

RS-16-204

10 CFR 72.30(b)

October 17, 2016

ATTN: Document Control Desk
Director - Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
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, 50-304, and 72-1037

Subject: Independent Spent Fuel Storage Installation (ISFSI) Decommissioning Funding Plan for Zion

Reference: Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Proposed Independent Spent Fuel Storage Installation (ISFSI) Decommissioning Funding Plan for Zion," dated October 17, 2013 (ADAMS Accession No. ML13291A125)

Exelon Generation Company, LLC (EGC) is not the licensee for Zion Nuclear Power Station (ZNPS), Units 1 and 2, and is not currently responsible for decommissioning activities at ZNPS. Zion Solutions, LLC (ZS) is the licensee and is responsible for all decommissioning activities currently ongoing at ZNPS. Per the contractual arrangements between ZS and EGC, following ZS's completion of all decommissioning activities not related to the Independent Spent Fuel Storage Installation (ISFSI), ZS will have the right, subject to the NRC's approval, to transfer the ZNPS license to EGC. When the license transfers to EGC, EGC will then become responsible for maintaining and decommissioning the ISFSI. In preparation for transferring the ZNPS license, including the ISFSI, to EGC, EGC submitted an ISFSI decommissioning funding plan to the U.S. Nuclear Regulatory Commission (NRC) on October 17, 2013 (Reference letter above). 10 CFR 72.30, "Financial assurance and recordkeeping for decommissioning," requires that the funding plan be resubmitted periodically with adjustments as necessary to account for changes in costs and the extent of contamination. EGC is hereby submitting an updated ISFSI decommissioning funding plan for ZNPS, Units 1 and 2.

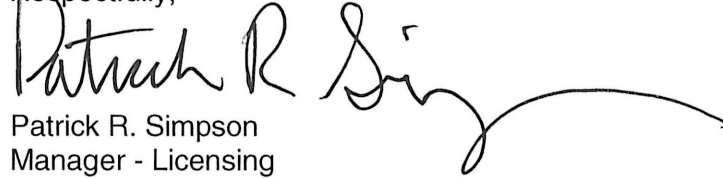
This submittal is subdivided as follows:

- Attachment 1 provides a description of the updated ISFSI decommissioning funding plan.
- Attachment 2 provides details of the ISFSI decommissioning funding estimate.

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There are no regulatory commitments contained within this letter. Should you have any questions concerning this letter, please contact Ms. Lisa A. Simpson at (630) 657-2815.

Respectfully,

A handwritten signature in black ink, appearing to read 'Patrick R. Simpson', with a long, sweeping horizontal line extending to the right.

Patrick R. Simpson
Manager - Licensing

Attachments:

1. ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station
2. ISFSI Decommissioning Funding Estimate for Zion Nuclear Power Station

cc: NRC Regional Administrator, Region III

ATTACHMENT 1

ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station

1.0 SUMMARY DESCRIPTION

2.0 DETAILED DESCRIPTION

2.1 Reasonable Assurance of Funds Availability

2.2 Detailed Cost Estimate

2.3 Assumptions

2.4 Method of Assurance

2.5 Volume of Subsurface Residual Radioactivity Requiring Remediation

2.6 Certification of Financial Assurance

3.0 REFERENCES

ATTACHMENT 1

ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station

1.0 SUMMARY DESCRIPTION

Exelon Generation Company, LLC (EGC) maintains a cost estimate for operation and decommissioning of the Zion Nuclear Power Station (ZNPS) Independent Spent Fuel Storage Installation (ISFSI), which is periodically updated. This cost estimate includes the costs associated with decommissioning the ISFSI at the site. 10 CFR 72.30, "Financial assurance and recordkeeping for decommissioning," requires that the funding plan for decommissioning the ISFSI be resubmitted periodically with adjustments as necessary to account for changes in costs and the extent of contamination. EGC has extracted from this cost estimate, and provided herein, information supporting the required decommissioning funding update for ZNPS, Units 1 and 2.

