation factor, 2016 [41]	215.0
6	Electric power escalation factor for Jan., 1986 from NUREG-1307	114.2
7	Fuel escalation factor for 2016 [42]	152.0
8	Fuel escalation factor for Jan., 1986 from NUREG-1307	82
9	P = #5 divided by #6	1.88
10	F = #7 divided by #8	1.85
11	E = 0.54P(#9) + 0.46F(#10) per NUREG-1307	1.87
12	Value of B from Table 2.1 of NUREG-1307 [40]	13.132
13	0.65L(#4) + 0.13E(#11) + 0.22B(#12)	4.83
14	1986 minimum-millions of dollars for BWR	121.2
15	2016 minimum-millions of dollars: #13 times #14	585.6

[37] NUREG 1307, Rev 16, Table 3.2

[38] NUREG 1307 specified that source is Bureau of Labor Statistics Data, Employment Cost Index, Series CIU2010000000230I (Midwest Region).

[39] NUREG 1307 specifies that source is a weighted calculation using Bureau of Labor Statistics Data, Producer Price Index-Commodities, Series wpu0573 (light fuel oils) and wpu0543 (industrial electric power).

[40] NUREG 1307 provides a value for B in Table 2.1. In the March 2017 Revision 16 of the CWF in Andrews County, Texas is also available as a full-service (i.e. Class A, B and C) LLW disposal facility for waste generators located in States not affiliate with the Texas Compact Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposal at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S.,

[41] December 2016 value is 215.0. (See note #40) Information was preliminary as of 01/11/17.

[42] December 2016 value 152.0 (See note #40) Information was preliminary as of 01/13/17.

Point Beach Nuclear Plant – Unit 1
NextEra Energy Point Beach, LLC (NextEra),
Decommissioning Funding Status Report

1. **The minimum decommissioning fund estimate pursuant to 10 CFR 50.75(b) and (c).**

	NRC Minimum (a)
NextEra (100%)	425,694,408

(a) Refer to Point Beach Unit 1 for calculation assumptions.

2. **The amount accumulated at the end of the calendar year preceding the date of the report. (Trust fund balance is net of taxes)**

	Total
NextEra (100%)	410,419,939

3. **Projected Funds at Shutdown (2% real rate of return).**

	Total
NextEra (100%) (see note (b))	579,154,627

(b) Projection includes a pro-rata credit during the dismantlement period pursuant to 10CFR 50.75(e)(1)(ii).

4. **Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v).** None

5. **Any modifications to a licensee's method of providing financial assurance occurring since the last submitted report.** None

6. **Any material changes to trust agreements.** None

POINT BEACH NUCLEAR PLANT - UNIT 1
NRC Minimum Decommissioning Cost Determination

NRC Minimum = $90.84 million X (0.65L + 0.13E + 0.22B)

Where:

$90.84 million is value for reference PWR in 1986 dollars

L = Labor escalation factor to current year[44]

E = Energy escalation factor to current year[45]

B = LLRW escalation factor to current year[46]

#	Item Description	Value
1	Labor escalation factor for Quarter 4, 2016 [44]	125.7
2	Base adjustment factor from NUREG-1307 [43]	2.08
3	Escalation factor from NUREG-1307	100
4	L = #1 times #2 divided by #3	2.61
5	Electric power escalation factor, 2016 [47]	215.0
6	Electric power escalation factor for Jan., 1986 from NUREG-1307	114.2
7	Fuel escalation factor for 2016 [48]	152.0
8	Fuel escalation factor for Jan., 1986 from NUREG-1307	82
9	P = #5 divided by #6	1.88
10	F = #7 divided by #8	1.85
11	E = 0.58P(#9) + 0.42F(#10) per NUREG-1307	1.87
12	Value of B from Table 2.1 of NUREG-1307 [46]	12.471
13	0.65L(#4) + 0.13E(#11) + 0.22B(#12)	4.69
14	1986 minimum-millions of dollars for PWR	90.84
15	2016 minimum-millions of dollars: #13 times #14	425.7

[43] NUREG 1307, Rev 16, Table 3.2

[44] NUREG 1307 specified that source is Bureau of Labor Statistics Data, Employment Cost Index, Series CIU2010000000230I (Midwest Region).

[45] NUREG 1307 specifies that source is a weighted calculation using Bureau of Labor Statistics Data, Producer Price Index-Commodities, Series wpu0573 (light fuel oils) and wpu0543 (industrial electric power).

[46] NUREG 1307 provides a value for B in Table 2.1. In the March 2017 Revision 16, the CWF in Andrews County, Texas, is also available as a full-service (i.e., Class A, B, and C) LLW disposal facility for waste generators located in States not affiliated with the Texas Compact. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of-compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S., the Generic LLW Disposal Site option used in previous versions of NUREG-1307 is replaced with this option, which provides Bx values representing a composite of the disposal rates for these two disposal facilities.

[47] December 2016 value is 215.0 (See note #46) Information was preliminary as of 01/13/17.

[48] December 2016 value is 152.0 (See note #46) Information was preliminary as of 01/13/17.

Point Beach Nuclear Plant – Unit 2
NextEra Energy Point Beach, LLC (NextEra),
Decommissioning Funding Status Report

1. **The minimum decommissioning fund estimate pursuant to 10 CFR 50.75(b) and (c).**

	NRC Minimum (a)
NextEra (100%)	425,694,408

(a) Refer to Point Beach Unit 2 for calculation assumptions.

2. **The amount accumulated at the end of the calendar year preceding the date of the report. (Trust fund balance is net of taxes)**

	Total
NextEra (100%)	386,710,421

3. **Projected Funds at Shutdown (2% real rate of return).**

	Total
NextEra (100%) (see note (b))	572,382,852

(b) Projection includes a pro-rata credit during the dismantlement period pursuant to 10CFR 50.75(e)(1)(ii).

4. **Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v).** None

5. **Any modifications to a licensee's method of providing financial assurance occurring since the last submitted report.** None

6. **Any material changes to trust agreements.** None

POINT BEACH NUCLEAR PLANT - UNIT 2
NRC Minimum Decommissioning Cost Determination

NRC Minimum = $90.84 million X (0.65L + 0.13E + 0.22B)

Where:

$90.84 million is value for reference PWR in 1986 dollars

L = Labor escalation factor to current year[50]

E = Energy escalation factor to current year[51]

B = LLRW escalation factor to current year[52]

#	Item Description	Value
1	Labor escalation factor for Quarter 4, 2016 [50]	125.7
2	Base adjustment factor from NUREG-1307 [49]	2.08
3	Escalation factor from NUREG-1307	100
4	L = #1 times #2 divided by #3	2.61
5	Electric power escalation factor, 2016 [53]	215.0
6	Electric power escalation factor for Jan., 1986 from NUREG-1307	114.2
7	Fuel escalation factor for 2016 [54]	152.0
8	Fuel escalation factor for Jan., 1986 from NUREG-1307	82
9	P = #5 divided by #6	1.88
10	F = #7 divided by #8	1.85
11	E = 0.58P(#9) + 0.42F(#10) per NUREG-1307	1.87
12	Value of B from Table 2.1 of NUREG-1307 [52]	12.471
13	0.65L(#4) + 0.13E(#11) + 0.22B(#12)	4.69
14	1986 minimum-millions of dollars for PWR	90.84
15	2016 minimum-millions of dollars: #13 times #14	425.7

[49] NUREG 1307, Rev 16, Table 3.2

[50] NUREG 1307 specified that source is Bureau of Labor Statistics Data, Employment Cost Index, Series CIU2010000000230I (Midwest Region).

[51] NUREG 1307 specifies that source is a weighted calculation using Bureau of Labor Statistics Data, Producer Price Index-Commodities, Series wpu0573 (light fuel oils) and wpu0543 (industrial electric power).

[52] NUREG 1307 provides a value for B in Table 2.1. In the March 2017 Revision 16, the CWF in Andrews County, Texas, is also available as a full-service (i.e., Class A, B, and C) LLW disposal facility for waste generators located in States not affiliated with the Texas Compact. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of-compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S., the Generic LLW Disposal Site option used in previous versions of NUREG-1307 is replaced with this option, which provides Bx values representing a composite of the disposal rates for these two disposal facilities.

[53] December 2016 value is 215.0 (See note #52) Information was preliminary as of 01/13/17.

[54] December 2016 value is 152.0 (See note #52) Information was preliminary as of 01/13/17.

Enclosure 2

Independent Spent Fuel Storage Installation (ISFSI)
Decommissioning Financial Assurance Update
10 CFR 72.30(c)
Cost Estimates Prepared by TLG Services, Inc.

ISFSI Decommissioning Financial Assurance Update
10 CFR 72.30(c)

The following table adjusts the ISFSI Decommissioning Funding Plans to 2016 dollars. The reports are provided in the following pages.

