

**NUCLEAR DECOMMISSIONING FUNDING ASSURANCE STATUS
REPORTS SUBMITTED PURSUANT TO SECTION 8-508.1(g) OF THE
ILLINOIS PUBLIC UTILITIES ACT**



ILLINOIS COMMERCE COMMISSION

May 25, 2022



STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

527 East Capitol Avenue
Springfield, Illinois 62701

160 North LaSalle
Chicago, Illinois 60601

May 25, 2022

The Honorable Members of the Illinois General Assembly
State Capitol
Springfield, Illinois

Dear Honorable Members of the Illinois General Assembly:

The Illinois Commerce Commission submits the attached report to the General Assembly in accordance with 220 ILCS Section 8-508.1(g) of the Illinois Public Utilities Act. Beginning June 1, 2020, and every 2 years thereafter, the Commission shall provide the General Assembly with a copy of the nuclear decommissioning funding assurance status report for shutdown units as submitted by the owner or operator of a nuclear power plant in this State to the Nuclear Regulatory Commission and, as applicable, to the Federal Energy Regulatory Commission.

Should you have questions regarding the attached report, please contact Sarah Ryan, Director of Governmental Affairs, at (312) 965-5454, or by email at sarah.ryan@illinois.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Carrie Zalewski".

Carrie Zalewski
Chairman

The 101st General Assembly passed Public Act (“PA”) 101-44 amending Section 8-508.1 of Public Utilities Act (“PUA”). PA 101-44 became effective January 1, 2020. PA 101-44 adds a new subsection to Section 8-508.1, subsection (g), which states:

(g) Beginning on or before May 1, 2020, and every 2 years thereafter, the owner or operator of each nuclear power plant in this State shall provide the Commission with a copy of the nuclear decommissioning funding assurance status report submitted to the Nuclear Regulatory Commission and, as applicable, to the Federal Energy Regulatory Commission. Beginning June 1, 2020, and every 2 years thereafter, the Commission shall provide the General Assembly with a copy of the nuclear decommissioning funding assurance status report for shutdown units as submitted by the owner or operator of a nuclear power plant in this State to the Nuclear Regulatory Commission and, as applicable, to the Federal Energy Regulatory Commission.

220 ILCS 5/8-508.1(g)

In response to the requirement of Section 8-508.1, the Commission received two nuclear decommissioning funding assurance status reports for shut down units.

Constellation Energy Generation, LLC (“Constellation”) submitted a report dated March 23, 2022 providing decommissioning funding information applicable with respect to the Dresden Nuclear Power Station Unit 1, which has been shut down since October 31, 1978. This report is attached herein.

Zion Solutions, LLC (“Zion Solutions”) submitted a report dated March 28, 2022 providing decommissioning funding information applicable with respect to Zion Nuclear Power Station Units 1 and 2, which has been shut down since February 13, 1998. This report is attached herein.

As noted above, and pursuant to Section 8-508.1(g) of the PUA, the nuclear decommissioning funding assurance status reports for shut down units received by the Commission are being transmitted with this report to the General Assembly.



Constellation

4300 Winfield Road
Warrenville, IL 60555
630 657 2000 Office

RS-22-042
March 23, 2022

10 CFR 50.75(f)
10 CFR 50.82(a)

DF #31

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

Dresden Nuclear Power Station, Unit 1
Facility Operating License No. DPR-2
NRC Docket Nos. 50-10

Peach Bottom Atomic Power Station, Unit 1
Facility Operating License No. DPR-12
NRC Docket Nos. 50-171

Three Mile Island Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: Report on Status of Decommissioning Funding for Shutdown Reactors

In accordance with 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning," paragraph (f), and 10 CFR 50.82, "Termination of license," paragraphs (a)(8)(v) and (a)(8)(vii), Constellation Energy Generation, LLC (CEG) is submitting a report on the status of decommissioning funding as of December 31, 2021, for the reactors owned by CEG that are shutdown.

CEG currently maintains three shutdown units, Dresden Nuclear Power Station (Dresden), Unit 1, Peach Bottom Atomic Power Station (Peach Bottom), Unit 1, and Three Mile Island Nuclear Station (TMI), Unit 1. The annual radiological decommissioning funding status report for Dresden, Unit 1, is provided in Attachment 2. The annual radiological decommissioning funding status report for Peach Bottom, Unit 1, is provided in Attachment 3. The annual radiological decommissioning funding status report for TMI, Unit 1, is provided in Attachment 4.

Attachment 1 contains the Labor, Energy, and Burial factors used in the calculation of the formula cost amounts in this letter.

CEG has prepared site-specific decommissioning cost estimates for Dresden, Unit 1, Peach Bottom, Unit 1, and TMI, Unit 1, as required, in accordance with 10 CFR 50.75(f) and 10 CFR 50.82, paragraphs (a)(4)(i), (a)(8)(iii), and (a)(8)(v)(B). Accordingly, the amount of decommissioning funds estimated to be required is based on site-specific decommissioning cost estimates for Dresden, Unit 1, Peach Bottom, Unit 1, and TMI, Unit 1. Unless otherwise noted, the specific cash flow analysis for the site-specific decommissioning cost estimates conservatively assumes all expenses in a year are incurred at the beginning of year

(i.e., beginning of year convention) during the decommissioning period. The cash flow analysis for Peach Bottom, Unit 1, assumes that half of the current year contributions to the Peach Bottom, Unit 1, trust fund is included in the current year earnings to estimate the amount of contributions throughout the year (i.e., a mid-year convention). CEG uses a mid-year convention in this instance because contributions to the Peach Bottom, Unit 1, trust fund are made monthly at a constant rate throughout the year. Site-specific cash flows from the site-specific cost estimates for Dresden, Unit 1, Peach Bottom, Unit 1, and TMI, Unit 1, are included in Attachments 2, 3, and 4, respectively.

CEG has not made a final determination of the decommissioning approach for any of its nuclear units, including the shutdown units. For these shutdown units, CEG uses the site-specific decommissioning cost estimates to demonstrate adequacy of funding to meet regulatory requirements. While the site-specific cost estimates assume a decommissioning option, CEG may select a different decommissioning option in the future for any of its shutdown nuclear units, recognizing that the chosen approach must meet NRC requirements for decommissioning funding.

The decommissioning funding status reports provided in Attachments 2 and 4 confirm that adequate decommissioning funding is assured for Dresden, Unit 1, and TMI, Unit 1.