EGC notes that radiological decommissioning costs for ISFSIs typically consist of the costs associated with removing and disposing of small volumes of neutron-activated concrete and certain structural steel components. No impact is expected upon soil and groundwater at ZNPS during the storage periods contemplated in the cost estimate. EGC also notes that induced radioactivity at the ZNPS ISFSI is not expected to result in residual radioactivity in excess of 25 mRem/yr in an unrestricted release scenario, were no action to be taken to remediate the site. However, since EGC anticipates that there may be small, but measurable amounts of induced radioactivity present and release of this material from ZNPS will require it to be disposed of at a NRC licensed radioactive waste disposal facility, EGC has included the costs associated with the release of the material containing the induced radioactivity in its cost estimate.

2.0 DETAILED DESCRIPTION

2.1 Reasonable Assurance of Funds Availability

In Reference 1, EGC described the terms of the sale agreement of ZNPS to ZionSolutions, LLC (ZS) where ZS would accomplish the decommissioning of the ZNPS Units except for the spent nuclear fuel and Greater than Class C Waste (GTCC), which will be stored at the ISFSI constructed by ZS and maintained onsite until final disposition. The NRC approved the sale agreement and corresponding license transfer via Reference 2.

Following completion of the sale, EGC transferred the fund assets from the ZNPS Units' Qualified and Non-Qualified Decommissioning Trust Funds into Qualified and Non-Qualified Decommissioning Trust Funds established by ZS. As part of the transfer of fund assets to ZS, EGC retained and segregated \$25 million in its Non-Qualified Decommissioning Trust Fund for the purpose of funding the maintenance and decommissioning of the ISFSI after ZS completes the decommissioning of the rest of the ZNPS site.

Table 1 shows the trust fund assets and the costs estimated for ISFSI decommissioning as required under 10 CFR 72.30(b), as of August 31, 2016.

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ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station

2.2 Detailed Cost Estimate

The detailed cost estimate was developed to estimate the costs to manage the spent nuclear fuel in an ISFSI on the ZNPS site and subsequent decommissioning. The analysis relies upon site-specific information reflecting the design of the spent fuel dry storage facility and current assumptions pertaining to the disposition of spent fuel.

The cost estimate assumes that once decommissioning and demolition of the ZNPS units is complete, currently scheduled to occur on or before September 1, 2020, the site license and responsibility for ISFSI operation and maintenance of the spent fuel and decommissioning of the ISFSI will be transferred back to EGC from ZS.

EGC currently intends to use an independent contractor to perform all activities associated with the decommissioning of the ISFSI. Attachment 2 shows the cost for an independent contractor to perform all the decommissioning activities, with an adequate contingency factor, to meet the 10 CFR 20.1402 criteria for unrestricted use. All costs have a 25% contingency factor applied consistent with the evaluation criteria referenced by the NRC in NUREG-1757 (Reference 3), except Items 11 through 15 and Item 17 in Attachment 2. Costs associated with Items 11 through 15 and Item 17 had a 15% contingency factor applied to them. A 15% contingency factor instead of 25% was applied for these items, because decommissioning experience with these types of costs has been more predictable and there has been a lower likelihood of unforeseen increases associated with these types of costs.

2.3 Assumptions

EGC has made the following assumptions within the ZNPS cost estimate with respect to the site ISFSI decommissioning:

1. The ZNPS license will be transferred back to EGC on September 1, 2020.
2. All values in Attachment 2 are at ownership share. The ownership share for EGC of ZNPS is 100%.
3. All ISFSI decommissioning costs are conservatively expected to be incurred beginning in the year in which the Department of Energy (DOE) has accepted all spent fuel from the site for disposal. For the purposes of the cost estimate, the transfer of the spent fuel to the DOE is assumed to be completed in 2033. As part of the periodic updates to the cost estimate, this assumption is revised as necessary to reflect changes to the spent fuel management plans. This assumption has been revised in this update from the previous cost estimate provided to the NRC.
4. The trust fund assets allocated for ISFSI Decommissioning earn a 2% annual real rate of return, consistent with 10 CFR 50.75(e)(1)(i).

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ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station

2.4 Method of Assurance

In accordance with 10 CFR 72.30(b)(4), Table 1 describes the method of assuring funds for ISFSI decommissioning from 10 CFR 72.30(e). EGC periodically updates the cost estimate associated with the site specific assurance method and adjusts the funding levels, as necessary.