Site	Trust Balance as of 12/31/16 ($Thousands)	Projected 10 CFR 50.75 Decommissioning Trust Fund Value ($Thousands)	NRC Minimum Amount per 10 CFR 50.75(b) ($Thousands)	Decommissioning Trust Fund Value Surplus ($Thousands)	ISFSI Decommissioning Cost Estimate ($Thousands)
St. Lucie Unit 1	1,014,178	1,482,685	468,367	1,014,318	4,754
St. Lucie Unit 2 - FPL	859,684	1,446,594	398,601	1,047,993	4,045
St. Lucie Unit 2 - FMPA	73,909	124,367	41,244	83,123	419
St. Lucie Unit 2 - OUC	41,044	69,065	28,521	40,544	289
Turkey Point Unit 3	839,232	1,142,067	453,110	688,957	3,887
Turkey Point Unit 4	948,101	1,308,904	453,110	855,794	3,887
Seabrook - NextEra	593,288	827,989	444,090	383,899	4,947
Seabrook - MMWEC	56,192	78,421	58,354	20,067	650
Seabrook - Tauton	676	943	505	438	6
Seabrook - Hudson	516	720	389	331	4
Duane Arnold - NextEra	354,653	535,142	409,932	125,211	4,657
Duane Arnold - Corn Belt	28,819	65,397	58,562	6,836	665
Duane Arnold - CIPCO	60,673	137,679	117,123	20,556	1,331
Point Beach Unit 1	410,420	579,155	425,694	153,460	4,053
Point Beach Unit 2	386,710	572,383	425,694	146,688	4,053

10 CFR 72.30 ISFSI Decommissioning Cost Estimate

1. Background and Introduction

The Nuclear Regulatory Commission (NRC) issued its final rule on Decommissioning Planning on June 17, 2011,[1] with the rule becoming effective on December 17, 2012. Subpart 72.30, "Financial assurance and recordkeeping for decommissioning," requires that each holder of, or applicant for, a license under this part must submit for NRC review and approval a decommissioning funding plan that contains information on how reasonable assurance will be provided that funds will be available to decommission the Independent Spent Fuel Storage Installation (ISFSI).

In accordance with the rule, this letter provides a detailed cost estimate for decommissioning the ISFSI at St. Lucie in an amount reflecting:

1. The work is performed by an independent contractor;
2. An adequate contingency factor; and
3. Release of the facility and dry storage systems for unrestricted use, as specified in 10 CFR Part 20.1402

This letter also provides:

1. Identification of the key assumptions contained in the cost estimate; and
2. The volume of onsite subsurface material containing residual radioactivity, if any, that will require remediation to meet the criteria for license termination.

2. Spent Fuel Management Strategy

The operating licenses for Units 1 and 2 at St. Lucie are currently set to expire on March 1, 2036 and April 6, 2043, respectively. Approximately 6,710 spent fuel assemblies are currently projected to be generated as a result of plant operations through the license expiration dates.

Under the current spent fuel management plan, and assuming that the units operate to the end of their currently licensed lives, approximately 2,528 spent fuel assemblies in 79 modules will have been relocated to the ISFSI during plant operations. Another 1,558 spent fuel assemblies are expected to be transferred to the ISFSI once operations cease (fuel that cannot be directly transferred from the pools to the DOE within the first 5 years of pool operations).

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1 U.S. Code of Federal Regulations, Title 10, Parts 20, 30, 40, 50, 70 and 72 "Decommissioning Planning," Nuclear Regulatory Commission, Federal Register Volume 76, Number 117 (p 35512 et seq.), June 17, 2011

To facilitate immediate dismantling or safe-storage operations, the spent fuel is assumed to be packaged in dry storage containers (DSCs) for interim storage at the ISFSI. Transferring the spent fuel from the pool to the ISFSI will permit decontamination and dismantling of the spent fuel pool systems and fuel pool areas or resulting in reduced operating expenses should the station be placed into a SAFSTOR dormancy configuration.

Completion of the ISFSI decommissioning process is dependent upon the DOE's ability to remove spent fuel from the site. DOE's repository program assumes that spent fuel allocations will be accepted for disposal from the nation's commercial nuclear plants, with limited exceptions, in the order (the "queue") in which it was discharged from the reactor.[2] For purposes of this analysis, Florida Power & Light Company's (FPL) current spent fuel management plan for the St. Lucie spent fuel [3] is based upon the first assemblies being removed from the site in 2032. Assuming a maximum rate of transfer of 3,000 metric tons of uranium/year,[4] the spent fuel is projected to be completely removed from the St. Lucie site in 2073.

3. ISFSI Decommissioning Strategy

At the conclusion of the spent fuel transfer process the ISFSI will be promptly decommissioned (similar to the power reactor DECON alternative) by removing and disposing of residual radioactivity and verifying that remaining materials satisfy NRC release criteria.

For purposes of providing an estimate for a funding plan, financial assurance is expected to be provided on the basis of a prompt ISFSI decommissioning scenario. In this estimate the ISFSI decommissioning is considered an independent project, regardless of the decommissioning alternative identified for the nuclear power plant.

4. ISFSI Description

The St. Lucie ISFSI is based upon a NUHOMS®-32PTH dry storage system and is operated under a general license (10 CFR Part 50). The NUHOMS® system is comprised of a DSC and a horizontal storage module (HSM). The DSCs are assumed to be transferred directly to the DOE and not returned to the station. Some of the remaining HSMs are assumed to have residual radioactivity due to some minor level of neutron-

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2 U.S. Code of Federal Regulations, Title 10, Part 961.11, Article IV – Responsibilities of the Parties, B. DOE Responsibilities, 5.(a) ... DOE shall issue an annual acceptance priority ranking for receipt of SNF and/or HLW at the DOE repository. This priority ranking shall be based on the age of SNF and/or HLW as calculated from the date of discharge of such materials from the civilian nuclear power reactor. The oldest fuel or waste will have the highest priority for acceptance, except as ..."

3 "Decommissioning Cost Analysis for the St. Lucie Nuclear Plant, Units 1 and 2," prepared for Florida Power & Light Company by TLG Services, Inc., Document No. F02-1714-001, Rev. 0, November 2015

4 "Acceptance Priority Ranking & Annual Capacity Report," DOE/RW-0567, July 2004

induced activation as a result of the long-term storage of the spent fuel. The cost to dispose of residual radioactivity, and verify that the remaining facility and surrounding environs meet the NRC's radiological limits established for unrestricted use, form the basis of the ISFSI decommissioning estimate.

FPL's current spent fuel management plan for the St. Lucie spent fuel would result in 129 HSMs (nominal 32 assemblies per DSC) being in position on the storage pad at the site after all spent fuel has been removed from the spent fuel pools. This represents approximately 61% of the total spent fuel projected to be generated during the currently licensed operating period.

In addition to the spent fuel HSMs located on the ISFSI pad after shutdown there are projected to be additional HSMs that are expected to be used for Greater-than-Class-C (GTCC) storage. The HSMs used for the GTCC canisters (estimated quantity of 14) are not expected to have any interior contamination or residual activation and can be reused or disposed of by conventional means after a final status survey.

Table 1 provides the significant quantities and physical dimensions used as the basis in developing the ISFSI decommissioning estimate.

5. Key Assumptions / Estimating Approach

The decommissioning estimate is based on the configuration of the ISFSI expected after all spent fuel and GTCC material has been removed from the site. The configuration of the ISFSI is based on the two units at St. Lucie operating until the end of their current licenses, March 1, 2036 and April 6, 2043, respectively, and the assumptions associated with DOE's spent fuel acceptance, as previously described.

The nominal size of the ISFSI pad is sufficient to store the projected amount of spent fuel and is expected to be approximately 288 feet in width, and 456 feet in length.

It is not expected that the HSMs will have any interior or exterior radioactive surface contamination. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Any neutron activation of the steel and concrete is expected to be extremely small. To validate this assumption, the estimate accounts for characterization of 10% of the HSMs; it is likely that some of this characterization will take place well before the last of the fuel is removed from the ISFSI in order to establish a more definitive decommissioning scope.

The decommissioning estimate is based on the premise that some of the DSC support structure and surrounding concrete within the HSMs will contain low levels of neutron-induced residual radioactivity that would necessitate remediation at the time of decommissioning. As an allowance, 14 of the 129 HSMs are assumed to be affected, i.e., contain residual radioactivity. The allowance quantity is based upon the number of DSCs

required for the final core off-load (i.e., 217 offloaded assemblies per unit for 434 total, 32 assemblies per DSC) which results in a total of approximately 14 HSMs that contain residual radioactivity.

It is not expected that there will be any residual contamination left on the concrete ISFSI pad. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Therefore, it is assumed for this analysis that the ISFSI pad will not be contaminated. As such, only verification surveys are included for the pad in the decommissioning estimate.

FPL has no record of onsite subsurface material associated with the ISFSI containing residual radioactivity that will require remediation to meet the criteria for license termination.

To support an application for License Termination, the estimate assumes that a Final Status Survey will be performed; this will include a 100% survey of the ISFSI pad and the immediate area surrounding the pad, and a significant fraction of the HSMs surfaces.