Due to recent market performance, Peach Bottom, Unit 1, did not meet the minimum funding assurance criteria under 10 CFR 50.75 and 10 CFR 50.82 as of December 31, 2021, based solely on the trust fund balance. Financial assurance for decommissioning this reactor is provided by the external sinking fund method, coupled with an external trust fund, in accordance with 10 CFR 50.75(e)(1)(ii). The source of revenue for the external sinking fund is a "non-bypassable charge" approved by the Pennsylvania Public Utilities Commission (PaPUC) authorizing PECO Energy Company to continue to collect decommissioning funds for CEG. The amount to be collected will be adjusted, as necessary, in accordance with the applicable tariff in the next submission to the PaPUC of the Nuclear Decommissioning Cost Adjustment (NDCA) to cover any funding shortfall that exists at that time. This cost adjustment is made every five years pursuant to PaPUC Electric Tariff No. 4. The next rate adjustment will be effective January 1, 2023. The PaPUC will be notified by April 15, 2022, that the amount collected will need to be increased. CEG's ability to adjust the amount collected for Peach Bottom, Unit 1, is consistent with the guidance in Regulatory Guide 1.159, "Assuring Availability of Funds for Decommissioning Nuclear Reactors," Revision 2, page 13, which provides that, "Adjustments to the annual amount of funds being set aside may be made to coincide with rate cases considered by a licensee's public utility commission (PUC)."


Disbursements made through December 31, 2021, from the decommissioning trust funds since the last report, other than those for allowed administrative costs and other incidental expenses of the fund in connection with the operation of the fund per 10 CFR 50.75(h)(1)(iv), were for decommissioning activities as outlined in Attachments 2, 3, and 4.

March 23, 2022
U.S. Nuclear Regulatory Commission
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There are no regulatory commitments contained within this letter.

If you have any questions concerning this letter, please contact me at (630) 657-2823.

Respectfully,



Patrick R. Simpson
Sr. Manager Licensing
Constellation Energy Generation, LLC

Attachments:

1. Labor, Energy, and Burial Factors Used in Calculations (All Facilities)
2. Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management Report for Dresden Nuclear Power Station, Unit 1
3. Annual Radiological Decommissioning Funding Assurance Report for Peach Bottom Atomic Power Station, Unit 1
4. Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management Report for Three Mile Island Nuclear Station, Unit 1

cc: Regional Administrator – NRC Region I
Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Dresden Nuclear Power Station
NRC Senior Resident Inspector – Peach Bottom Atomic Power Station
NRC Senior Resident Inspector – Three Mile Island Nuclear Station

ATTACHMENT 1

Labor, Energy, and Burial Factors Used in Calculations (All Facilities)

ATTACHMENT 1
Labor, Energy, and Burial Factors Used in Calculations (All Facilities)

The labor, energy, and burial indexes used are consistent with those described in NUREG-1307, Revision 18, "Report on Waste Burial Charges," issued January 2021.

The current labor cost indexes used are obtained from the Employment Cost Index, published by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). Specifically, Constellation Energy Generation, LLC (CEG) used the Employment Cost Index for total compensation for private industry workers by region. The labor adjustment factors were calculated according to Section 3.2 of NUREG-1307, Revision 18, using fourth quarter 2021 data. Table 1 shows the data used for this calculation.

Table 1: Labor Adjustment Factors

Region	Applicable Sites	Series ID	4Q2021 Index Number	Base L _x	Labor Adjustment Factor (L _x)
Northeast	TMI	CIU2010000000210I	149.6	2.16	3.231
Midwest	Dresden	CIU2010000000230I	145.5	2.08	3.026

The current energy cost indexes used are obtained from Producer Price Indexes (PPI) – Commodities, published by the U.S. Department of Labor, BLS. Specifically, CEG used the PPI for industrial electric power (WPU0543) and light fuel oils (WPU0573). The energy adjustment factors were calculated according to Section 3.3 of NUREG-1307, Revision 18, using December 2021 data. Table 2 shows the data used for this calculation.

Table 2: Energy Adjustment Factors

WPU0543 – January 1986 (base value)	114.2
WPU0573 – January 1986 (base value)	82.0
WPU0543 – December 2021 (preliminary value)	252.4
WPU0573 – December 2021 (preliminary value)	324.1
Industrial electric power adjustment factor - P _x	2.210
Light fuel oil adjustment factor - F _x	3.952
Energy Adjustment Factor (PWR) – E _x (PWR)	2.942
Energy Adjustment Factor (BWR) – E _x (BWR)	3.012

ATTACHMENT 1
Labor, Energy, and Burial Factors Used in Calculations (All Facilities)

The waste burial adjustment factors used are taken from Table 2-1 of NUREG-1307, Revision 18, based on 2020 data. The adjustment factors CEG used assume a combination of compact-affiliated and non-compact facilities for sites affiliated with a compact. This is consistent with current waste disposal practices at CEG and consistent with typical waste disposal practices during decommissioning. For sites not affiliated with a compact, the values for generators located in unaffiliated states were used. Table 3 summarizes the data used for the calculation of the waste adjustment factors.

Table 3: Waste Adjustment Factors

LLW Burial Site	Reactor Type	Applicable Site	Combination of Compact-Affiliated and Non-Compact Facilities Waste Adjustment Factor (B_x)	Generators Located in the Unaffiliated States and those Located in Compact-Affiliated States having no Disposal Facility Waste Adjustment Factor (B_x)
Generic LLW Disposal Site	BWR	Dresden	N/A	12.837
Generic LLW Disposal Site	PWR	TMI	N/A	12.793

The calculation methodology used for all adjustment factors is consistent with NUREG-1307, Revision 18.

ATTACHMENT 2

**Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management
Report for Dresden Nuclear Power Station, Unit 1**

ATTACHMENT 2
Annual Radiological Decommissioning Funding Assurance and Spent Fuel
Management Report for Dresden Nuclear Power Station, Unit 1
(December 31, 2021 dollars, thousands)

1	Formula cost amount per 10 CFR 50.75(c)	N/A (a)
2	Site-specific cost amount per 10 CFR 50.75(b)(4) and 50.75(f)	\$325,476 (a)
3	Site-specific cost amount per 10 CFR 72.30(b)	N/A (b)
4	The amount of decommissioning trust funds accumulated as of December 31, 2021	\$467,203 (c)
5	Schedule of the annual amounts remaining to be collected	\$0
6	Assumptions used regarding rates of escalation for decommissioning costs, earnings on funds, and other factors used in funding projections	2% (d)
7	There are no contracts relied upon pursuant to 10 CFR 50.75(e)(1)(v)	
8	Financial assurance for decommissioning is provided by the prepayment method, coupled with an external trust fund, in accordance with 10 CFR 50.75(e)(1)(i)	
9	No changes to the trust fund agreements since the last report.	
10	2021 annual amount spent on decommissioning in accordance with 10 CFR 50.82(a)(8)(v)(A)	\$1,315 (e)
11	Cumulative amount spent on decommissioning in accordance with 10 CFR 50.82(a)(8)(v)(A)	\$132,209 (f)
	Reimbursed from the decommissioning trust fund	\$130,894 (f)
	Not yet reimbursed from the decommissioning trust fund	\$1,315
12	Amount of funds accumulated to cover the cost of managing irradiated fuel pursuant to 10 CFR 50.82(a)(8)(vii)(A) as of December 31, 2021	\$47,281 (g)
13	Projected cost of managing irradiated fuel based on site-specific estimate per 10 CFR 50.82(a)(8)(vii)(B)	\$32,731(a)

ATTACHMENT 2
Annual Radiological Decommissioning Funding Assurance and Spent Fuel
Management Report for Dresden Nuclear Power Station, Unit 1
(December 31, 2021 dollars, thousands)

- (a) A formula cost amount using the formula in 10 CFR 50.75(c) is not applicable because Dresden, Unit 1, has been shutdown since October 31, 1978, and some decommissioning activities have already occurred on this unit. However, the amount to decommission Dresden, Unit 1, was calculated pursuant to 10 CFR 50.75(c) to be \$595.0 million (as of December 31, 2021). Dresden, Unit 1, was a BWR reactor that operated at a maximum power level of 700 MWt (< 1200 MWt as specified in 10 CFR 50.75(c)). This amount assumes Dresden, Unit 1, was a BWR reactor type rated at a power capacity of 1200 MWt as required by the formula in 10 CFR 50.75(c). The calculation of this value assumes the labor, energy, and burial factors described in Attachment 1 and does not account for decommissioning activities that have occurred for Dresden, Unit 1.

