



Crystal River Nuclear Plant
15760 W. Power Line Street
Crystal River, FL 34428
Docket 50-302
Docket 72-1035
Operating License No. DPR-72

10 CFR 50.82
10 CFR 50.75

March 28, 2017
3F0317-03

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

Subject: Crystal River Unit 3 – Annual Decommissioning and Irradiated Fuel Management
Financial Status Report for 2016

- References:
1. NRC to CR-3 letter dated March 13, 2013, “Crystal River Unit 3 Nuclear Generating Plant Certification of Permanent Cessation of Operation and Permanent Removal of Fuel From the Reactor” (ADAMS Accession No. ML13058A380)
 2. CR-3 to NRC letter dated December 2, 2013, “Crystal River Unit 3 – Post-Shutdown Decommissioning Activities Report” (ADAMS Accession No. ML13340A009)
 3. NRC to CR-3 letter dated January 26, 2015, “Crystal River Unit 3 Nuclear Generating Plant – Exemptions from the Requirements of 10 CFR Part 50, Sections 50.82(a)(8)(i)(A) and 50.75(h)(2)” (ADAMS Accession No. ML14247A545)
 4. NRC to CR-3 letter dated March 11, 2015, “Crystal River Unit 3 Nuclear Generating Plant Post-Shutdown Decommissioning Activities Report” (ADAMS Accession No. ML14321A751)
 5. NRC to CR-3 letter dated August 10, 2016, “Crystal River Unit 3 Nuclear Generating Plant - Order Approving Transfer and Conforming Amendment” (ADAMS Accession No. ML16173A019)

Dear Sir:

In accordance with 10 CFR 50.75(f)(1), 10 CFR 50.82(a)(8)(v), 10 CFR 50.82(a)(8)(vi), and 10 CFR 50.82(a)(8)(vii), Duke Energy Florida, LLC, (DEF) is submitting the annual status of decommissioning funding, status of funding for managing irradiated fuel, and the financial assurance status report for 2016. In Reference 1, the NRC acknowledged Crystal River Unit 3 Nuclear Generating Plant (CR-3) certification of permanent cessation of power operation and permanent removal of fuel from the reactor vessel. In Reference 2, DEF submitted its Post-Shutdown Decommissioning Activities Report (PSDAR) containing a site-specific Decommissioning Cost Estimate (DCE) pursuant to 10 CFR 50.82(a)(4)(i) and 10 CFR 50.82(a)(8)(iii). Accordingly, a status of decommissioning funding pursuant to 10 CFR 50.75(f)(1), a financial assurance status report pursuant to 10 CFR 50.82(a)(8)(v) and 10 CFR 50.82(a)(8)(vi), and a report on the status of the funding for managing irradiated fuel pursuant to 10 CFR 50.82(a)(8)(vii) are required to be submitted by March 31 of each year.

In Reference 3, the NRC provided its approval of the CR-3 exemption request to use the funds from the CR-3 Decommissioning Trust Funds for Irradiated Fuel Management and Site Restoration Costs. The financial assurance demonstration performed in this submittal has been prepared consistent with that exemption request. In Reference 4, the NRC found that the PSDAR contained the necessary information required by 10 CFR 50.82(a)(4)(i) and was consistent with the guidance of Regulatory Guide 1.185.

In Reference 5, the NRC approved a license transfer of the 1.6994 percent combined ownership share in CR-3 held by Seminole Electric Cooperative, Inc. co-owner to DEF. This leaves DEF as the sole owner of CR-3.