Decommissioning is assumed to be performed by an independent contractor. As such, essentially all labor, equipment, and material costs are based on national averages, i.e., costs from national publications such as R.S. Means' Building Construction Cost Data (adjusted for regional variations), and laboratory service costs are based on vendor price lists. FPL, as licensee, will oversee the site activities; the estimate includes FPL's labor and overhead costs. The licensee's costs are based upon current, average, fleet salaries and associated expenses, for selected positions.

Low-level radioactive waste transport and disposal costs are based on rates consistent with the most recently developed decommissioning cost estimate.

Costs are reported in 2015 dollars.

Contingency has been added at an overall rate of 25%. This is consistent with the contingency evaluation criteria referenced by the NRC in NUREG-1757.[5]

The estimate is limited to costs necessary to terminate the ISFSI's NRC license and meet the §20.1402 criteria for unrestricted use. Disposition of released material and structures is outside the scope of the estimate.

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5 "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," U.S. Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards, NUREG-1757, Volume 3, Revision 1, February 2012

6. Cost Estimate

The estimated cost to decommission the ISFSI and release the facility for unrestricted use is provided in Table 2. The cost has been organized into three phases, including:

- An initial planning phase - empty HSMs are characterized and the specifications and work procedures for the decontamination (DSC support structure removal) developed.
- The remediation phase - residual radioactivity is removed, packaged in certified waste containers, transported to the low-level waste site, and disposed of at low-level waste.
- The final phase - license termination surveys, independent surveys are completed, and an application for license termination submitted.

In addition to the direct costs associated with a contractor providing the decommissioning services, the estimate also contains costs for the NRC (and NRC contractor), FPL's oversight staff, site security (industrial), and other site operating costs.

For estimating purposes it should be conservatively assumed that all expenditures will be incurred in the year 2074, the year following all spent fuel removal.

Table 1
Significant Quantities and Physical Dimensions

ISFSI Pad

Item	Length (ft)	Width (ft)	Residual Radioactivity
ISFSI Pad	456	288	No

ISFSI Horizontal Storage Module

Item	Value	Notes (all dimensions are nominal)
Outside Height (inches)	222	without vent cover
Outside Length (inches)	248	without shield walls
Outside Width (inches)	116	without shield walls
Quantity (total)	143	Spent Fuel (129) GTCC (14)
Quantity (with residual radioactivity)	14	Equivalent to the number of HSMs used to store last complete core offload
HSMs with Residual Radioactivity (pounds)	4,300,800	includes concrete and steel
Dry Active Waste and Filters (pounds)	70,440	secondary waste from surveys and demolition
Low-Level Radioactive Waste (cubic feet)	29,908	
Low-Level Radioactive Waste (packaged density)	146	average weight density

Other Potentially Impacted Items

Item	Value	Notes
Number of HSMs used for GTCC storage	14	no residual radioactivity

Table 2
ISFSI Decommissioning Costs[1] and Waste Volumes

	(thousands, 2015 dollars)						Waste Volume	Person-Hours	
	Removal	Packaging	Transport	Disposal	Other	Total	(ft3)	Craft	Oversight and Contractor
Decommissioning Contractor									
Planning (characterization, specs and procedures)	-	-	-	-	289	289	-	-	1,264
Remediation (HSM disposition)	678	6	1,297	2,030	-	4,011	29,908	6,914	-
License Termination (radiological surveys)	-	-	-	-	1,915	1,915	-	18,155	-
Subtotal	**678**	**6**	**1,297**	**2,030**	**2,204**	**6,215**	**29,908**	**25,068**	**1,264**
Supporting Costs									
NRC and NRC Contractor Fees and Costs	-	-	-	-	411	411	-	-	776
Florida LLRW Inspection Fee	-	-	-	-	58	58	-	-	-
Insurance	-	-	-	-	136	136	-	-	-
Property taxes	-	-	-	-	24	24	-	-	-
Plant energy budget	-	-	-	-	199	199	-	-	-
Security (industrial)	-	-	-	-	147	147	-	-	3,457
Licensee Oversight Staff	-	-	-	-	318	318	-	-	3,803
Subtotal	-	-	-	-	**1,293**	**1,293**	-	-	**8,036**
Total (w/o contingency)	**678**	**6**	**1,297**	**2,030**	**3,497**	**7,508**	**29,908**	**25,068**	**9,300**
Total (w/25% contingency)	**848**	**7**	**1,621**	**2,537**	**4,372**	**9,385**			

Note 1: for funding planning purposes decommissioning costs can be assumed to be incurred in year 2074

10 CFR 72.30 ISFSI Decommissioning Cost Estimate

1. Background and Introduction

The Nuclear Regulatory Commission (NRC) issued its final rule on Decommissioning Planning on June 17, 2011,[1] with the rule becoming effective on December 17, 2012. Subpart 72.30, "Financial assurance and recordkeeping for decommissioning," requires that each holder of, or applicant for, a license under this part must submit for NRC review and approval a decommissioning funding plan that contains information on how reasonable assurance will be provided that funds will be available to decommission the Independent Spent Fuel Storage Installation (ISFSI).

In accordance with the rule, this letter provides a detailed cost estimate for decommissioning the ISFSI at Turkey Point in an amount reflecting:

1. The work is performed by an independent contractor;
2. An adequate contingency factor; and
3. Release of the facility and dry storage systems for unrestricted use, as specified in 10 CFR Part 20.1402

This letter also provides:

1. Identification of the key assumptions contained in the cost estimate; and
2. The volume of onsite subsurface material containing residual radioactivity, if any, that will require remediation to meet the criteria for license termination.

2. Spent Fuel Management Strategy

The operating licenses for Units 3 and 4 at Turkey Point are currently set to expire on July 19, 2032 and April 10, 2033, respectively. Approximately 4,653 spent fuel assemblies are currently projected to be generated as a result of plant operations through the license expiration dates.

Under the current spent fuel management plan, and assuming that the units operate to the end of their currently licensed lives, approximately 1,920 spent fuel assemblies in 60 modules will have been relocated to the ISFSI during plant operations. Another 1,869 spent fuel assemblies are expected to be transferred to the ISFSI once operations cease (fuel that cannot be directly transferred from the pools to the DOE within the first 5 years of pool operations).

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[1] U.S. Code of Federal Regulations, Title 10, Parts 20, 30, 40, 50, 70 and 72 "Decommissioning Planning," Nuclear Regulatory Commission, Federal Register Volume 76, Number 117 (p 35512 et seq.), June 17, 2011

To facilitate immediate dismantling or safe-storage operations, the spent fuel is assumed to be packaged in dry storage containers (DSCs) for interim storage at the ISFSI. Transferring the spent fuel from the pool to the ISFSI will permit decontamination and dismantling of the spent fuel pool systems and fuel pool areas or resulting in reduced operating expenses should the station be placed into a SAFSTOR dormancy configuration.

Completion of the ISFSI decommissioning process is dependent upon the DOE's ability to remove spent fuel from the site. DOE's repository program assumes that spent fuel allocations will be accepted for disposal from the nation's commercial nuclear plants, with limited exceptions, in the order (the "queue") in which it was discharged from the reactor.[2] For purposes of this analysis, Florida Power & Light Company's (FPL) current spent fuel management plan for the Turkey Point spent fuel [3] is based upon the first assemblies being removed from the site in 2031. Assuming a maximum rate of transfer of 3,000 metric tons of uranium/year,[4] the spent fuel is projected to be completely removed from the Turkey Point site in 2072.

3. ISFSI Decommissioning Strategy

At the conclusion of the spent fuel transfer process the ISFSI will be promptly decommissioned (similar to the power reactor DECON alternative) by removing and disposing of residual radioactivity and verifying that remaining materials satisfy NRC release criteria.

For purposes of providing an estimate for a funding plan, financial assurance is expected to be provided on the basis of a prompt ISFSI decommissioning scenario. In this estimate the ISFSI decommissioning is considered an independent project, regardless of the decommissioning alternative identified for the nuclear power plant.

4. ISFSI Description

The Turkey Point ISFSI is based upon a NUHOMS®-32PT dry storage system and is operated under a general license (10 CFR Part 50). The NUHOMS® system is comprised of a DSC and a horizontal storage module (HSM). The DSCs are assumed to be transferred directly to the DOE and not returned to the station. Some of the remaining HSMs are assumed to have residual radioactivity due to some minor level of neutron-

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2 U.S. Code of Federal Regulations, Title 10, Part 961.11, Article IV – Responsibilities of the Parties, B. DOE Responsibilities, 5.(a) ... DOE shall issue an annual acceptance priority ranking for receipt of SNF and/or HLW at the DOE repository. This priority ranking shall be based on the age of SNF and/or HLW as calculated from the date of discharge of such materials from the civilian nuclear power reactor. The oldest fuel or waste will have the highest priority for acceptance, except as ..."

3 "Decommissioning Cost Analysis for the Turkey Point Nuclear Plant, Units 3 and 4," prepared for Florida Power & Light Company by TLG Services, Inc., Document No. F02-1714-002, Rev. 0, November 2015

4 "Acceptance Priority Ranking & Annual Capacity Report," DOE/RW-0567, July 2004

induced activation as a result of the long-term storage of the spent fuel. The cost to dispose of residual radioactivity, and verify that the remaining facility and surrounding environs meet the NRC's radiological limits established for unrestricted use, form the basis of the ISFSI decommissioning estimate.