In accordance with the regulatory requirements, the site-specific amount is reported per 10 CFR 50.75(b)(4), 50.75(f), 50.82(a)(8)(iii), and 50.82(a)(8)(v)(B) and assumes a DECON scenario as described in the site-specific cost estimate (SSCE) (DECOM-2020-EST-DRE1, Revision 2, "Decommissioning Cost Analysis Report Dresden Nuclear Power Station Unit 1"). The decommissioning cost estimate has been adjusted consistent with the description of planned decommissioning activities in the Dresden Nuclear Power Station, Unit 1, Post-Shutdown Decommissioning Activities Report (PSDAR), as most recently updated in a letter from Michael P. Gallagher to U.S. Nuclear Regulatory Commission dated March 19, 2018. The costs have been escalated from the 2020 dollars reflected in the 2020 decommissioning cost estimate to estimated costs as of December 31, 2021.

Decommissioning expenditures prior to the year the SSCE updates were prepared (historical expenditures) are not included in the estimated total cost of decommissioning in the final SSCE reports. Also, the amount reported does not include cash flows from the SSCE estimate for the 2020 through 2021 annual radiological costs because CEG considers the SSCE estimated costs for 2020 through 2021 decommissioning activities to be historical expenditures at the time the 2022 decommissioning funding assurance report is generated.

Decontamination and dismantlement of Dresden Nuclear Power Station, Unit 1, will take place no earlier than 2029, coinciding with the decommissioning of Dresden Nuclear Power Station, Unit 2.

- (b) Per 10 CFR 72.30(c) ISFSI decommissioning cost is required to be reported every three years. Dresden Nuclear Power Station, Unit 1 ISFSI was last reported in 2021 (ML21055A776) and will be included in a future report in compliance with the regulation.

ATTACHMENT 2
Annual Radiological Decommissioning Funding Assurance and Spent Fuel
Management Report for Dresden Nuclear Power Station, Unit 1
(December 31, 2021 dollars, thousands)

- (c) The trust fund amount is the amount allocated for radiological decommissioning only. The allocation of funds for radiological decommissioning is based on the fraction of radiological decommissioning costs to radiological decommissioning costs plus spent fuel management costs identified in the DECON scenario as described in the site-specific cost estimate (SSCE) (DECOM-2020-EST-DRE1, Revision 2, "Decommissioning Cost Analysis Report Dresden Nuclear Power Station Unit 1") This allocation is for purposes of demonstrating adequate decommissioning funding assurance only and is adjusted, as necessary, to provide adequate funding assurance for radiological decommissioning and spent fuel management. No spent fuel management costs are planned to be incurred until 2029.

There are no past-due tax payments owed on the decommissioning trust fund activities as of December 31, 2021. Periodic payments of estimated income taxes are made by CEG during the year on a quarterly basis. CEG then obtains reimbursement from the trust funds. The reported trust fund amounts comply with the reporting requirements of 10 CFR 50.75(f) in that the amount of funds reported are those that were accumulated as of December 31, 2021.

- (d) A 2% annual real rate of return is used as allowed by 10 CFR 50.75(e)(1)(i).
- (e) The amount spent on decommissioning in 2021 is consistent with the projected 2021 expense total of \$2,707 (December 31, 2021 thousands of dollars) from the site-specific cost estimate. The delta of \$1,392 can be attributed to lower dormancy costs in 2021 than projected in the site specific cost estimate.

The amount spent on decommissioning in 2021 represents the 2021 charges to the Dresden, Unit 1, project. Prior to reimbursement from the decommissioning trust fund, these charges will be validated to confirm they are legitimate decommissioning expenses. Consequently, the amount reimbursed may differ from the value provided.

- (f) Not all historical data is available, and therefore, the cumulative amount spent on decommissioning and the amount reimbursed are estimates based on the best information obtainable at this time.
- (g) The allocation of funds accumulated for managing irradiated fuel is based on the fraction of spent fuel management costs to radiological decommissioning costs plus spent fuel management costs identified in the DECON scenario as described in the site-specific cost estimate (SSCE) (DECOM-2020-EST-DRE1, Revision 2, "Decommissioning Cost Analysis Report Dresden Nuclear Power Station Unit 1") This allocation is for purposes of demonstrating adequate decommissioning funding assurance only and is adjusted, as necessary, to provide adequate funding assurance for radiological decommissioning and spent fuel management. No spent fuel management costs are planned to be incurred until 2029.

ATTACHMENT 2
Annual Radiological Decommissioning Funding Assurance and Spent Fuel
Management Report for Dresden Nuclear Power Station, Unit 1
(December 31, 2021 dollars, thousands)

Year	Radiological Decommissioning Cost	BOY Trust Fund Value	BOY Trust Fund Value Less Cost	Trust Fund Earnings	EOY Trust Fund Value
2022	\$2,792	\$467,203	\$464,411	\$9,288	\$473,699
2023	\$2,792	\$473,699	\$470,908	\$9,418	\$480,326
2024	\$2,799	\$480,326	\$477,527	\$9,551	\$487,078
2025	\$2,792	\$487,078	\$484,286	\$9,686	\$493,972
2026	\$2,792	\$493,972	\$491,180	\$9,824	\$501,004
2027	\$2,792	\$501,004	\$498,212	\$9,964	\$508,176
2028	\$2,792	\$508,176	\$505,385	\$10,108	\$515,493
2029	\$38,761	\$515,493	\$476,731	\$9,535	\$486,266
2030	\$52,417	\$486,266	\$433,849	\$8,677	\$442,526
2031	\$49,441	\$442,526	\$393,085	\$7,862	\$400,947
2032	\$47,280	\$400,947	\$353,667	\$7,073	\$360,741
2033	\$43,736	\$360,741	\$317,004	\$6,340	\$323,344
2034	\$43,601	\$323,344	\$279,744	\$5,595	\$285,338
2035	\$20,005	\$285,338	\$265,334	\$5,307	\$270,641
2036	\$790	\$270,641	\$269,851	\$5,397	\$275,248
2037	\$0	\$275,248	\$275,248	\$5,505	\$280,753
2038	\$0	\$280,753	\$280,753	\$5,615	\$286,368
2039	\$0	\$286,368	\$286,368	\$5,727	\$292,095
2040	\$0	\$292,095	\$292,095	\$5,842	\$297,937
2041	\$0	\$297,937	\$297,937	\$5,959	\$303,896
2042	\$0	\$303,896	\$303,896	\$6,078	\$309,974
2043	\$0	\$309,974	\$309,974	\$6,199	\$316,174
2044	\$0	\$316,174	\$316,174	\$6,323	\$322,497
2045	\$1,420	\$322,497	\$321,077	\$6,422	\$327,498
2046	\$1,698	\$327,498	\$325,800	\$6,516	\$332,316
2047	\$1,694	\$332,316	\$330,622	\$6,612	\$337,235
2048	\$1,694	\$337,235	\$335,541	\$6,711	\$342,251
2049	\$1,694	\$342,251	\$340,558	\$6,811	\$347,369
2050	\$1,698	\$347,369	\$345,671	\$6,913	\$352,584
Total*	\$325,476				