The attachments to this letter contain the information required by the above regulations for DEF. The report contains the following required information:

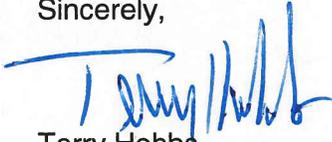
- (1) The amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c), (While DEF is identifying this amount because it is specified in 10 CFR 50.75(f)(1), it does not appear applicable to a plant that has permanently ceased operation, has submitted a site specific cost estimate, and is engaged in decommissioning).
- (2) The amount of decommissioning funds accumulated to the end of the calendar year preceding the date of this report,
- (3) A schedule of annual amounts remaining to be collected,
- (4) The assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections,
- (5) Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v),
- (6) Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report,
- (7) Any material changes to trust agreements or financial assurance contracts,
- (8) The amount spent on decommissioning, both cumulative and over the previous calendar year,
- (9) The remaining balance of any decommissioning funds,
- (10) The amount provided by other financial assurance methods being relied upon,
- (11) An estimate of the costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year,
- (12) The decommissioning criteria upon which the estimate is based,
- (13) If the sum of the balance of any remaining decommissioning funds, plus earnings on such funds calculated are not greater than a 2 percent real rate of return, together with the amount provided by other financial assurance methods being relied upon, does not cover the estimated costs to complete the decommissioning, the financial assurance status report must include additional financial assurance to cover the estimated cost of completion,
- (14) The amount of funds accumulated to cover the cost of managing the irradiated fuel,
- (15) The projected cost of managing irradiated fuel until title to the fuel and possession of the fuel is transferred to the Secretary of Energy, and
- (16) If the funds accumulated do not cover the projected cost (of irradiated fuel), a plan to obtain additional funds to cover the cost.

The adjustment factors for labor rates and energy costs used in Item (1) for the calculation in 10 CFR 50.75(c)(2) are determined using the December 2016 indices from the U.S. Department of Labor, Bureau of Labor Statistics. The adjustment factor for the cost of low-level waste burial charges used in Item (1) for the calculation in 10 CFR 50.75(c)(2) is determined using NUREG-1307, Revision 16, "Report on Waste Burial Charges."

There are no new regulatory commitments associated with this letter.

If you have any questions regarding this submittal, please contact Mr. Mark Van Sicklen, Licensing Lead, Nuclear Regulatory Affairs, at (352) 563-4795.

Sincerely,



Terry Hobbs
General Manager, Decommissioning

TDH/mvs

Attachments:

- Attachment 1 – Duke Energy Florida, Crystal River Unit 3 Funding Status Report
- Attachment 2 – Crystal River Unit 3, Estimate of Costs to Complete Decommissioning and Financial Assurance Demonstration

xc: NMSS Project Manager
Regional Administrator, Region I

DUKE ENERGY FLORIDA, LLC

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ATTACHMENT 1

**DUKE ENERGY FLORIDA,
CRYSTAL RIVER UNIT 3 FUNDING STATUS REPORT**

NRC Decommissioning Funding Status Report
Report Dated as of December 31, 2016
Duke Energy Florida
Crystal River Unit 3
100% Ownership