FPL's current spent fuel management plan for the Turkey Point spent fuel would result in 120 HSMs (nominal 32 assemblies per DSC) being in position on the storage pad at the site after all spent fuel has been removed from the spent fuel pools. This represents approximately 82% of the total spent fuel projected to be generated during the currently licensed operating period.

In addition to the spent fuel HSMs located on the ISFSI pad after shutdown there are projected to be additional HSMs that are expected to be used for Greater-than-Class-C (GTCC) storage. The HSMs used for the GTCC canisters (estimated quantity of 10) are not expected to have any interior contamination or residual activation and can be reused or disposed of by conventional means after a final status survey.

Table 1 provides the significant quantities and physical dimensions used as the basis in developing the ISFSI decommissioning estimate.

5. Key Assumptions / Estimating Approach

The decommissioning estimate is based on the configuration of the ISFSI expected after all spent fuel and GTCC material has been removed from the site. The configuration of the ISFSI is based on the two units at Turkey Point operating until the end of their current licenses, July 19, 2032 and April 10, 2033, respectively, and the assumptions associated with DOE's spent fuel acceptance, as previously described.

The nominal size of the ISFSI pad is sufficient to store the projected amount of spent fuel and is expected to be approximately 128 feet in width, and 780 feet in length.

It is not expected that the HSMs will have any interior or exterior radioactive surface contamination. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Any neutron activation of the steel and concrete is expected to be extremely small. To validate this assumption, the estimate accounts for characterization of 10% of the HSMs; it is likely that some of this characterization will take place well before the last of the fuel is removed from the ISFSI in order to establish a more definitive decommissioning scope.

The decommissioning estimate is based on the premise that some of the DSC support structure and surrounding concrete within the HSMs will contain low levels of neutron-induced residual radioactivity that would necessitate remediation at the time of decommissioning. As an allowance, 10 of the 120 HSMs are assumed to be affected, i.e., contain residual radioactivity. The allowance quantity is based upon the number of DSCs

required for the final core off-load (i.e., 157 offloaded assemblies per unit for 314 total, 32 assemblies per DSC) which results in a total of approximately 10 HSMs that contain residual radioactivity.

It is not expected that there will be any residual contamination left on the concrete ISFSI pad. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Therefore, it is assumed for this analysis that the ISFSI pad will not be contaminated. As such, only verification surveys are included for the pad in the decommissioning estimate.

FPL has no record of onsite subsurface material associated with the ISFSI containing residual radioactivity that will require remediation to meet the criteria for license termination.

To support an application for License Termination, the estimate assumes that a Final Status Survey will be performed; this will include a 100% survey of the ISFSI pad and the immediate area surrounding the pad, and a significant fraction of the HSMs surfaces.

Decommissioning is assumed to be performed by an independent contractor. As such, essentially all labor, equipment, and material costs are based on national averages, i.e., costs from national publications such as R.S. Means' Building Construction Cost Data (adjusted for regional variations), and laboratory service costs are based on vendor price lists. FPL, as licensee, will oversee the site activities; the estimate includes FPL's labor and overhead costs. The licensee's costs are based upon current, average, fleet salaries and associated expenses, for selected positions.

Low-level radioactive waste transport and disposal costs are based on rates consistent with the most recently developed decommissioning cost estimate.

Costs are reported in 2015 dollars.

Contingency has been added at an overall rate of 25%. This is consistent with the contingency evaluation criteria referenced by the NRC in NUREG-1757.[5]

The estimate is limited to costs necessary to terminate the ISFSI's NRC license and meet the §20.1402 criteria for unrestricted use. Disposition of released material and structures is outside the scope of the estimate.

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5 "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," U.S. Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards, NUREG-1757, Volume 3, Revision 1, February 2012

6. Cost Estimate

The estimated cost to decommission the ISFSI and release the facility for unrestricted use is provided in Table 2. The cost has been organized into three phases, including:

- An initial planning phase - empty HSMs are characterized and the specifications and work procedures for the decontamination (DSC support structure removal) developed.
- The remediation phase - residual radioactivity is removed, packaged in certified waste containers, transported to the low-level waste site, and disposed of at low-level waste.
- The final phase - license termination surveys, independent surveys are completed, and an application for license termination submitted.

In addition to the direct costs associated with a contractor providing the decommissioning services, the estimate also contains costs for the NRC (and NRC contractor), FPL's oversight staff, site security (industrial), and other site operating costs.

For estimating purposes it should be conservatively assumed that all expenditures will be incurred in the year 2073, the year following all spent fuel removal.

Table 1
Significant Quantities and Physical Dimensions

ISFSI Pad

Item	Length (ft)	Width (ft)	Residual Radioactivity
ISFSI Pad	780	128	No

ISFSI Horizontal Storage Module

Item	Value	Notes (all dimensions are nominal)
Outside Height (inches)	222	without vent cover
Outside Length (inches)	248	without shield walls
Outside Width (inches)	116	without shield walls
Quantity (total)	130	Spent Fuel (120) GTCC (10)
Quantity (with residual radioactivity)	10	Equivalent to the number of HSMs used to store last complete core offloads
HSMs with Residual Radioactivity (pounds)	3,072,000	includes concrete and steel
Dry Active Waste and Filters (pounds)	50,772	secondary waste from surveys and demolition
Low-Level Radioactive Waste (cubic feet)	21,386	
Low-Level Radioactive Waste (packaged density)	146	average weight density

Other Potentially Impacted Items

Item	Value	Notes
Number of HSMs used for GTCC storage	10	no residual radioactivity

Table 2
ISFSI Decommissioning Costs[1] and Waste Volumes

	(thousands, 2015 dollars)						Waste Volume	Person-Hours	
	Removal	Packaging	Transport	Disposal	Other	Total	(ft3)	Craft	Oversight and Contractor
Decommissioning Contractor									
Planning (characterization, specs and procedures)	-	-	-	-	269	269	-	-	1,216
Remediation (HSM disposition)	635	5	983	1,452	-	3,074	21,386	6,285	-
License Termination (radiological surveys)	-	-	-	-	1,594	1,594	-	14,738	-
Subtotal	**635**	**5**	**983**	**1,452**	**1,863**	**4,937**	**21,386**	**21,023**	**1,216**
Supporting Costs									
NRC and NRC Contractor Fees and Costs	-	-	-	-	411	411	-	-	776
Florida LLRW Inspection Fee	-	-	-	-	42	42	-	-	-
Insurance	-	-	-	-	68	68	-	-	-
Property taxes	-	-	-	-	10	10	-	-	-
Plant energy budget	-	-	-	-	194	194	-	-	-
Security (industrial)	-	-	-	-	153	153	-	-	3,457
Licensee Oversight Staff	-	-	-	-	326	326	-	-	3,803
Subtotal	**-**	**-**	**-**	**-**	**1,203**	**1,203**	**-**	**-**	**8,036**
Total (w/o contingency)	**635**	**5**	**983**	**1,452**	**3,066**	**6,140**	**21,386**	**21,023**	**9,252**
Total (w/25% contingency)	**794**	**6**	**1,229**	**1,814**	**3,832**	**7,675**			

Note 1: for funding planning purposes decommissioning costs can be assumed to be incurred in year 2073

10 CFR 72.30 ISFSI Decommissioning Cost Estimate

1. Background and Introduction

The Nuclear Regulatory Commission (NRC) issued its final rule on Decommissioning Planning on June 17, 2011,[1] with the rule becoming effective on December 17, 2012. Subpart 72.30, "Financial assurance and recordkeeping for decommissioning," requires that each holder of, or applicant for, a license under this part must submit for NRC review and approval a decommissioning funding plan that contains information on how reasonable assurance will be provided that funds will be available to decommission the Independent Spent Fuel Storage Installation (ISFSI).

FPL/NextEra filed its initial ISFSI Decommissioning Funding Plan for Seabrook Station on December 17, 2012,[2] along with the other units in the fleet. Supplemental information was provided on August 12, 2014 in response to a request by the NRC for additional information.[3]

In accordance with the rule that states "at intervals not to exceed 3 years, the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination," this letter provides an updated, detailed cost estimate for decommissioning the ISFSI at Seabrook Station in an amount reflecting:

1. The work is performed by an independent contractor;
2. An adequate contingency factor; and
3. Release of the facility and dry storage systems for unrestricted use, as specified in 10 CFR Part 20.1402

This letter also provides:

1. Identification of the key assumptions contained in the cost estimate; and
2. The volume of onsite subsurface material containing residual radioactivity, if any, that will require remediation to meet the criteria for license termination.