*Column may not add due to rounding

ATTACHMENT 2
Annual Radiological Decommissioning Funding Assurance and Spent Fuel
Management Report for Dresden Nuclear Power Station, Unit 1
(December 31, 2021 dollars, thousands)

Year	Irradiated Fuel Cost	BOY Irradiated Fuel Trust Fund Value	BOY Irradiated Fuel Trust Fund Less Cost	Irradiated Fuel Trust Fund Earnings	EOY Irradiated Fuel Trust Fund Value
2022	\$0	\$47,281	\$47,281	\$946	\$48,227
2023	\$0	\$48,227	\$48,227	\$965	\$49,191
2024	\$0	\$49,191	\$49,191	\$984	\$50,175
2025	\$0	\$50,175	\$50,175	\$1,004	\$51,179
2026	\$0	\$51,179	\$51,179	\$1,024	\$52,202
2027	\$0	\$52,202	\$52,202	\$1,044	\$53,246
2028	\$0	\$53,246	\$53,246	\$1,065	\$54,311
2029	\$866	\$54,311	\$53,445	\$1,069	\$54,514
2030	\$869	\$54,514	\$53,645	\$1,073	\$54,718
2031	\$866	\$54,718	\$53,852	\$1,077	\$54,929
2032	\$866	\$54,929	\$54,064	\$1,081	\$55,145
2033	\$866	\$55,145	\$54,279	\$1,086	\$55,365
2034	\$869	\$55,365	\$54,496	\$1,090	\$55,586
2035	\$866	\$55,586	\$54,720	\$1,094	\$55,814
2036	\$1,511	\$55,814	\$54,303	\$1,086	\$55,389
2037	\$1,583	\$55,389	\$53,806	\$1,076	\$54,882
2038	\$1,594	\$54,882	\$53,289	\$1,066	\$54,354
2039	\$1,599	\$54,354	\$52,755	\$1,055	\$53,811
2040	\$1,599	\$53,811	\$52,212	\$1,044	\$53,256
2041	\$1,599	\$53,256	\$51,657	\$1,033	\$52,690
2042	\$1,603	\$52,690	\$51,087	\$1,022	\$52,109
2043	\$1,599	\$52,109	\$50,510	\$1,010	\$51,520
2044	\$1,599	\$51,520	\$49,921	\$998	\$50,920
2045	\$1,998	\$50,920	\$48,922	\$978	\$49,900
2046	\$2,079	\$49,900	\$47,821	\$956	\$48,777
2047	\$2,074	\$48,777	\$46,703	\$934	\$47,637
2048	\$2,074	\$47,637	\$45,563	\$911	\$46,474
2049	\$2,074	\$46,474	\$44,400	\$888	\$45,288
2050	\$2,079	\$45,288	\$43,209	\$864	\$44,073
Total*	\$32,731				

*Column may not add due to rounding

ATTACHMENT 3

**Annual Radiological Decommissioning Funding Assurance Report
for Peach Bottom Atomic Power Station, Unit 1**

ATTACHMENT 3
Annual Radiological Decommissioning Funding Assurance Report for
Peach Bottom Atomic Power Station, Unit 1
(December 31, 2021 dollars, thousands)

1	Formula cost amount per 10 CFR 50.75(c)	N/A (a)
2	Site-specific cost amount per 10 CFR 50.75(b)(4) and 50.75(f)	\$261,535 (a)
3	Site-specific cost amount per 10 CFR 72.30(b)	N/A (g)
4	The amount of decommissioning trust funds accumulated as of December 31, 2021	\$159,188 (b)
5	Schedule of the annual amounts remaining to be collected.	\$3,860 (c)
6	Assumptions used regarding rates of escalation for decommissioning costs, earnings on funds, and other factors used in funding projections	3% (d)
7	There are no contracts relied upon pursuant to 10 CFR 50.75(e)(1)(v).	
8	Financial assurance for decommissioning is provided by the external sinking fund method, coupled with an external trust fund, in accordance with 10 CFR 50.75(e)(1)(ii).	
9	No changes to the trust fund agreements since the last report.	
10	2021 annual amount spent on decommissioning in accordance with 10 CFR 50.82(a)(8)(v)(A).	\$1,797 (e)
11	Cumulative amount spent on decommissioning in accordance with 10 CFR 50.82(a)(8)(v)(A).	\$15,387 (f)
	Reimbursed from the decommissioning trust fund	\$13,590 (f)
	Not yet reimbursed from the decommissioning trust fund	\$1,797
12	Amount of funds accumulated to cover the cost of managing irradiated fuel pursuant to 10 CFR 50.82(a)(8)(vii)(A) as of December 31, 2021.	N/A (g)
13	Projected cost of managing irradiated fuel based on site-specific estimate per 10 CFR 50.82(a)(8)(vii)(B).	N/A (g)

ATTACHMENT 3
Annual Radiological Decommissioning Funding Assurance Report for
Peach Bottom Atomic Power Station, Unit 1
(December 31, 2021 dollars, thousands)

- (a) A formula cost amount using the formula in 10 CFR 50.75(c) is not applicable because Peach Bottom, Unit 1, has been shutdown since October 31, 1974, and some decommissioning activities have already occurred on this unit. Furthermore, Peach Bottom, Unit 1, was a High Temperature Gas Cooled Reactor (HTGR), which does not translate to a BWR or PWR as specified in the formula for calculating the formula cost amount, and hence a formula cost amount per 10 CFR 50.75(c) cannot be calculated for Peach Bottom, Unit 1.

