

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

June 13, 2019

ZS-2019-0056

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: Revised 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 26, 2019
 7. NRC Letter, J. Hickman to J. Sauger, "Zion Nuclear Power Station, Units 1 and 2 – Request for Additional Information Related to the Status of Decommissioning Funding for Shutdown Reactors, dated May 22, 2019.

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 revised 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, 2018.

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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 decommissioning 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 2018 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 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's plan additionally to complete that work as part of the contract scope with EGC.

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 ten year contract period (corresponding to Item B in Attachment 1), 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 NRC 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, 2018, 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, 2018) and for calendar year 2018 is included in the attached report and is accurate as of December 31, 2018.

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.

On May 22, 2019 (Reference 7), NRC provided a request for additional information (RAI) with regard to the annual report on the status of decommissioning funding for ZNPS (Reference 6). In response to the NRC RAI, ZS is providing a revised report (Attachment 1) to clarify the numbers reported for the trust fund balance for 2018 and to provide additional information on the funds used to ensure the project is completed on time. Attachment 2 provides the responses to NRC's RAIs.

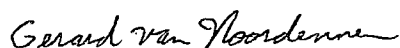
This submittal provides the NRC with financial information in response to the NRC's RAI. ZionSolutions considers this proprietary financial information to be confidential and requests that NRC withhold it from public disclosure under 10 CFR 2.390(a)(4).

Attachment 2 to this submittal contains a ZionSolutions Proprietary Financial Information Affidavit pursuant to 10 CFR 2.390. The Affidavit sets forth the basis for which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in 10 CFR 2.390(b)(4). All documents within the scope of this affidavit are marked as "withhold from public disclosure under 10 CFR 2.390." Attachment 3 provides a redacted version of the revised 2018 Annual Radiological Decommissioning and Irradiated Fuel Management Funding Assurance Report for Zion Nuclear Power Station, Aggregate Costs, and Attachment 4 provides a redacted version of the response to the NRC RAI.

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
Vice President Regulatory Affairs

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

Attachments:

- 1) Revised 2018 Annual Radiological Decommissioning and Irradiated Fuel Management Funding Assurance Report for Zion Nuclear Power Station, Aggregate Costs
- 2) Responses to May 22, 2019, Request for Additional Information
- 3) Redacted version of revised 2018 Annual Radiological Decommissioning and Irradiated Fuel Management Funding Assurance Report for Zion Nuclear Power Station, Aggregate Costs
- 4) Redacted Version of Responses to May 22, 2019, Request for Additional Information

ZionSolutions, LLC PROPRIETARY FINANCIAL INFORMATION AFFIDAVIT

Affidavit of Gerard van Noordennen, Vice President Regulatory Affairs, ZionSolutions, LLC.

The revised Annual Radiological Decommissioning and Irradiated Fuel Management Funding Assurance Report for Zion Nuclear Power Station and the responses to the May 22, 2019, NRC Request for Information, contained in Attachments 1 and 2 of this submittal, respectively, consist of proprietary financial information that ZionSolutions, LLC considers confidential. Release of this information would cause irreparable harm to the competitive position of ZionSolutions, LLC. The basis for this declaration is:


- i. This information is owned and maintained as proprietary by ZionSolutions, LLC,
- ii. This information is routinely held in confidence by ZionSolutions, LLC and not disclosed to the public,
- iii. This information is being requested to be held in confidence by the NRC by this petition,
- iv. This information is not available in public sources,
- v. This information would cause substantial harm to ZionSolutions, LLC if it were released publicly, and
- vi. The information to be withheld is being transmitted to NRC in confidence.

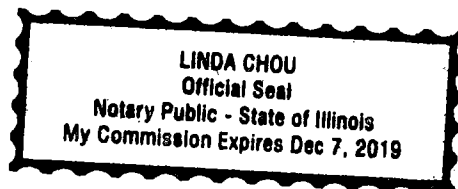
I, Gerard van Noordennen, being duly sworn, state that I am the person who subscribes my name the foregoing statement, I am authorized to execute the Affidavit on behalf of ZionSolutions, LLC, and that the matters and facts set forth in the statement are true to the best of my knowledge, information, and belief.