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1 U.S. Code of Federal Regulations, Title 10, Parts 20, 30, 40, 50, 70 and 72 "Decommissioning Planning," Nuclear Regulatory Commission, Federal Register Volume 76, Number 117 (p 35512 et seq.), June 17, 2011

2 FPL Letter L-2012-442, ISFSI Decommissioning Funding Plans, NRC ADAMS Accession No. ML12354A134, dated December 17, 2012

3 FPL Letter L-2014-214, Reply to Request for Additional Information for Review of the Decommissioning Funding Plans Regarding the Independent Spent Fuel Storage Installations, NRC ADAMS Accession No. ML14225A655, dated August 12, 2014

2. Spent Fuel Management Strategy

The operating license for Seabrook Station is currently set to expire on March 15, 2030. Approximately 2,295 spent fuel assemblies are projected to be generated as a result of plant operations through the license expiration date.

Assuming that the unit operates to the end of its currently licensed life, and no spent fuel is transferred to the DOE during this time period, approximately 1,120 spent fuel assemblies in 35 modules will have been relocated to the ISFSI during plant operations. The remaining 1,175 spent fuel assemblies are expected to be transferred to the ISFSI once operations cease.

To facilitate immediate dismantling or safe-storage operations, the spent fuel is assumed to be packaged in dry storage containers (DSCs) for interim storage at the ISFSI. Transferring the spent fuel from the pool to the ISFSI will permit decontamination and dismantling of the spent fuel pool systems and fuel pool areas.

Completion of the ISFSI decommissioning process is dependent upon the DOE's ability to remove spent fuel from the site. DOE's repository program assumes that spent fuel allocations will be accepted for disposal from the nation's commercial nuclear plants, with limited exceptions, in the order (the "queue") in which it was discharged from the reactor.[4] However, for purposes of this analysis, NextEra Energy Seabrook, LLC's (NextEra) current spent fuel management plan for the Seabrook Station spent fuel is based on the New Hampshire Nuclear Decommissioning Finance Committee's directive in its 2014 Order. In that Order, fuel is assumed to remain on site until 2100.[5]

3. ISFSI Decommissioning Strategy

At the conclusion of the spent fuel transfer process the ISFSI will be promptly decommissioned (similar to the power reactor DECON alternative) by removing and disposing of residual radioactivity and verifying that remaining materials satisfy NRC release criteria.

For purposes of providing an estimate for a funding plan, financial assurance is expected to be provided on the basis of a prompt ISFSI decommissioning scenario. In this estimate the ISFSI decommissioning is considered an independent project, regardless of the decommissioning alternative identified for the nuclear power plant.

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4 U.S. Code of Federal Regulations, Title 10, Part 961.11, Article IV – Responsibilities of the Parties, B. DOE Responsibilities, 5.(a) … DOE shall issue an annual acceptance priority ranking for receipt of SNF and/or HLW at the DOE repository. This priority ranking shall be based on the age of SNF and/or HLW as calculated from the date of discharge of such materials from the civilian nuclear power reactor. The oldest fuel or waste will have the highest priority for acceptance, except as …"

5 New Hampshire Nuclear Decommissioning Financing Committee's December 12, 2014 Final Report and Order in Docket NDFC 2014-1

4. ISFSI Description

The Seabrook Station ISFSI is based upon a NUHOMS®-HD-32PTH dry storage system and operated under a general license (10 CFR Part 50). The NUHOMS® system is comprised of a DSC and a horizontal storage module (HSM). The DSCs are assumed to be transferred directly to the DOE and not returned to the station. Some of the remaining HSMs are assumed to have residual radioactivity due to some minor level of neutron-induced activation as a result of the long-term storage of the spent fuel. The cost to dispose of residual radioactivity, and verify that the remaining facility and surrounding environs meet the NRC's radiological limits established for unrestricted use, form the basis of the ISFSI decommissioning estimate.

NextEra's current spent fuel management plan for the Seabrook Station spent fuel would result in 72 HSMs (nominal 32 assemblies per DSC) being in position on the storage pad at the site after all spent fuel has been removed from the spent fuel pool. This represents 100% of the total spent fuel projected to be generated during the currently licensed operating period.

In addition to the spent fuel HSMs located on the ISFSI pad after shutdown there are projected to be additional HSMs that are expected to be used for Greater-than-Class-C (GTCC) storage. The HSMs used for the GTCC canisters (estimated quantity of 5) are not expected to have any interior contamination or residual activation and can be reused or disposed of by conventional means after a final status survey.

Table 1 provides the significant quantities and physical dimensions used as the basis in developing the ISFSI decommissioning estimate.

5. Key Assumptions / Estimating Approach

The decommissioning estimate is based on the configuration of the ISFSI expected after all spent fuel and GTCC material has been removed from the site. The configuration of the ISFSI is based on Seabrook Station operating until the end of its current license, March 15, 2030, and the assumptions associated with DOE's spent fuel acceptance, as previously described.

The nominal size of the ISFSI pad, approximately 123 feet in width, and 462 feet in length, is sufficient to store the projected amount of spent fuel.

It is not expected that the HSMs will have any interior or exterior radioactive surface contamination. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Any neutron activation of the steel and concrete is expected to be extremely small. To validate this assumption, the estimate accounts for characterization of 10% of the HSMs; it is likely that some of this characterization will take place well before the

last of the fuel is removed from the ISFSI in order to establish a more definitive decommissioning scope.

The decommissioning estimate is based on the premise that some of the DSC support structure within the HSMs and surrounding concrete will contain low levels of neutron-induced residual radioactivity that would necessitate remediation at the time of decommissioning. As an allowance, 7 of the 72 HSMs are assumed to be affected, i.e., contain residual radioactivity. The allowance quantity is based upon the number of DSCs required for the final core off-load (i.e., 193 offloaded assemblies, 32 assemblies per DSC) which results in a total of approximately 7 HSMs that contain residual radioactivity.

It is not expected that there will be any residual contamination left on the concrete ISFSI pad. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Therefore, it is assumed for this analysis that the ISFSI pad will not be contaminated. As such, only verification surveys are included for the pad in the decommissioning estimate.

The Seabrook ISFSI pad is placed on a bedrock foundation. NextEra has no record of onsite subsurface material associated with the ISFSI containing residual radioactivity that will require remediation to meet the criteria for license termination.

To support an application for License Termination, the estimate assumes that a Final Status Survey will be performed; this will include a 100% survey of the ISFSI pad and the immediate area surrounding the pad, and a significant fraction of the HSMs surfaces.

Decommissioning is assumed to be performed by an independent contractor. As such, essentially all labor, equipment, and material costs are based on national averages, i.e., costs from national publications such as R.S. Means' Building Construction Cost Data (adjusted for regional variations), and laboratory service costs are based on vendor price lists. NextEra, as licensee, will oversee the site activities; the estimate includes NextEra's labor and overhead costs. The licensee's costs are based upon current, average, fleet salaries and associated expenses, for selected positions.

Low-level radioactive waste transportation and disposal costs are based on rates consistent with the most recently developed decommissioning cost estimate, completed in May 2015.[6]

Costs are reported in 2014 dollars.

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6 "Decommissioning Cost Analysis for the Seabrook Station," TLG Document No. N35-1705-001, Rev. 0, dated May 2015

Contingency has been added at an overall rate of 25%. This is consistent with the contingency evaluation criteria referenced by the NRC in NUREG-1757.[7]

The estimate is limited to costs necessary to terminate the ISFSI's NRC license and meet the §20.1402 criteria for unrestricted use. Disposition of released material and structures is outside the scope of the estimate.

6. Cost Estimate

The estimated cost to decommission the ISFSI and release the facility for unrestricted use is provided in Table 2. The cost has been organized into three phases, including:

- An initial planning phase - empty HSMs are characterized and the specifications and work procedures for the decontamination (DSC support structure removal) developed.
- The remediation phase - residual radioactivity is removed, packaged in certified waste containers, transported to the low-level waste site, and disposed of at low-level waste.
- The final phase - license termination surveys, independent surveys are completed, and an application for license termination submitted.

In addition to the direct costs associated with a contractor providing the decommissioning services, the estimate also contains costs for the NRC (and NRC contractor), NextEra's oversight staff, site security (industrial), and other site operating costs.

For estimating purposes it should be conservatively assumed that all expenditures will be incurred in the year 2101, the year following all spent fuel removal.