Item #		<u>Crystal River Unit 3</u>	
10 CFR 50.75(f)(1) - Status of decommissioning funding			
1	1a. The amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c);	\$ 451,687,566	
	1b. The amount of decommissioning funds estimated to be required for remaining License Termination costs.	\$ 821,185,432 ¹	
2	The amount of decommissioning funds accumulated to the end of the calendar year preceding the date of the report;	\$ 722,083,733 ^{2,3}	
3	A schedule of the annual amounts remaining to be collected;	None	
4	The assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections;	inflation 2.8% ⁴ qualified rate of return 5.10% ⁴	
5	Any contracts upon which the licensee is relying pursuant to paragraph 10 CFR 50.75(e)(1)(v);	None	
6	Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and	None	
7	Any material changes to trust agreements.	None	
10 CFR 50.82(a)(8)(v) - Financial assurance status report			
8	(A) The amount spent on decommissioning, both cumulative and over the previous calendar year,	\$ 23,650,676 ⁵	- Previous calendar year
		\$ 67,655,152 ⁶	- Cumulative
9	The remaining balance of any decommissioning funds, and	\$ 722,083,733 ^{2,3}	
10	The amount provided by other financial assurance methods being relied upon;	None	
11	(B) An estimate of the costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year, and	See Attachment 2	
12	The decommissioning criteria upon which the estimate is based;	Unrestricted Release	
13	(C) Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and	None	
14	(D) Any material changes to trust agreements or financial assurance contracts.	None	
10 CFR 50.82(a)(8)(vi)			
15	If the sum of the balance of any remaining decommissioning funds, plus earnings on such funds calculated at not greater than a 2 percent real rate of return, together with the amount provided by other financial assurance methods being relied upon, does not cover the estimated cost to complete the decommissioning, the financial assurance status report must include additional financial assurance to cover the estimated cost of completion.	As demonstrated in Attachment 2, funds accumulated cover estimated cost of completion.	
10 CFR 50.82(a)(8)(vii) - Report on the status of funding for managing irradiated fuel			
16	(A) The amount of funds accumulated to cover the cost of managing the irradiated fuel;	As demonstrated in Attachment 2, funds accumulated cover estimated cost of completion.	
17	(B) The projected cost of managing irradiated fuel until title to the fuel and possession of the fuel is transferred to the Secretary of Energy; and	See Attachment 2	
18	(C) If the funds accumulated do not cover the projected cost, a plan to obtain additional funds to cover the cost.	As demonstrated in Attachment 2, funds accumulated cover projected cost of managing irradiated fuel, with the noted exception of DEF's portion of ISFSI capital construction costs as described in the update to Irradiated Fuel Management Program pursuant to 10CFR50.54(bb) (ADAMS Accession No. ML13440A008).	

Attachment 1 Footnotes:

¹ Total amount of License Termination costs (Column A) in Attachment 2.

² Amount is net of 2016 tax obligations.

³ Represents (a) the full fund balance of DEF's qualified and non-qualified decommissioning funds, which, in accordance with the NRC exemption request approval (ADAMS Accession No. 14247A545), can also be used for Spent Fuel Management and Site Restoration costs, and (b) 100% of the funds held by the City of Tallahassee on behalf of DEF, which pursuant to NRC order (ADAMS Accession No. ML020670117) will only be used for NRC radiological decommissioning.

⁴ Represents values approved by the Florida Public Service Commission in Order No. PSC-14-0702-PAA-EI, issued December 22, 2014, which became effective and final pursuant to Order No. PSC-15-0067-CO-EI, issued on January 23, 2015.

⁵ Represents the amount actually disbursed from the fund in calendar year 2016 for License Termination costs, not the costs incurred in calendar year 2016. The Note applicable to Column A in Attachment 2 identifies the total amount of 2016 License Termination costs that have not been disbursed from the funds as of December 31, 2016.

⁶ Represents the cumulative amount actually disbursed from the fund as of December 31, 2016 for License Termination costs, not the cumulative costs incurred as of December 31, 2016. The Note applicable to Column A in Attachment 2 identifies the total amount of 2016 License Termination costs that have not been disbursed from the funds as of December 31, 2016.

DUKE ENERGY FLORIDA, LLC

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ATTACHMENT 2

**CRYSTAL RIVER UNIT 3,
ESTIMATE OF COSTS TO COMPLETE DECOMMISSIONING AND
FINANCIAL ASSURANCE DEMONSTRATION**

Crystal River Unit 3
Attachment 2 - Financial Assurance Demonstration
December 31, 2016