In accordance with the regulatory requirements, the site-specific amount is reported per 10 CFR 50.75(b)(4), 50.75(f), 50.82(a)(8)(iii), and 50.82(a)(8)(v)(B) and assumes a DECON scenario as described in the site-specific cost estimate (SSCE) (DECOM-2020-DCE-PEA1, Revision 0-2034-LT, "Decommissioning Cost Analysis for the Peach Bottom Atomic Power Station Unit 1"). The decommissioning cost estimate has been adjusted consistent with the description of planned decommissioning activities in the Peach Bottom, Unit 1, Decommissioning Plan. The costs have been escalated from the mid-year 2020 dollars reflected in the SSCE to estimated costs as of December 31, 2021.

Decommissioning expenditures prior to the year the SSCE updates were prepared (historical expenditures) are not included in the estimated total cost of decommissioning in the final SSCE reports. Also, the amount reported does not include cash flows from the SSCE for the annual radiological decommissioning costs for 2020 through 2021. CEG considers the SSCE estimated costs for 2020 through 2021 decommissioning activities to be historical expenditures at the time the 2022 decommissioning funding assurance report is generated.

Decontamination and dismantlement of Peach Bottom, Unit 1, will conclude by October 31, 2034 in compliance with 10 CFR 50.82(a)(3).

- (b) The trust fund amount is the amount allocated for Radiological Decommissioning only. There are no past-due tax payments related to decommissioning trust fund activities as of December 31, 2021. Periodic payments of estimated income taxes are made by CEG during the year on a quarterly basis. CEG then obtains reimbursement from the trust funds. The reported trust fund amounts comply with the reporting requirements of 10 CFR 50.75(f) in that the amount of funds reported are those that were accumulated as of December 31, 2021.
- (c) The funding mechanism being used as the source of revenues for the external sinking funds is a non-bypassable charge approved by the Pennsylvania Public Utilities Commission (PaPUC) authorizing PECO Energy Company to continue to collect decommissioning funds for CEG. Any needed adjustments to the amount collected will be made in the next filing of the Nuclear Decommissioning Cost Adjustment (NDCA) to the PaPUC. This cost adjustment is made every five years pursuant to PaPUC Electric Tariff No. 4. The last adjustment was effective January 1, 2018, and allows for the collection of annual payments from ratepayers of \$3,860K through 2032.

ATTACHMENT 3
Annual Radiological Decommissioning Funding Assurance Report for
Peach Bottom Atomic Power Station, Unit 1
(December 31, 2021 dollars, thousands)

(d) 10 CFR 50.75(e)(1)(ii) allows licensees to use a rate of return higher than 2% if the applicable rate-setting authority has specifically authorized a higher rate. The PaPUC approved a 3% real rate of return as part of the approval of the restructuring plan for PECO Energy Company (Letter from J. J. McNulty (PaPUC) to B. D. Crowe (PECO Energy Company), "Approval of Restructuring Plan for PECO Energy Company under Section 2806 of the Public Utility Code; Docket No. R-00973953," dated May 3, 2001). Accordingly, CEG uses a 3% real rate of return. The 3% is applicable through the decommissioning period as described in RAI #1 response provided in the Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information Related to 2013 Report on Status of Decommissioning Funding for Reactors," dated August 15, 2013.

(e) The amount spent on decommissioning in 2021 is consistent with the projected 2021 expense of \$1,063k (December 31, 2021 thousands of dollars) from the site-specific cost estimate. The delta of \$735 (thousands of dollars) can be attributed to decommissioning work performed in 2021 that was planned to occur later in the site specific cost estimate. This work included asbestos abatement and hazardous waste removal.

The amount spent on decommissioning in 2021 represents the 2021 charges to the Peach Bottom, Unit 1, project. Prior to reimbursement from the decommissioning trust fund, these charges will be validated to confirm they are legitimate decommissioning expenses. Consequently, the amount reimbursed may differ from the value provided.

(f) Not all historical data is available, and therefore, the cumulative amount spent on decommissioning and the amount reimbursed are estimates based on the best information obtainable at this time.

(g) Peach Bottom, Unit 1, was shut down in October of 1974, with defueling of the core completed by the following June. Starting in 1975, the spent fuel was shipped by truck to Idaho. The final of 44 shipments was completed in February of 1977. Consequently, no irradiated fuel for Peach Bottom, Unit 1, remains on-site; therefore, 10 CFR 50.82(a)(8)(vii) and 10 CFR 72.30(b) do not apply.

ATTACHMENT 3
Annual Radiological Decommissioning Funding Assurance Report for
Peach Bottom Atomic Power Station, Unit 1
(December 31, 2021 dollars, thousands)

Year	Radiological Decommissioning Cost	BOY Trust Fund Value	BOY Trust Fund Value Less Cost**	First Half Contributions	Trust Fund Earnings	Second Half Contributions	EOY Trust Fund Value
2022	\$1,096	\$159,188	\$158,092	\$1,930	\$4,801	\$1,930	\$166,753
2023	\$1,096	\$166,753	\$165,657	\$1,930	\$5,028	\$1,930	\$174,545
2024	\$1,099	\$174,545	\$173,446	\$1,930	\$5,261	\$1,930	\$182,567
2025	\$1,096	\$182,567	\$181,471	\$1,930	\$5,502	\$1,930	\$190,833
2026	\$1,096	\$190,833	\$189,737	\$1,930	\$5,750	\$1,930	\$199,347
2027	\$1,096	\$199,347	\$198,252	\$1,930	\$6,005	\$1,930	\$208,117
2028	\$7,453	\$208,117	\$200,665	\$1,930	\$6,078	\$1,930	\$210,602
2029	\$29,168	\$210,602	\$181,434	\$1,930	\$5,501	\$1,930	\$190,795
2030	\$47,861	\$190,795	\$142,934	\$1,930	\$4,346	\$1,930	\$151,140
2031	\$47,861	\$151,140	\$103,280	\$1,930	\$3,156	\$1,930	\$110,296
2032	\$55,685	\$110,296	\$54,611	\$1,930	\$1,696	\$1,930	\$60,167
2033	\$63,119	\$60,167	(\$2,952)	\$0	\$0	\$0	(\$2,952)
2034	\$3,811	(\$2,952)	(\$6,763)	\$0	\$0	\$0	(\$6,763)
Total*	\$281,535						

* Columns may not add due to rounding

** Annual contributions added to individual years - Earnings of half of contributions are included in current year to estimate payment of contributions throughout the year

ATTACHMENT 4

**Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management
Report for Three Mile Island Nuclear Station, Unit 1**

ATTACHMENT 4
Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management
Three Mile Island Nuclear Station, Unit 1
(December 31, 2021 dollars, thousands)