7 "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," U.S. Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards, NUREG-1757, Volume 3, Revision 1, February 2012

Table 1
Significant Quantities and Physical Dimensions

ISFSI Pad

Item	Length (ft)	Width (ft)	Residual Radioactivity
ISFSI Pad	462	123	No

ISFSI Horizontal Storage Module

Item	Value	Notes (all dimensions are nominal)
Outside Height (inches)	222	without vent cover
Outside Length (inches)	248	without shield walls
Outside Width (inches)	116	without shield walls
Quantity (total)	77	spent fuel (72) GTCC (5)
Quantity (with residual radioactivity)	7	equivalent to the number of HSMs used to store last complete core offload
HSM Concrete with Potential Activation (pounds)	1,261,568	
HSM Internal Steel with Residual Radioactivity (pounds)	33,075	
Low-Level Radioactive Waste (cubic feet)	15,728	includes disposition of transfer cask and any dry active waste (DAW)
Low-Level Radioactive Waste (packaged density)	87	average packaged weight density, excluding transfer cask which is shipped intact

Other Potentially Impacted Items

Item	Value	Notes
Number of HSMs used for GTCC storage	5	no residual radioactivity

Table 2
ISFSI Decommissioning Costs[1] and Waste Volumes

	(thousands, 2014 dollars)						Waste Volume	Person-Hours	
	Removal	Packaging	Transport	Disposal	Other	Total	(cubic feet)	Craft	Oversight and Contractor
Decommissioning Contractor									
Planning (characterization, specs and procedures)	-	-	-	-	217	217	-	-	1,096
Remediation (activated metal removal)	23	53	608	1,198	-	1,881	15,728	169	-
License Termination (radiological surveys)	-	-	-	-	1,085	1,085	-	8,700	-
Subtotal	23	53	608	1,198	1,302	3,183	15,728	8,869	1,096
Supporting Costs									
NRC and NRC Contractor Fees and Costs	-	-	-	-	397	397	-	-	776
Insurance	-	-	-	-	67	67	-	-	-
NH Disposal Tax	-	-	-	-	236	236	-	-	-
Plant energy budget	-	-	-	-	87	87	-	-	-
Security (industrial)	-	-	-	-	183	183	-	-	5,096
Licensee Oversight Staff	-	-	-	-	271	271	-	-	3,866
Subtotal	-	-	-	-	1,240	1,240	-	-	9,737
Total (w/o contingency)	23	53	608	1,198	2,542	4,423	15,728	8,869	10,833
Total (w/25% contingency)	29	66	759	1,497	3,177	5,529			

Note 1: for funding planning purposes decommissioning costs can be assumed to be incurred in year 2101

10 CFR 72.30 ISFSI Decommissioning Cost Estimate

1. Background and Introduction

The Nuclear Regulatory Commission (NRC) issued its final rule on Decommissioning Planning on June 17, 2011,[1] with the rule becoming effective on December 17, 2012. Subpart 72.30, "Financial assurance and recordkeeping for decommissioning," requires that each holder of, or applicant for, a license under this part must submit for NRC review and approval a decommissioning funding plan that contains information on how reasonable assurance will be provided that funds will be available to decommission the Independent Spent Fuel Storage Installation (ISFSI).

The rules also requires resubmittal of the decommissioning funding plan at intervals not to exceed 3 years, with adjustments as necessary to account for changes in costs and the extent of contamination. This document is intended to update the funding plans previously submitted by Florida Power & Light Company (FPL) in August 2014.[2]

In accordance with the rule, this letter provides a detailed cost estimate for decommissioning the ISFSI at Duane Arnold in an amount reflecting:

1. The work is performed by an independent contractor;
2. An adequate contingency factor; and
3. Release of the facility and dry storage systems for unrestricted use, as specified in 10 CFR Part 20.1402

This letter also provides:

1. Identification of the key assumptions contained in the cost estimate; and
2. The volume of onsite subsurface material containing residual radioactivity, if any, that will require remediation to meet the criteria for license termination.

2. Spent Fuel Management Strategy

The operating license for Duane Arnold is currently set to expire on February 21, 2034. Approximately 4,712 spent fuel assemblies are currently projected to be generated as a result of plant operations through the license expiration date.

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1 U.S. Code of Federal Regulations, Title 10, Parts 20, 30, 40, 50, 70 and 72 "Decommissioning Planning," Nuclear Regulatory Commission, Federal Register Volume 76, Number 117 (p 35512 et seq.), June 17, 2011

2 FPL Letter No. L-2014-214 to the NRC, Reply to Request for Additional Information for Review of the Decommissioning Funding Plans Regarding the Independent Spent Fuel Storage Installations, dated August 12, 2014 (NRC Accession No. ML14225A655)

Under the current spent fuel management plan and assuming that the unit operates to the end of its currently licensed life, approximately 2,318 spent fuel assemblies in 38 modules will have been relocated to the ISFSI during plant operations. Another 1,403 spent fuel assemblies are expected to be transferred to the ISFSI once operations cease (fuel that cannot be directly transferred from the pools to the DOE within the first 5 years of pool operations).

To facilitate immediate dismantling or safe-storage operations, the spent fuel is assumed to be packaged in dry storage containers (DSCs) for interim storage at the ISFSI. Transferring the spent fuel from the pool to the ISFSI will permit decontamination and dismantling of the spent fuel pool systems and fuel pool areas or resulting in reduced operating expenses should the station be placed into a SAFSTOR dormancy configuration.

Completion of the ISFSI decommissioning process is dependent upon the DOE's ability to remove spent fuel from the site. DOE's repository program assumes that spent fuel allocations will be accepted for disposal from the nation's commercial nuclear plants, with limited exceptions, in the order (the "queue") in which it was discharged from the reactor.[3] For purposes of this analysis, NextEra Energy Duane Arnold, LLC's (NextEra) current spent fuel management plan for the Duane Arnold spent fuel[4] is based in general upon: 1) a 2030 start date for DOE initiating transfer of commercial spent fuel to a federal facility (not necessarily a final repository), and 2) expectations for spent fuel receipt by the DOE for the Duane Arnold fuel. The DOE's generator allocation/receipt schedules are based upon the oldest fuel receiving the highest priority. Assuming a maximum rate of transfer of 3,000 metric tons of uranium/year,[5] the spent fuel is projected to be removed from the Duane Arnold site in 2072.

3. ISFSI Decommissioning Strategy

This analysis assumes that, at the conclusion of the spent fuel transfer process, the ISFSI will be promptly decommissioned by removing and disposing of residual radioactivity and verifying that remaining materials satisfy NRC release criteria.

For purposes of providing an estimate for a funding plan, financial assurance is expected to be provided on the basis of a prompt ISFSI decommissioning scenario. In this estimate

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3 U.S. Code of Federal Regulations, Title 10, Part 961.11, Article IV – Responsibilities of the Parties, B. DOE Responsibilities, 5.(a) … DOE shall issue an annual acceptance priority ranking for receipt of SNF and/or HLW at the DOE repository. This priority ranking shall be based on the age of SNF and/or HLW as calculated from the date of discharge of such materials from the civilian nuclear power reactor. The oldest fuel or waste will have the highest priority for acceptance, except as …"

4 "2015 Decommissioning Cost Update of the Duane Arnold Energy Center," prepared for FPL Energy Duane Arnold, LLC by Energy*Solutions*, Document No 164024-DCE-016, Rev. 0, September 1, 2015

5 "Acceptance Priority Ranking & Annual Capacity Report," DOE/RW-0567, July 2004

the ISFSI decommissioning is considered an independent project, regardless of the decommissioning alternative identified for the nuclear power plant.

4. ISFSI Description

The Duane Arnold ISFSI is based upon a NUHOMS®-61BT dry storage system and is operated under a general license (10 CFR Part 50). The NUHOMS® system is comprised of a DSC and a horizontal storage module (HSM). The DSCs are assumed to be transferred directly to the DOE and not returned to the station. Some of the remaining HSMs are assumed to have residual radioactivity due to some minor level of neutron-induced activation as a result of the long-term storage of the spent fuel. The cost to dispose of residual radioactivity, and verify that the remaining facility and surrounding environs meet the NRC's radiological limits established for unrestricted use, form the basis of the ISFSI decommissioning estimate.

NextEra's current spent fuel management plan for the Duane Arnold spent fuel would result in 61 HSMs (nominal 61 assemblies per DSC) being in position on the storage pad at the site after all spent fuel has been removed from the spent fuel pool. This represents 78% of the total spent fuel projected to be generated during the currently licensed operating period.

In addition to the spent fuel HSMs located on the ISFSI pad after shutdown there are projected to be additional HSMs that are expected to be used for Greater-than-Class-C (GTCC) storage. The HSMs used for the GTCC canisters (estimated quantity of 4) are not expected to have any interior contamination or residual activation and can be reused or disposed of by conventional means after a final status survey.

Table 1 provides the significant quantities and physical dimensions used as the basis in developing the ISFSI decommissioning estimate.

5. Key Assumptions / Estimating Approach

The decommissioning estimate is based on the configuration of the ISFSI expected after all spent fuel and GTCC material has been removed from the site. The configuration of the ISFSI is based on Duane Arnold operating until the end of its current license, February 21, 2034, and the assumptions associated with DOE's spent fuel acceptance, as previously described.

The nominal size of the ISFSI pad is sufficient to store the projected amount of spent fuel and is expected to be approximately 122 feet in width, and 502 feet in length.

It is not expected that the HSMs will have any interior or exterior radioactive surface contamination. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Any neutron activation of the steel and concrete is expected to be extremely

small. To validate this assumption, the estimate accounts for characterization of 10% of the HSMs; it is likely that some of this characterization will take place well before the last of the fuel is removed from the ISFSI in order to establish a more definitive decommissioning scope.

The decommissioning estimate is based on the premise that some of the DSC support structure within the HSMs will contain low levels of neutron-induced residual radioactivity that would necessitate remediation at the time of decommissioning. As an allowance, 7 of the 61 HSMs are assumed to be affected, i.e., contain residual radioactivity. The allowance quantity is based upon the number of DSCs required for the final core off-load (i.e., 368 offloaded assemblies, 61 assemblies per DSC) which results in a total of approximately 7 HSMs that contain residual radioactivity.