	<i>Column A</i>	<i>Column B</i>	<i>Column C</i>	<i>Column D</i>	<i>Column E</i>	<i>Column F</i>
	Annual Expenses	Annual expenses	Annual expenses	Total Expenses	Projected Earnings	End-of-year Fund Balances
	License Termination Cost (in thousands)	Spent Fuel Cost (in thousands)	Site Restoration Cost (in thousands)	Total Cost (in thousands)	Annual Earnings on Decommissioning Trust Fund at 2% (in thousands)	All Owners Decommissioning Trust Fund Year-End Balance (in thousands)
2016						722,084
2017	100,160	27,255	0	127,415	13,168	607,836
2018	7,025	37,045	0	44,070	11,716	575,482
2019	6,471	24,415	0	30,886	11,201	555,797
2020	5,607	4,755	0	10,362	11,012	556,447
2021	5,591	4,742	0	10,333	11,026	557,140
2022	5,591	4,742	0	10,333	11,039	557,846
2023	5,591	4,742	0	10,333	11,054	558,567
2024	5,607	4,755	0	10,362	11,068	559,272
2025	5,591	4,742	0	10,333	11,082	560,021
2026	5,591	4,742	0	10,333	11,097	560,785
2027	5,591	4,742	0	10,333	11,112	561,565
2028	5,607	4,755	0	10,362	11,128	562,330
2029	5,591	4,742	0	10,333	11,143	563,140
2030	5,591	4,742	0	10,333	11,159	563,967
2031	5,591	4,742	0	10,333	11,176	564,810
2032	5,607	4,755	0	10,362	11,193	565,640
2033	5,591	4,742	0	10,333	11,209	566,516
2034	5,591	4,742	0	10,333	11,227	567,410
2035	5,591	7,588	0	13,179	11,216	565,447
2036	5,607	6,890	0	12,497	11,184	564,135
2037	5,558	0	0	5,558	11,227	569,803
2038	5,558	0	0	5,558	11,340	575,585
2039	5,558	0	0	5,558	11,456	581,483
2040	5,573	0	0	5,573	11,574	587,484
2041	5,558	0	0	5,558	11,694	593,620
2042	5,558	0	0	5,558	11,817	599,878
2043	5,558	0	0	5,558	11,942	606,262
2044	5,573	0	0	5,573	12,070	612,758
2045	5,558	0	0	5,558	12,200	619,399
2046	5,558	0	0	5,558	12,332	626,173
2047	5,558	0	0	5,558	12,468	633,083
2048	5,573	0	0	5,573	12,606	640,116
2049	5,558	0	0	5,558	12,747	647,304
2050	5,558	0	0	5,558	12,890	654,636
2051	5,558	0	0	5,558	13,037	662,115
2052	5,573	0	0	5,573	13,187	669,728
2053	5,558	0	0	5,558	13,339	677,509
2054	5,558	0	0	5,558	13,495	685,445
2055	5,558	0	0	5,558	13,653	693,540
2056	5,573	0	0	5,573	13,815	701,782
2057	5,558	0	0	5,558	13,980	710,204
2058	5,558	0	0	5,558	14,148	718,794
2059	5,558	0	0	5,558	14,320	727,556
2060	5,573	0	0	5,573	14,495	736,478
2061	5,558	0	0	5,558	14,674	745,594
2062	5,558	0	0	5,558	14,856	754,892
2063	5,558	0	0	5,558	15,042	764,375
2064	5,573	0	0	5,573	15,232	774,034
2065	5,558	0	0	5,558	15,425	783,901
2066	5,558	0	0	5,558	15,622	793,965
2067	29,350	0	421	29,771	15,582	779,775
2068	66,698	0	1,360	68,058	14,915	726,632
2069	121,761	0	1,680	123,441	13,298	616,489
2070	92,562	0	1,028	93,590	11,394	534,293
2071	77,902	0	701	78,603	9,900	465,590
2072	52,165	0	273	52,438	8,787	421,939
2073	5,009	0	28,112	33,121	8,108	396,926
2074	96	0	18,654	18,750	7,751	385,927
Total ¹	\$821,185	\$174,371	\$52,230	\$1,047,787		

Footnotes next page

Attachment 2 Footnotes:

Column A - Annual Expenses - License Termination Cost - Reflects the License Termination cost portion of the Decommissioning Cost Estimate (DCE) escalated to 2016 dollars at the Consumer Price Index escalation rate of 1.7% for 2014, 0.1% for 2015 and 1.3% for 2016. The 2017 costs represent the sum of 2013 through 2017 costs from the DCE, less \$67,655,152 of License Termination costs disbursed from the funds through December 31, 2016. Outstanding License Termination costs of \$10,614,556 were not reimbursed as of December 31, 2016 due to outstanding joint owner reimbursements and November and December 2016 reimbursements. Reimbursement of these outstanding costs is expected after December 31, 2016.