1	Formula cost amount per 10 CFR 50.75(c)	N/A (a)
2	Site-specific cost amount per 10 CFR 50.75(b)(4) and 50.75(f)	\$935,255 (a)
3	Site-specific cost amount per 10 CFR 72.30(b)	N/A (b)
4	The amount of decommissioning trust funds accumulated as of December 31, 2021	\$723,377 (c)
5	Schedule of the annual amounts remaining to be collected	\$0
6	Assumptions used regarding rates of escalation, earnings, and other factors used in funding projections	2% (d)
7	There are no contracts relied upon pursuant to 10 CFR 50.75(e)(1)(v)	
8	Financial assurance for decommissioning is provided by the prepayment method, coupled with an external trust fund, in accordance with 10 CFR 50.75(e)(1)(i)	
9	No changes to the trust fund agreements since the last report.	
10	2021 annual amount spent on decommissioning in accordance with 10 CFR 50.82(a)(8)(v)(A)	\$42,571 (e)
11	Cumulative amount spent on decommissioning in accordance with 10 CFR 50.82(a)(8)(v)(A)	\$126,796
	Reimbursed from the decommissioning trust fund	\$116,171
	Not yet reimbursed from the decommissioning trust fund	\$10,625
12	Amount of funds accumulated to cover the cost of managing irradiated fuel pursuant to 10 CFR 50.82(a)(8)(vii)(A) as of December 31, 2021	(c)
13	Projected cost of managing irradiated fuel based on site-specific estimate per 10 CFR 50.82(a)(8)(vii)(B)	\$81,180 (a)
14	2021 annual amount spent on irradiated fuel management	\$28,282 (e)
15	Cumulative amount spent on irradiated fuel management	\$89,785
	Reimbursed	\$50,846 (f)
	Not yet reimbursed	\$38,939

ATTACHMENT 4
Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management
Three Mile Island Nuclear Station, Unit 1
(December 31, 2021 dollars, thousands)

- (a) A formula cost amount using the formula in 10 CFR 50.75(c) is not applicable because Three Mile Island, Unit 1, has been shutdown since September 2019, and some decommissioning activities have already occurred on this unit. However, the amount to decommission Three Mile Island, Unit 1, was calculated pursuant to 10 CFR 50.75(c) to be \$517.0 million (as of December 31, 2021). The calculation of this value assumes the labor, energy, and burial factors described in Attachment 1 and does not account for decommissioning activities that have occurred for Three Mile Island, Unit 1.

In accordance with the regulatory requirements, the site-specific amount is reported per 10 CFR 50.75(b)(4), 50.75(f), 50.82(a)(8)(iii), and 50.82(a)(8)(v)(B) and assumes a SAFSTOR scenario as described in the site-specific cost estimate (SSCE) ("Site-Specific Decommissioning Cost Estimate for Three Mile Island Nuclear Station, Unit 1," April 5, 2019). The costs have been escalated from the 2018 dollars reflected in the decommissioning cost estimate to estimated costs as of December 31, 2021.

The amount reported does not include cash flows from the SSCE estimate for the 2018 – 2021 annual radiological and spent fuel costs because CEG considers the SSCE estimated cost for 2018 - 2021 decommissioning activities to be historical expenditures at the time the 2022 decommissioning funding assurance report is generated.

- (b) Per 10 CFR 72.30(c) ISFSI decommissioning cost is required to be reported every three years. Three Mile Island Nuclear Station, Unit 1 ISFSI was last reported in 2021 (ML21055A776) and will be included in a future report in compliance with the regulation.
- (c) The trust fund amount is the amount allocated for Radiological Decommissioning and Spent Fuel Management. The exemption allowing use of the trust fund for Spent Fuel Management was approved on October 16, 2019 (letter from U.S. Nuclear Regulatory Commission (J. Poole) to Exelon Generation Company, LLC (B. Hanson), "Three Mile Island Nuclear Station, Unit 1 – Exemption from the Requirements of 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) (EPID L-2019-LLE-0009)," ML192549A179).

There are no past-due tax payments related to decommissioning trust fund activities as of December 31, 2021. Periodic payments of estimated income taxes are made by CEG during the year on a quarterly basis. CEG then obtains reimbursements from the trust funds. The reported trust fund amounts comply with the reporting requirements of 10 CFR 50.75(f) in that the amount of funds reported are those that were accumulated as of December 31, 2021.

- (d) A 2% annual real rate of return is used as allowed by 10 CFR 50.75(e)(1)(i).
- (e) The amount spent on decommissioning in 2021 is consistent with the projected 2021 expense of \$48,053 (December 31, 2021 thousands of dollars) from the site-specific cost estimate. The decrease of \$5,482 can be attributed to the actual labor costs being lower than estimated.

ATTACHMENT 4
Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management
Three Mile Island Nuclear Station, Unit 1
(December 31, 2021 dollars, thousands)

The amount spent on irradiated fuel management in 2021 is consistent with the projected 2021 expense total of \$26,735 (December 31, 2021 thousands of dollars) from the site-specific cost estimate (SSCE).

The amount spent on radiological decommissioning and irradiated fuel management in 2021 represents the 2021 charges to the TMI, Unit 1, project. Prior to reimbursement from the decommissioning trust fund, these charges will be validated to confirm they are legitimate decommissioning expenses. Consequently, the amount reimbursed may differ from the value provided.

- (f) The amount of irradiated fuel management reimbursed is the amount reimbursed by the decommissioning trust fund or the Department of Energy.

ATTACHMENT 4
Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management
Three Mile Island Nuclear Station, Unit 1
(December 31, 2021 dollars, thousands)

Year	Radiological Decommissioning and Spent Fuel Cost	BOY Trust Fund Value	BOY Trust Fund Value Less Cost	Trust Fund Earnings	EOY Trust Fund Value
2022	\$57,518	\$723,377	\$665,859	\$13,317	\$679,177
2023	\$11,082	\$679,177	\$668,095	\$13,362	\$681,457
2024	\$11,113	\$681,457	\$670,343	\$13,407	\$683,750
2025	\$11,082	\$683,750	\$672,669	\$13,453	\$686,122
2026	\$11,082	\$686,122	\$675,040	\$13,501	\$688,541
2027	\$11,082	\$688,541	\$677,459	\$13,549	\$691,008
2028	\$11,112	\$691,008	\$679,896	\$13,598	\$693,494
2029	\$11,082	\$693,494	\$682,412	\$13,648	\$696,060
2030	\$11,082	\$696,060	\$684,979	\$13,700	\$698,678
2031	\$11,082	\$698,678	\$687,596	\$13,752	\$701,348
2032	\$11,112	\$701,348	\$690,236	\$13,805	\$704,041
2033	\$11,082	\$704,041	\$692,959	\$13,859	\$706,818
2034	\$14,586	\$706,818	\$692,233	\$13,845	\$706,077
2035	\$21,519	\$706,077	\$684,559	\$13,691	\$698,250
2036	\$6,189	\$698,250	\$692,061	\$13,841	\$705,902
2037	\$6,172	\$705,902	\$699,729	\$13,995	\$713,724
2038	\$6,172	\$713,724	\$707,552	\$14,151	\$721,703
2039	\$6,172	\$721,703	\$715,530	\$14,311	\$729,841
2040	\$6,189	\$729,841	\$723,651	\$14,473	\$738,124
2041	\$6,172	\$738,124	\$731,952	\$14,639	\$746,591
2042	\$6,172	\$746,591	\$740,419	\$14,808	\$755,227
2043	\$6,172	\$755,227	\$749,055	\$14,981	\$764,036
2044	\$6,189	\$764,036	\$757,846	\$15,157	\$773,003
2045	\$6,172	\$773,003	\$766,831	\$15,337	\$782,167
2046	\$6,172	\$782,167	\$775,995	\$15,520	\$791,515
2047	\$6,172	\$791,515	\$785,342	\$15,707	\$801,049
2048	\$6,189	\$801,049	\$794,860	\$15,897	\$810,757
2049	\$6,172	\$810,757	\$804,585	\$16,092	\$820,676
2050	\$6,172	\$820,676	\$814,504	\$16,290	\$830,794
2051	\$6,172	\$830,794	\$824,622	\$16,492	\$841,114
2052	\$6,189	\$841,114	\$834,925	\$16,698	\$851,623
2053	\$6,172	\$851,623	\$845,451	\$16,909	\$862,360