It is not expected that there will be any residual contamination left on the concrete ISFSI pad. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Therefore, it is assumed for this analysis that the ISFSI pad will not be contaminated. As such, only verification surveys are included for the pad in the decommissioning estimate.

NextEra has no record of onsite subsurface material associated with the ISFSI containing residual radioactivity that will require remediation to meet the criteria for license termination.

To support an application for License Termination, the estimate assumes that a Final Status Survey will be performed; this will include a 100% survey of the ISFSI pad and the immediate area surrounding the pad, and a significant fraction of the HSMs surfaces.

Decommissioning is assumed to be performed by an independent contractor. As such, essentially all labor, equipment, and material costs are based on national averages, i.e., costs from national publications such as R.S. Means' Building Construction Cost Data (adjusted for regional variations), and laboratory service costs are based on vendor price lists. NextEra, as licensee, will oversee the site activities; the estimate includes NextEra's labor and overhead costs. The licensee's costs are based upon current, average, fleet salaries and associated expenses, for selected positions.

Low-level radioactive waste disposal costs are based on rates consistent with the most recently developed decommissioning FPL cost estimates (year 2015 dollars), escalated to 2016 dollars. Transport costs are based on current trucking tariffs.

Costs are reported in 2016 dollars.

Contingency has been added at an overall rate of 25%. This is consistent with the contingency evaluation criteria referenced by the NRC in NUREG-1757.[6]

The estimate is limited to costs necessary to terminate the ISFSI's NRC license and meet the §20.1402 criteria for unrestricted use. Disposition of released material and structures is outside the scope of the estimate.

6. Cost Estimate

The estimated cost to decommission the ISFSI and release the facility for unrestricted use is provided in Table 2. The cost has been organized into three phases, including:

- An initial planning phase - empty HSMs are characterized and the specifications and work procedures for the decontamination (DSC support structure removal) developed.
- The remediation phase - residual radioactivity is removed, packaged in certified waste containers, transported to the low-level waste site, and disposed of at low-level waste.
- The final phase - license termination surveys, independent surveys are completed, and an application for license termination submitted.

In addition to the direct costs associated with a contractor providing the decommissioning services, the estimate also contains costs for the NRC (and NRC contractor), NextEra's oversight staff, site security (industrial), and other site operating costs.

For estimating purposes it should be conservatively assumed that all expenditures will be incurred in the year 2073, the year following all spent fuel removal.

6 "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," U.S. Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards, NUREG-1757, Volume 3, Revision 1, February 2012

Table 1
Significant Quantities and Physical Dimensions

ISFSI Pad

Item	Length (ft)	Width (ft)	Residual Radioactivity
ISFSI Pad	502	122	No

ISFSI Horizontal Storage Module

Item	Value	Notes (all dimensions are nominal)
Outside Height (inches)	180	without vent cover
Outside Length (inches)	238	without shield walls
Outside Width (inches)	116	without shield walls
Quantity (total)	65	Spent Fuel (61) GTCC (4)
Quantity (with residual radioactivity)	7	Equivalent to the number of HSMs used to store last complete core offload)
HSM Internal Steel with Residual Radioactivity (pounds)	22,400	
Low-Level Radioactive Waste (cubic feet)	20,729	
Low-Level Radioactive Waste (packaged density)	119	Average weight density

Other Potentially Impacted Items

Item	Value	Notes
Number of HSMs used for GTCC storage	4	no residual radioactivity

Table 2
ISFSI Decommissioning Costs[1] and Waste Volumes

	(thousands, 2016 dollars)						Waste Volume	Person-Hours	
	Removal	Packaging	Transport	Disposal	Other	Total	Class A (cubic feet)	Craft Hours	Oversight and Contractor Hours
Decommissioning Contractor									
Planning (characterization, specs and procedures)	-	-	-	-	235	235	-	-	1,072
Remediation (activated metal removal)	52	3	569	2,405	14	3,043	20,729	314	-
License Termination (radiological surveys)	-	-	-	-	1,021	1,021	-	8,046	-
Subtotal	**52**	**3**	**569**	**2,405**	**1,271**	**4,299**	**20,729**	**8,360**	**1,072**
Supporting Costs									
NRC and NRC Contractor Fees and Costs	-	-	-	-	366	366	-	-	776
Insurance	-	-	-	-	81	81	-	-	-
Security (industrial)	-	-	-	-	266	266	-	-	5,949
Licensee Oversight Staff	-	-	-	-	311	311	-	-	4,171
Subtotal	-	-	-	-	**1,023**	**1,023**	-	-	**10,897**
Total (w/o contingency)	**52**	**3**	**569**	**2,405**	**2,294**	**5,322**	**20,729**	**8,360**	**11,969**
Total (w/25% contingency)	**64**	**4**	**711**	**3,006**	**2,868**	**6,653**			

Note 1: for funding planning purposes decommissioning costs can be assumed to be incurred in year 2073

10 CFR 72.30 ISFSI Decommissioning Cost Estimate

1. Background and Introduction

The Nuclear Regulatory Commission (NRC) issued its final rule on Decommissioning Planning on June 17, 2011,[1] with the rule becoming effective on December 17, 2012. Subpart 72.30, "Financial assurance and recordkeeping for decommissioning," requires that each holder of, or applicant for, a license under this part must submit for NRC review and approval a decommissioning funding plan that contains information on how reasonable assurance will be provided that funds will be available to decommission the Independent Spent Fuel Storage Installation (ISFSI).

The rules also requires resubmittal of the decommissioning funding plan at intervals not to exceed 3 years, with adjustments as necessary to account for changes in costs and the extent of contamination. This document is intended to update the funding plans previously submitted by Florida Power & Light Company (FPL) in August 2014.[2]

In accordance with the rule, this letter provides a detailed cost estimate for decommissioning the ISFSI at Point Beach in an amount reflecting:

1. The work is performed by an independent contractor;
2. An adequate contingency factor; and
3. Release of the facility and dry storage systems for unrestricted use, as specified in 10 CFR Part 20.1402

This letter also provides:

1. Identification of the key assumptions contained in the cost estimate; and
2. The volume of onsite subsurface material containing residual radioactivity, if any, that will require remediation to meet the criteria for license termination.

2. Spent Fuel Management Strategy

The operating licenses for Units 1 and 2 at Point Beach are currently set to expire on October 5, 2030 and March 8, 2033, respectively. Approximately 3,616 spent fuel assemblies are currently projected to be generated as a result of plant operations through the license expiration date.

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1 U.S. Code of Federal Regulations, Title 10, Parts 20, 30, 40, 50, 70 and 72 "Decommissioning Planning," Nuclear Regulatory Commission, Federal Register Volume 76, Number 117 (p 35512 et seq.), June 17, 2011

2 FPL Letter No. L-2014-214 to the NRC, Reply to Request for Additional Information for Review of the Decommissioning Funding Plans Regarding the Independent Spent Fuel Storage Installations, dated August 12, 2014 (NRC Accession No. ML14225A655)

Under the current spent fuel management plan and assuming that the units operate to the end of their currently licensed lives, approximately 2,048 spent fuel assemblies in 68 modules (16 VSCs and 52 HSMs) will have been relocated to the ISFSI during plant operations. Another 544 spent fuel assemblies (17 HSMs) are expected to be transferred to the ISFSI once operations cease (fuel that cannot be directly transferred from the pools to the DOE within the first 5 years of pool operations).

To facilitate immediate dismantling or safe-storage operations, the spent fuel is assumed to be packaged in dry storage containers (DSCs) for interim storage at the ISFSI. Transferring the spent fuel from the pool to the ISFSI will permit decontamination and dismantling of the spent fuel pool systems and fuel pool areas or result in reduced operating expenses should the station be placed into a SAFSTOR dormancy configuration.

Completion of the ISFSI decommissioning process is dependent upon the DOE's ability to remove spent fuel from the site. DOE's repository program assumes that spent fuel allocations will be accepted for disposal from the nation's commercial nuclear plants, with limited exceptions, in the order (the "queue") in which it was discharged from the reactor.[3] For purposes of this analysis, NextEra Energy Point Beach, LLC's (NextEra) current spent fuel management plan for the Point Beach spent fuel [4] is based in general upon: 1) a 2030 start date for DOE initiating transfer of commercial spent fuel to a federal facility (not necessarily a final repository), and 2) expectations for spent fuel receipt by the DOE for the Point Beach fuel. The DOE's generator allocation/receipt schedules are based upon the oldest fuel receiving the highest priority. Assuming a maximum rate of transfer of 3,000 metric tons of uranium/year,[5] the spent fuel is projected to be removed from the Point Beach site in 2074.

3. ISFSI Decommissioning Strategy

At the conclusion of the spent fuel transfer process the ISFSI will be promptly decommissioned (similar to the power reactor DECON alternative) by removing and disposing of residual radioactivity and verifying that remaining materials satisfy NRC release criteria.