2.5 Volume of Subsurface Residual Radioactivity Requiring Remediation

EGC has not identified any onsite, subsurface material containing residual radioactivity at the ISFSI.

2.6 Certification of Financial Assurance

In accordance with 10 CFR 72.30(b), financial assurance for decommissioning the ISFSI has been provided in an amount that equals the cost estimate for ISFSI decommissioning, as demonstrated in Table 1.

3.0 REFERENCES

1. Letter from T. S. O'Neill (Exelon Generation Corporation) and J. Christian (ZionSolutions, LLC) to U.S. Nuclear Regulatory Commission, "Application for License Transfers and Conforming Administrative License Amendments," dated January 25, 2008 (ADAMS Accession No. ML080310521)
2. Letter from J. B. Hickman (Nuclear Regulatory Commission) to J. A. Christian (ZionSolutions, LLC), "Order Approving Transfer of Licenses and Conforming Amendments Relating to Zion Nuclear Power Station, Units 1 and 2 (TAC Nos. J00341 and J00342)," dated May 4, 2009 (ADAMS Accession No. ML082840443)
3. NUREG-1757, Vol. 3, Rev. 1, "Consolidated Decommissioning Guidance - Financial Assurance, Recordkeeping, and Timeliness," dated February 2012

ATTACHMENT 1
ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station

TABLE 1
Zion Nuclear Power Station ISFSI Decommissioning Financial Assurance Summary

Total Trust Fund Assets as of August 31, 2016 (Thousands \$)	Trust Fund Assets Allocated for ISFSI Decommissioning, 2016 dollars (Thousands \$)	Annual Contributions	Parent Company Guarantee	Trust Fund Assets Allocated for ISFSI Decommissioning Assuming a 2% Real Rate of Return Until the Start of Decommissioning, 2016 dollars (Thousands \$)	Part 72.30 Site Specific Decommissioning Cost, 2016 dollars (Thousands \$)	Method of Assurance
\$54,593	\$11,538 ¹	\$0	\$0	\$15,944	\$15,944	10 CFR 72.30(e)(1)

1 The remaining funds have been allocated for spent fuel management.

ATTACHMENT 2
ISFSI Decommissioning Funding Estimate for Zion Nuclear Power Station

Zion*

Item #	Activity	Labor Costs	Equipment & Materials Costs	Burial Costs	Other Costs	Total Costs**
	ISFSI Decommissioning					
1	Staffing	\$1,011,932				\$1,011,932
2	Characterize ISFSI	\$2,317,286	\$390,286		\$272,594	\$2,980,166
3	Security	\$659,391				\$659,391
4	Insurance				\$903,285	\$903,285
5	NRC Fees				\$241,148	\$241,148
6	Property Taxes				\$1,089,757	\$1,089,757
	Demolish ISFSI					
7	Mobilization	\$81,730	\$2,437		\$1,860	\$86,027
8	Transfer Cask	\$2,930	\$1,749			\$4,680
9	Fuel Transfer Station	\$5,576	\$7,294			\$12,870
10	Concrete Casks	\$147,508	\$217,072			\$364,580
11	Fencing	\$16,339	\$8,803			\$25,142
12	Monitoring Building	\$32,716	\$61,411			\$94,127
13	ISFSI Pad & Foundations	\$124,729	\$234,129			\$358,858
14	Warehouse	\$57,253	\$107,469			\$164,722
15	Roadways & Drainage	\$15,709	\$7,813			\$23,523
16	General Conditions	\$159,189	\$136,012			\$295,201
17	Recycle Concrete	\$302,248	\$424,310		\$915,496	\$1,642,055
18	Dispose of Activated Concrete	\$12,335	\$140,066	\$1,801,965	\$811,635	\$2,766,001
19	Dispose of Activated Steel	\$14,328	\$142,715	\$1,856,570	\$836,230	\$2,849,843
	License Termination					
20	Final Status Survey	\$245,489	\$9,188		\$44,034	\$298,711
21	NRC Confirmation Survey	\$63,120			\$8,981	\$72,100
					TOTAL:	\$15,944,119

*Costs in 2016 dollars include contingency as outlined in Section 2.2 of Attachment 1

**Total Costs may not add due to rounding