

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

March 29, 2018

ZS-2018-0027

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

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 the Zion Nuclear Power Station (ZNPS), Units 1 and 2, and managing the associated irradiated fuel. The annual radiological decommissioning and irradiated fuel management funding assurance report for ZNPS is provided in the Attachment to this letter for the period ending December 31, 2017.

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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 via 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 includes 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. A ZS exemption was issued by the NRC to confirm ZS authority to use the decommissioning trust fund 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 on or before September 1, 2020. Once these transfers are accomplished, EGC 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 estimates herein.

NRC review of this decommissioning management strategy and the associated funding and cost estimate was accomplished 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 2017 funding and cost estimate shown in the Attachment are aggregated for the entire project since 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 last 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 more mature knowledge gained from the new cost-significant contracts for various 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, it is ZS plan to additionally complete that work as part of the contract scope with EGC.

The Attachment provides the aggregated, minimum estimated cost (funds needed) for concurrent radiological decommissioning of both nuclear units and for all used fuel management for the remainder of the ten year contract period (corresponding to Item B in the Attachment), as defined by 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 optimally decommission the radiologically involved systems, structures and components consistent with the Commission accepted decommissioning strategy. For completeness, 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, 2017, less the estimate of costs to complete decommissioning, plus annual earnings and less taxes through the end of the project on or before 2020; the estimated cost to complete decommissioning activities (Item E); the projected costs to manage the irradiated fuel until fuel management responsibility transfers back to EGC on or before September 1, 2020 (Item F); and the total amount spent on decommissioning (Item G), both cumulatively (September 2010 – December 31, 2017) and for calendar year 2017 is included in the attached report and is accurate as of December 31, 2017.

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,



for Gerard van Noordennen  
Vice President Regulatory Affairs

cc: John Hickman, U.S. NRC Senior Project Manager  
Service List

Attachment:

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

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

December 31, 2017  
(2017 dollars, millions)

<u>Trust Fund Amount at December 31, 2017 (A)</u>	<u>\$29.3<sup>1</sup></u>
<u>NRC Required Minimum Funding Assurance Amount at December 31, 2017 (B)</u>	<u>\$24.0</u>
<u>Difference in Trust Fund Amount versus Required Minimum Funding</u> <u>at December 31, 2017 – Surplus/(Shortfall) (C) = (A) - (B)</u>	<u>\$5.3</u>
<u>Projected End of Project Surplus at December 31, 2017 (D)</u>	<u>\$5.7<sup>2</sup></u>
<u>Estimated Costs to Complete Decommissioning at December 31, 2017 (E)</u>	<u>\$24.0</u>
<u>Projected Costs to Manage Irradiated Fuel at December 31, 2017 (F)</u>	<u>\$9.8<sup>3</sup></u>
<u>Amount Spent on Decommissioning<sup>4</sup> (G):</u>	
<u>Cumulative (September 2010 – December 31, 2016)</u>	<u>\$574.7</u>
<u>Calendar Year 2017</u>	<u>\$57.2</u>
<u>Cumulative (September 2010 – December 31, 2017)</u>	<u>\$631.9</u>

- a) 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.
- b) The trust fund amount is the actual trust fund balance less outstanding disbursements for decommissioning costs incurred through the same date.
- c) There are no additional funds to be collected.

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<sup>1</sup> This NDT position, together with EnergySolutions resources and the \$98 Million Letter of Credit backup for the NDT agreed with Exelon in the Zion Nuclear Power Station Unit 1 and 2 Asset Sale Agreement, that are available but are not relied upon here, provides for sufficient funding and financial assurance for completion of radiological decommissioning of the Zion Project.

<sup>2</sup> The surplus is based on the trust fund amount as of December 31, 2017, less the estimate of costs to complete decommissioning, plus annual earnings and less taxes through the end of the project on or before 2020.

<sup>3</sup> This represents the costs to complete the safe, secure operation of the ISFSI and associated infrastructure until the Zion site transitions back to EGC. This is planned to be on or before September 1, 2020.

<sup>4</sup> The amounts spent on decommissioning represents withdrawals made from the trust fund reported for radiological decommissioning.

- d) A 2% annual real rate of return is assumed in these calculations.
- e) There are no contracts relied upon pursuant to 10 CFR 50.75(e)(1)(v).
- f) 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). There are no modifications to the current method of providing financial assurance since the last submitted report.
- g) There are no material changes to the trust fund agreements or financial assurance contracts as described at the time of transfer of the licenses.
- h) 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 EGC on or before September 1, 2020.
- i) Upon completion of the decommissioning project on or before September 1, 2020, ZS will transfer the ISFSI to EGC in accordance with the Asset Sale Agreement (ASA). EGC 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).
- j) Inquiries regarding the management of spent nuclear fuel beyond completion of the decommissioning project on or before September 1, 2020 onward should be directed to EGC.

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