ATTACHMENT 4
Annual Radiological Decommissioning Funding Assurance and Spent Fuel Management
Three Mile Island Nuclear Station, Unit 1
(December 31, 2021 dollars, thousands)

Year	Radiological Decommissioning and Spent Fuel Cost	BOY Trust Fund Value	BOY Trust Fund Value Less Cost	Trust Fund Earnings	EOY Trust Fund Value
2054	\$6,172	\$862,360	\$856,187	\$17,124	\$873,311
2055	\$6,172	\$873,311	\$867,139	\$17,343	\$884,481
2056	\$6,189	\$884,481	\$878,292	\$17,566	\$895,858
2057	\$6,172	\$895,858	\$889,685	\$17,794	\$907,479
2058	\$6,172	\$907,479	\$901,307	\$18,026	\$919,333
2059	\$6,172	\$919,333	\$913,160	\$18,263	\$931,424
2060	\$6,189	\$931,424	\$925,234	\$18,505	\$943,739
2061	\$6,172	\$943,739	\$937,567	\$18,751	\$956,318
2062	\$6,172	\$956,318	\$950,145	\$19,003	\$969,148
2063	\$6,172	\$969,148	\$962,976	\$19,260	\$982,235
2064	\$6,189	\$982,235	\$976,046	\$19,521	\$995,567
2065	\$6,172	\$995,567	\$989,395	\$19,788	\$1,009,182
2066	\$6,172	\$1,009,182	\$1,003,010	\$20,060	\$1,023,070
2067	\$6,172	\$1,023,070	\$1,016,898	\$20,338	\$1,037,236
2068	\$6,189	\$1,037,236	\$1,031,046	\$20,621	\$1,051,667
2069	\$6,172	\$1,051,667	\$1,045,495	\$20,910	\$1,066,405
2070	\$6,172	\$1,066,405	\$1,060,232	\$21,205	\$1,081,437
2071	\$6,172	\$1,081,437	\$1,075,265	\$21,505	\$1,096,770
2072	\$6,189	\$1,096,770	\$1,090,581	\$21,812	\$1,112,392
2073	\$26,822	\$1,112,392	\$1,085,571	\$21,711	\$1,107,282
2074	\$66,460	\$1,107,282	\$1,040,822	\$20,816	\$1,061,638
2075	\$163,151	\$1,061,638	\$898,487	\$17,970	\$916,457
2076	\$121,697	\$916,457	\$794,760	\$15,895	\$810,655
2077	\$79,224	\$810,655	\$731,431	\$14,629	\$746,060
2078	\$79,051	\$746,060	\$667,008	\$13,340	\$680,349
2079	\$35,619	\$680,349	\$644,730	\$12,895	\$657,624
2080	\$144	\$657,624	\$657,480	\$13,150	\$670,630
2081	\$103	\$670,630	\$670,527	\$13,411	\$683,938
Total*	\$1,016,434				

*Column may not add due to rounding

10 CFR 50.75(f)(1)
10 CFR 50.82(a)(8)

March 28, 2022

ZS-2022-0008

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

Zion Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-39 and DPR-48
NRC Docket Nos. 50-295 and 50-304

Subject: Report on Status of Decommissioning Funding for Shutdown Reactors

- References:
1. Exelon Generation Corporation (EGC) Letter RS-08-009, "Application for License Transfers and Conforming Administrative License Amendments," dated January 25, 2008
 2. Nuclear Regulatory Commission (NRC) Letter, J. Hickman to P. Daly, *ZionSolutions, LLC*, "Order Approving Transfer of Licenses and Conforming Amendments Relating to Zion Nuclear Power Station, Units 1 and 2," dated May 4, 2009
 3. *ZionSolutions, LLC* Letter, P. Daly to NRC, "Notification of Amended Post-Shutdown Decommissioning Activities Report (PSDAR) for Zion Nuclear Power Station, Units 1 and 2," dated March 18, 2008
 4. *ZionSolutions, LLC* Letter, D. Beckman to J. Hickman, "Notification of a Significant Schedule Change from that provided in the Amended Post-Shutdown Decommissioning Activity Report," dated November 23, 2010
 5. NRC Letter, A. Persinko to J. Sauger, *ZionSolutions, LLC*, "Zion Nuclear Power Station, Units 1 and 2, Request for Exemption from Certain Decommissioning Trust Fund Requirements of the Decommissioning Regulations," dated July 21, 2014
 6. *ZionSolutions, LLC* Letter, G. van Noordennen, "Report on Status of Decommissioning Funding for Shutdown Reactors," dated March 25, 2021

In accordance with 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning," paragraph (f)(1), and 10 CFR 50.82, "Termination of license," paragraph (a)(8), *ZionSolutions, LLC* (ZS) is submitting a report on the status of funding for decommissioning Zion Nuclear Power Station (ZNPS), Units 1 and 2, and managing the associated irradiated fuel. The revised annual radiological decommissioning and irradiated fuel management funding assurance report for ZNPS is provided in Attachment 1 to this letter for the period ending December 31, 2021.

The minimum required decommissioning funding assurance amount is based on a site-specific decommissioning cost estimate determined in accordance with 10 CFR 50.82(a). A change to the spent fuel management strategy was described in the application for license transfer (Reference 1), accepted by the NRC in Reference 2, and further described in the amended PSDAR (Reference 3). Reference 4 provided the decommissioning schedule that included adjustments resulting from incorporation of the actual calendar date of the asset and NRC license transfers as well as refinement of individual activity sequencing as the project planning achieved more detail.

Each of those references addressed the project's planning and scheduling basis, the associated estimated costs and the available funds for decommissioning, decontamination, dismantlement, and spent fuel management of both ZNPS units as an integrated project. As described in those references, radiological decommissioning as represented by the ZNPS integrated plan included removal of the fuel to a dry storage facility and the decontamination and dismantlement of the radiologically involved systems, structures, and components. The attached decommissioning cost estimate does not include the costs of dismantling non-radiological systems and structures and other non-radiological site restoration. An exemption was issued by the NRC to authorize ZS to use decommissioning trust funds for costs associated with both decommissioning activities and spent fuel management (Reference 5).