Column B - Annual Expenses - Spent Fuel Management Cost - Reflects the Spent Fuel Management cost portion of the Decommissioning Cost Estimate (DCE) escalated to 2016 dollars at the Consumer Price Index escalation rate of 1.7% for 2014, 0.1% for 2015 and 1.3% for 2016. The 2017 costs represent the sum of 2013 through 2017 costs from the DCE, less \$107,852,441 of Spent Fuel Management costs disbursed from the funds through December 31, 2016. Outstanding Spent Fuel Management costs of \$8,459,278 were not reimbursed as of December 31, 2016 due to outstanding joint owner reimbursements and November and December 2016 reimbursements. Reimbursement of these outstanding costs is expected after December 31, 2016. Notwithstanding the acquisition in 2015 and 2016 by DEF of co-owner ownership interests, the 2016 through 2018 costs continue to include ISFSI capital construction costs for the ownership interests of all co-owners (8.2194%) as of the submittal date of the Update to Irradiated Fuel Management Program pursuant to 10 CFR 50.54(bb) (ADAMS Accession No. ML13340A008). DEF will continue to fund the ISFSI capital construction costs for its ownership interest (91.7806%) as of the submittal date of the Update to Irradiated Fuel Management Program pursuant to 10 CFR 50.54(bb) (ADAMS Accession No. ML13340A008) in accordance therewith. Current projected ISFSI capital construction costs are now estimated to be \$102M through 2018. Accordingly, these costs associated with the ownership interests of all co-owners (8.2194%) are included in the table above.

Column C - Annual Expenses - Site Restoration Cost - Reflects the Site Restoration cost portion of the Decommissioning Cost Estimate (DCE) escalated to 2016 dollars at the Consumer Price Index escalation rate of 1.7% for 2014, 0.1% for 2015 and 1.3% for 2016. Site Restoration costs of \$7,494,563 were incurred in 2013 through 2016, of which \$7,357,059 has been reimbursed as of December 31, 2016. Reimbursement of the outstanding costs is expected after December 31, 2016. \$2,139,772 of the reimbursed amount was related to Site Restoration costs contemplated in the DCE for the year 2074 and was therefore deducted from the 2074 costs in the table above.

Column D - Annual Expenses - Total Cost - Reflects the sum of the License Termination, Spent Fuel Management and Site Restoration costs.

Column E - Projected Earnings - Reflects earnings on funds remaining in the trusts. Pursuant to 10 CFR 50.82(a)(8)(vi), a 2% real rate of return is used in this financial analysis. The earnings are calculated on the previous year's end-of-year fund balance (Column F) less 50% of the given year's annual expenses.

Column F - End-of-year Fund Balances - Reflects the end-of-year fund balance of all funds after all projected earnings are added and projected expenditures are deducted. The 2016 end-of-year fund balance includes 100% of \$6,891,614 in funds held by the City of Tallahassee on behalf of Duke Energy Florida, which pursuant to NRC order (ADAMS Accession No. ML020670117) will only be used for NRC radiological decommissioning.

For the purposes of demonstrating financial assurance in accordance with 10 CFR 50.82(a)(8)(vi), the methodology and assumptions in this analysis are consistent with the March 28, 2014, Request for Exemption from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(2) (ADAMS Accession No. ML14098A037), which was approved by NRC on January 26, 2015 (ADAMS Accession No. ML14247A545).

¹ Total may not add due to rounding.