



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 26, 2018
3F0318-01

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 2017

- 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 2017. 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 2017 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) 501-3045.

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

DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72

ATTACHMENT 1

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

NRC Decommissioning Funding Status Report
Report Dated as of December 31, 2017
Duke Energy Florida
Crystal River Unit 3
100% Ownership

Item #	Crystal River Unit 3
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);
	\$ 460,871,428
	1b. The amount of decommissioning funds estimated to be required for remaining License Termination costs.
	\$ 828,750,155 ¹
2	The amount of decommissioning funds accumulated to the end of the calendar year preceding the date of the report;
	\$ 742,895,306 ^{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,
	\$ 11,100,929 ⁵ - Previous calendar year
	\$ 78,756,081 ⁶ - Cumulative
9	The remaining balance of any decommissioning funds, and
	\$ 742,895,306 ^{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 2017 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 2017 for License Termination costs, not the costs incurred in calendar year 2017. The Note applicable to Column A in Attachment 2 identifies the total amount of 2017 License Termination costs that have not been disbursed from the funds as of December 31, 2017.

6 Represents the cumulative amount actually disbursed from the fund as of December 31, 2017 for License Termination costs, not the cumulative costs incurred as of December 31, 2017. The Note applicable to Column A in Attachment 2 identifies the total amount of 2017 License Termination costs that have not been disbursed from the funds as of December 31, 2017.

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, 2017

	Column A	Column B	Column C	Column D	Column E	Column F
	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)
2017			0	0		742,895
2018	99,756	17,655	0	117,411	13,684	639,168
2019	6,607	24,928	0	31,535	12,468	620,102
2020	5,725	4,855	0	10,580	12,296	621,818
2021	5,709	4,841	0	10,550	12,331	623,599
2022	5,709	4,841	0	10,550	12,366	625,415
2023	5,709	4,841	0	10,550	12,403	627,268
2024	5,725	4,855	0	10,580	12,440	629,128
2025	5,709	4,841	0	10,550	12,477	631,055
2026	5,709	4,841	0	10,550	12,516	633,020
2027	5,709	4,841	0	10,550	12,555	635,025
2028	5,725	4,855	0	10,580	12,595	637,040
2029	5,709	4,841	0	10,550	12,635	639,125
2030	5,709	4,841	0	10,550	12,677	641,252
2031	5,709	4,841	0	10,550	12,720	643,422
2032	5,725	4,855	0	10,580	12,763	645,605
2033	5,709	4,841	0	10,550	12,807	647,861
2034	5,709	4,841	0	10,550	12,852	650,163
2035	5,709	7,747	0	13,456	12,869	649,575
2036	5,725	7,034	0	12,759	12,864	649,680
2037	5,675	0	0	5,675	12,937	656,942
2038	5,675	0	0	5,675	13,082	664,349
2039	5,675	0	0	5,675	13,230	671,904
2040	5,690	0	0	5,690	13,381	679,595
2041	5,675	0	0	5,675	13,535	687,455
2042	5,675	0	0	5,675	13,692	695,472
2043	5,675	0	0	5,675	13,853	703,650
2044	5,690	0	0	5,690	14,016	711,976
2045	5,675	0	0	5,675	14,183	720,483
2046	5,675	0	0	5,675	14,353	729,161
2047	5,675	0	0	5,675	14,526	738,012
2048	5,690	0	0	5,690	14,703	747,026
2049	5,675	0	0	5,675	14,884	756,234
2050	5,675	0	0	5,675	15,068	765,627
2051	5,675	0	0	5,675	15,256	775,208
2052	5,690	0	0	5,690	15,447	784,965
2053	5,675	0	0	5,675	15,643	794,933
2054	5,675	0	0	5,675	15,842	805,099
2055	5,675	0	0	5,675	16,045	815,469
2056	5,690	0	0	5,690	16,252	826,032
2057	5,675	0	0	5,675	16,464	836,821
2058	5,675	0	0	5,675	16,680	847,825
2059	5,675	0	0	5,675	16,900	859,050
2060	5,690	0	0	5,690	17,124	870,484
2061	5,675	0	0	5,675	17,353	882,162
2062	5,675	0	0	5,675	17,586	894,073
2063	5,675	0	0	5,675	17,825	906,222
2064	5,690	0	0	5,690	18,068	918,600
2065	5,675	0	0	5,675	18,315	931,240
2066	5,675	0	0	5,675	18,568	944,133
2067	29,967	0	430	30,396	18,579	932,315
2068	68,099	0	1,389	69,488	17,951	880,779
2069	124,318	0	1,715	126,033	16,355	771,101
2070	94,506	0	1,050	95,556	14,466	690,012
2071	79,538	0	716	80,254	12,998	622,756
2072	53,260	0	279	53,539	11,920	581,137
2073	5,114	0	28,702	33,816	11,285	558,605
2074	98	0	21,231	21,329	10,959	548,235
Total ¹	\$828,750	\$130,038	\$55,511	\$1,014,300		

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 2017 dollars at the Consumer Price Index escalation rate of 1.7% for 2014, 0.1% for 2015, 1.3% for 2016, and 2.1% for 2017. The 2018 costs represent the sum of 2013 through 2018 costs from the DCE, less \$78,756,081 of License Termination costs disbursed from the funds through December 31, 2017. Outstanding License Termination costs of \$4,794,531 were not reimbursed as of December 31, 2017 due to outstanding November and December 2017 reimbursements and outstanding City of Tallahassee reimbursement. Reimbursement of these outstanding costs is expected after December 31, 2017.

Column B - Annual Expenses - Spent Fuel Management Cost - Reflects the Spent Fuel Management cost portion of the Decommissioning Cost Estimate (DCE) escalated to 2017 dollars at the Consumer Price Index escalation rate of 1.7% for 2014, 0.1% for 2015, 1.3% for 2016, and 2.1% for 2017. The 2018 costs represent the sum of 2013 through 2018 costs from the DCE, less \$156,395,199 of Spent Fuel Management costs disbursed from the funds through December 31, 2017. Outstanding Spent Fuel Management costs of \$9,958,895 were not reimbursed as of December 31, 2017 due to outstanding November and December 2017 reimbursements. Reimbursement of these outstanding costs is expected after December 31, 2017. 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 \$83.7M 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 2017 dollars at the Consumer Price Index escalation rate of 1.7% for 2014, 0.1% for 2015, 1.3% for 2016, and 2.1% for 2017. Site Restoration costs of \$7,936,042 were incurred in 2013 through 2017, of which \$7,891,748 has been reimbursed as of December 31, 2017. Reimbursement of the outstanding costs is expected after December 31, 2017.

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 2017 end-of-year fund balance includes 100% of \$6,975,535 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.