ZS agreements with EGC include rights that will enable ZS to return the decontaminated site and transfer the Independent Spent Fuel Storage Installation (ISFSI), spent fuel, remaining Greater than Class C (GTCC) waste, and associated NRC licenses to EGC, now Constellation Energy Generation, LLC (CEG). Once these transfers are accomplished, CEG would maintain the irradiated fuel, including ongoing financial responsibility, until title to and possession of the irradiated fuel is transferred to the Department of Energy for its ultimate disposition. These latter, ongoing costs are not included in the decommissioning estimates herein.

NRC review of the decommissioning management strategy and the associated funding and cost estimate was completed as part of the NRC approval of the transfer of the ZNPS operating licenses to ZS (Reference 2). For purposes of consistency with References 1, 2 and 3, the results of the end of year 2021 funding and cost estimate shown in Attachment 1 are aggregated for the entire project as Unit 1 and Unit 2 are being decommissioned concurrently as a single integrated project. This is consistent with the licensing basis and integrated plans for sequencing radiological decommissioning and fuel management reflected in the references. Since the time of the estimate provided in Reference 3, the cost and funding estimate have been adjusted for market value changes in the decommissioning trust fund (DTF), refinement of the cost and schedule estimate reflecting knowledge gained from decommissioning and fuel management activities, and more developed cost allocations among the activities for radiological and non-radiological work. While this report excludes costs and discussion of non-radiological site restoration, ZS will complete that work as part of the contract scope with CEG.

Attachment 1 provides the aggregated, minimum estimated cost (funds needed) for concurrent radiological decommissioning of both nuclear units and for used fuel management for the remainder of the contract period (corresponding to Item B in Attachment 1), as described in the prior submittals, planned decommissioning sequences, and work breakdown structure. This estimate has been developed from the site aggregate decommissioning schedule and provides the cost and funding allocation necessary to complete decommissioning of the radiologically involved systems, structures and components consistent with the NRC accepted decommissioning strategy. For completeness, the attached report includes the funding amount from the trust for both Unit 1 and Unit 2, as components of the total DTF value (Item A); the projected end of project surplus (Item D), based on the trust fund amount as of December 31, 2021, less the estimate of costs to complete decommissioning, plus annual earnings and less taxes through the end of the project on or before September 30, 2022; the estimated cost to complete decommissioning activities (Item E); the projected costs to manage the irradiated fuel until fuel

ZionSolutions, LLC

ZS-2022-0008

Page 3 of 3

management responsibility transfers back to CEG (Item F); and the total amount spent on decommissioning (Item G), both cumulatively (September 2010 – December 31, 2021) and for calendar year 2021. The information included in the attached report is accurate as of December 31, 2021.

Disbursements from the trust fund have been made in accordance with the conditions of the ZNPS licenses, including the required advance notifications to the Office of Nuclear Reactor Regulation.

There are no regulatory commitments contained within this letter.

If you have any questions about this letter, please contact me at (860) 462-9707.

Respectfully,

Gerard van Noordennen
Senior Vice President Regulatory Affairs

cc: Kimberly Conway, U.S. NRC Project Manager
Regional Administrator, U.S. NRC Region III
Service List (Cover letter only, no attachments)

Attachment:

Annual Radiological Decommissioning and Irradiated Fuel Management Funding Assurance Report for Zion Nuclear Power Station, Aggregate Costs

Zion Nuclear Power Station, Unit 1 and 2 License Transfer Service List

cc:

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Libertyville, IL 60048-1308

ATTACHMENT 1
Annual Radiological Decommissioning and Irradiated Fuel Management Funding Assurance Report for Zion Nuclear Power Station, Aggregate Costs

December 31, 2021
 (2021 dollars, millions)

<u>Trust Fund Amount at December 31, 2021 (A1)</u>	<u>\$0.5M</u>
<u>Funding Assurance (ES Parent Funding) other than the Trust Fund Amount (A2)</u>	<u>\$6.3M</u>
<u>NRC Required Minimum Funding Assurance Amount at December 31, 2021</u>	
<u>(B)=(E)+(F)</u>	<u>\$6.8M</u>
<u>Difference in Trust Fund Amount versus Required Minimum Funding at December 31, 2021 – Surplus/(Shortfall) (C) = (A1) - (B)</u>	<u>(\$6.3M)</u>
<u>Difference in Total Funding Assurance Amount versus Required Minimum Funding Assurance at December 31, 2021 (A1)+(A2)-(B)</u>	<u>\$0</u>
<u>Projected End of Project Surplus at December 31, 2021 (D)</u>	<u>\$0¹</u>
<u>Estimated Costs to Complete Decommissioning at December 31, 2021 (E)</u>	<u>\$4.6M</u>
<u>Projected Costs to Manage Irradiated Fuel at December 31, 2021 (F)</u>	<u>\$2.2M²</u>
<u>Amount Spent on Decommissioning (G):</u>	
<u>Cumulative (September 2010 – December 31, 2020)</u>	<u>\$659.6M</u>
<u>Calendar Year 2021</u>	<u>\$2.6M</u>
<u>Cumulative (September 2010 – December 31, 2021)</u>	<u>\$662.2M</u>

¹ Value is based on the trust fund amount as of December 31, 2021, less the estimate of costs to complete decommissioning, plus annual earnings and less tax through the end of the project.

² This represents the costs to complete the safe, secure operation of the ISFSI and associated infrastructure until the Zion site transitions back to CEG.

General Notes:

- The required minimum funding assurance amount is based on the decommissioning scenario from the site-specific decommissioning cost estimate provided in Reference 3. The cost estimate reflects actual experience to date, as well as forecast refinements made through the date of this filing.
- There are no additional funds to be collected.
- A 2% annual real rate of return is assumed in these calculations.
- There are no contracts relied upon pursuant to 10 CFR 50.75(e)(1)(v).
- There are no material changes to the trust fund agreements or financial assurance contracts as described at the time of transfer of the licenses, except for the reduction of the Letter of Credit held by EGC. As of December 31, 2020, the Letter of Credit amount had been reduced to \$0.
- ZS has funds sufficient to meet its obligations to manage spent fuel safely as requisite to the current cost estimates for the project and pursuant to 10 CFR 50.82(a)(8)(vii). The estimated cost to manage the irradiated fuel, as reported above (Item F), includes O&M and Security costs associated with managing the ISFSI until the site transitions back to CEG.
- Upon completion of the decommissioning project, ZS will transfer the ISFSI to CEG. CEG will assume responsibility to manage the spent fuel safely from that date until title to and possession of the irradiated fuel is transferred to the Secretary of Energy for its ultimate disposition. On September 1, 2010, in accordance with the ASA, EGC retained \$25 million of the Decommissioning Trust Fund for this purpose. The \$25 million retained by EGC is not included in the remaining Decommissioning Trust Fund amount as reported above (Item A).
- Inquiries regarding the management of spent nuclear fuel beyond completion of the decommissioning project should be directed to CEG.