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3 U.S. Code of Federal Regulations, Title 10, Part 961.11, Article IV – Responsibilities of the Parties, B. DOE Responsibilities, 5.(a) ... DOE shall issue an annual acceptance priority ranking for receipt of SNF and/or HLW at the DOE repository. This priority ranking shall be based on the age of SNF and/or HLW as calculated from the date of discharge of such materials from the civilian nuclear power reactor. The oldest fuel or waste will have the highest priority for acceptance, except as ..."

4 "2015 Decommissioning Cost Update of the Point Beach Nuclear Plant," prepared for NextEra Energy Point Beach, LLC by Energy*Solutions*, Document No. 164023-DCE-015, Rev 0,September 15, 2015

5 "Acceptance Priority Ranking & Annual Capacity Report," DOE/RW-0567, July 2004

For purposes of providing an estimate for a funding plan, financial assurance is expected to be provided on the basis of a prompt ISFSI decommissioning scenario. In this estimate the ISFSI decommissioning is considered an independent project, regardless of the decommissioning alternative identified for the nuclear power plant.

4. ISFSI Description

The Point Beach ISFSI is currently using a NUHOMS®-32PT dry storage system (there are also an additional 16 VSC-24 casks on site, storing 384 total assemblies). The ISFSI is operated under a general license (10 CFR Part 50).The NUHOMS® system is comprised of a DSC and a horizontal storage module (HSM). The DSCs are assumed to be transferred directly to the DOE and not returned to the station. Some of the remaining HSMs are assumed to have residual radioactivity due to some minor level of neutron-induced activation as a result of the long-term storage of the spent fuel. The cost to dispose of residual radioactivity, and verify that the remaining facility and surrounding environs meet the NRC's radiological limits established for unrestricted use, form the basis of the ISFSI decommissioning estimate.

NextEra's current spent fuel management plan for the Point Beach spent fuel would result in 69 HSMs (nominal 32 assemblies per NUHOMS® DSC) being in position on the storage pad at the site after all spent fuel has been removed from the spent fuel pool (in addition to the 16 VSCs). The irradiated fuel in the 85 dry storage systems (69 HSMs and 16 VSCs) represents 72% of the total spent fuel projected to be generated during the currently licensed operating period.

In addition to the spent fuel HSMs located on the ISFSI pad after shutdown there are projected to be additional HSMs that are expected to be used for Greater-than-Class-C (GTCC) storage. The HSMs used for the GTCC canisters (estimated quantity of 2) are not expected to have any interior contamination or residual activation and can be reused or disposed of by conventional means after a final status survey.

Table 1 provides the significant quantities and physical dimensions used as the basis in developing the ISFSI decommissioning estimate.

5. Key Assumptions / Estimating Approach

The decommissioning estimate is based on the configuration of the ISFSI expected after all spent fuel and GTCC material has been removed from the site. The configuration of the ISFSI is based on the Point Beach units operating until the end of their current licenses, October 5, 2030 and March 8, 2033, respectively, and the assumptions associated with DOE's spent fuel acceptance, as previously described.

The current size of the ISFSI pads (2 each at 195 feet long by 35 feet wide) is not sufficient to store the projected amount of spent fuel to support decommissioning. For purposes of this estimate an expansion of the current ISFSI area is assumed.

It is not expected that the HSMs will have any interior or exterior radioactive surface contamination. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Any neutron activation of the steel and concrete is expected to be extremely small. To validate this assumption, the estimate accounts for characterization of 10% of the HSMs; it is likely that some of this characterization will take place well before the last of the fuel is removed from the ISFSI in order to establish a more definitive decommissioning scope.

The decommissioning estimate is based on the premise that some of the DSC support structure within the HSMs will contain low levels of neutron-induced residual radioactivity that would necessitate remediation at the time of decommissioning. As an allowance, 8 of the 69 HSMs are assumed to be affected, i.e., contain residual radioactivity. The allowance quantity is based upon the number of DSCs required for the final core off-load (i.e., 121 offloaded assemblies per unit for 242 total, 32 assemblies per DSC) which results in a total of approximately 8 HSMs that contain residual radioactivity.

It is not expected that there will be any residual contamination left on the concrete ISFSI pad. It is expected that this assumption would be confirmed as a result of good radiological practice of surveying potentially impacted areas after each spent fuel transfer campaign. Therefore, it is assumed for this analysis that the ISFSI pad will not be contaminated. As such, only verification surveys are included for the pad in the decommissioning estimate.

NextEra has no record of onsite subsurface material associated with the ISFSI containing residual radioactivity that will require remediation to meet the criteria for license termination.

To support an application for License Termination, the estimate assumes that a Final Status Survey will be performed; this will include a 100% survey of the ISFSI pad and the immediate area surrounding the pad, and a significant fraction of the HSMs surfaces.

Decommissioning is assumed to be performed by an independent contractor. As such, essentially all labor, equipment, and material costs are based on national averages, i.e., costs from national publications such as R.S. Means' Building Construction Cost Data (adjusted for regional variations), and laboratory service costs are based on vendor price lists. NextEra, as licensee, will oversee the site activities; the estimate includes NextEra's labor and overhead costs. The licensee's costs are based upon current, average, fleet salaries and associated expenses, for selected positions.

Low-level radioactive waste transportation and disposal costs are based on rates consistent with the most recently developed decommissioning FPL cost estimates (year 2015 dollars), escalated to 2016 dollars.

Costs are reported in 2016 dollars.

Contingency has been added at an overall rate of 25%. This is consistent with the contingency evaluation criteria referenced by the NRC in NUREG-1757.[6]

The estimate is limited to costs necessary to terminate the ISFSI's NRC license and meet the §20.1402 criteria for unrestricted use. Disposition of released material and structures is outside the scope of the estimate.

6. Cost Estimate

The estimated cost to decommission the ISFSI and release the facility for unrestricted use is provided in Table 2. The cost has been organized into three phases, including:

- An initial planning phase - empty HSMs are characterized and the specifications and work procedures for the decontamination (DSC support structure removal) developed.
- The remediation phase - residual radioactivity is removed, packaged in certified waste containers, transported to the low-level waste site, and disposed of at low-level waste.
- The final phase - license termination surveys, independent surveys are completed, and an application for license termination submitted.

In addition to the direct costs associated with a contractor providing the decommissioning services, the estimate also contains costs for the NRC (and NRC contractor), NextEra's oversight staff, site security (industrial), and other site operating costs.

For estimating purposes it should be conservatively assumed that all expenditures will be incurred in the year 2075, the year following all spent fuel removal.

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6 "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," U.S. Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards, NUREG-1757, Volume 3, Revision 1, February 2012

Table 1
Significant Quantities and Physical Dimensions

ISFSI Pad

Item	Length (ft)	Width (ft)	Residual Radioactivity
VSC ISFSI Pad	195	35	No
HSM ISFSI Pads	195	35	No
HSM ISFSI Pads (future pad)	160	35	No

ISFSI Horizontal Storage Module

Item	Value	Notes (all dimensions are nominal)
Outside HSM Height (inches)	180	without vent cover
Outside HSM Length (inches)	228	without shield walls
Outside HSM Width (inches)	116	without shield walls
Quantity (total dry fuel storage systems)	87	HSMs (69), VSCs (16) GTCC (2)
Quantity (HSMs with residual radioactivity)	8	Equivalent to the number of HSMs used to store last complete core offload
HSM Internal Steel with Residual Radioactivity (pounds)	24,800	
Low-Level Radioactive Waste (cubic feet)	24,128	
Low-Level Radioactive Waste (packaged density)	119	Average weight density

Other Potentially Impacted Items

Item	Value	Notes
Number of HSMs used for GTCC storage	2	no residual radioactivity

Table 2
ISFSI Decommissioning Costs[1] and Waste Volumes

	(thousands, 2016 dollars)						Waste Volume	Person-Hours	
	Removal	Packaging	Transport	Disposal	Other	Total	Class A (cubic feet)	Craft Hours	Oversight and Contractor Hours
Decommissioning Contractor									
Planning (characterization, specs and procedures)	-	-	-	-	429	429	-	-	2,048
Remediation (activated metal removal)	61	3	664	2,798	14	3,540	24,128	361	-
License Termination (radiological surveys)	-	-	-	-	1,442	1,442	-	10,842	-
Subtotal	**61**	**3**	**664**	**2,798**	**1,886**	**5,411**	**24,128**	**11,203**	**2,048**
Supporting Costs									
NRC and NRC Contractor Fees and Costs	-	-	-	-	373	373	-	-	776
Insurance	-	-	-	-	137	137	-	-	-
Security (industrial)	-	-	-	-	261	261	-	-	5,825
Licensee Oversight Staff	-	-	-	-	303	303	-	-	4,072
Subtotal	-	-	-	-	**1,073**	**1,073**	-	-	**10,673**
Total (w/o contingency)	**61**	**3**	**664**	**2,798**	**2,959**	**6,484**	**24,128**	**11,203**	**12,721**
Total (w/25% contingency)	**76**	**4**	**830**	**3,497**	**3,699**	**8,105**			

Note 1: for funding planning purposes decommissioning costs can be assumed to be incurred in year 2075