Gerard van Noordennen
Name: Gerard van Noordennen
Title: Vice President Regulatory Affairs
Company: ZionSolutions, LLC

SUBSCRIBED AND SWORN TO BEFORE ME

THIS 13th DAY OF June, 2019


Notary Public



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

cc:

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REDACTED VERSION FOR PUBLIC DISCLOSURE

ATTACHMENT 3

REDACTED

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

REDACTED VERSION FOR PUBLIC DISCLOSURE

Attachment 4

**Redacted Revised Annual Radiological Decommissioning and Irradiated Fuel Management
 Funding**

**Assurance Report for
 Zion Nuclear Power Station, Aggregate Costs**

December 31, 2018
 (2018 dollars, millions)

<u>Trust Fund Amount at December 31, 2018 (A1)</u>	<u>\$8.7</u>
<u>Funding Assurance (Letter of Credit) other than the Trust Fund Amount (A2)</u>	<u>\$44.5⁵</u>
<u>NRC Required Minimum Funding Assurance Amount at December 31, 2018 (B)=(E)+(F)</u>	<u>\$28.5</u>
<u>Difference in Trust Fund Amount versus Required Minimum Funding at December 31, 2018 – Surplus/(Shortfall) (C) = (A1) - (B)</u>	<u>(\$19.8)</u>
<u>Difference in Total Funding Assurance Amount versus Required Minimum Funding Assurance at December 21, 2018 (A1)+(A2)-(B)</u>	<u>\$24.7</u>
<u>Projected End of Project Surplus at December 31, 2018 (D)</u>	<u>\$0.0⁶</u>
<u>Estimated Costs to Complete Decommissioning at December 31, 2018 (E)</u>	<u>\$24.0</u>
<u>Projected Costs to Manage Irradiated Fuel at December 31, 2018 (F)</u>	<u>\$4.5⁷</u>
<u>Amount Spent on Decommissioning⁸ (G):</u>	
<u>Cumulative (September 2010 – December 31, 2017)</u>	<u>\$631.9</u>
<u>Calendar Year 2018</u>	<u>\$19.6</u>
<u>Cumulative (September 2010 – December 31, 2018)</u>	<u>\$651.5</u>

⁵ This NDT position, together with \$44.5 million Letter of Credit backup for the NDT provides sufficient funding and financial assurance for the completion of radiological decommissioning of the Zion Project. EnergySolutions will continue to fund additional decommissioning project activities using company cash reserves.


⁶ Value is based on the trust fund amount as of December 31, 2018, less the estimate of costs to complete decommissioning, plus annual earnings and less tax through the end of the project.

⁷ This represents the costs to complete the safe, secure operation of the ISFSI and associated infrastructure until the Zion site transitions back to EGC.

⁸ The amounts spent on decommissioning (G) represents withdrawals made from the trust fund reported for radiological decommissioning. EnergySolutions provided ██████ in 2018 to fund additional decommissioning project activities, using company cash reserves.

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.
- Unexpected circumstances in 2018 created costs not reflected in the estimated costs-to-complete, as of December 31, 2017, and are the reason that the estimated costs-to-complete as of December 31, 2018 were not reduced as much as anticipated at the end of 2017. Those circumstances include higher remediation and final status survey costs.

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- 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).
 - 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), in conjunction with \$44.5 million Letter of Credit payable to the Backup Decommissioning Trust in accordance with 10 CFR 50.75 (e)(1)(iii). EnergySolutions has provided, and will continue to provide, to ZionSolutions funds necessary to complete decommissioning.
 - 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. Pursuant to the contract between EnergySolutions and EGC, the Letter of Credit amount plus Trust Funds will be at least 200% of the remaining costs to complete decommissioning. As of December 31, 2018, the Letter of Credit amount had been reduced to \$44.5 million.
 - 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.
 - Upon completion of the decommissioning project, ZS will transfer the ISFSI to EGC. 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).
 - Inquiries regarding the management of spent nuclear fuel beyond completion of the decommissioning project should be directed to EGC.

REDACTED VERSION FOR PUBLIC DISCLOSURE

ATTACHMENT 4

REDACTED

Response to May 22, 2019, Request for Information

REDACTED VERSION FOR PUBLIC DISCLOSURE

Attachment 4 Redacted Response to May 22, 2019, Request for Information

Request for Additional Information

In its March 26, 2019, decommissioning funding status (DFS) report, the licensee reflected a nuclear decommissioning trust (NDT) amount of -\$8.5 million (2018 dollars), as of December 31, 2018. Additionally, the licensee estimated costs to complete decommissioning, including managing irradiated fuel, to be \$6.7 million. Therefore, when considering the negative NDT balance, the licensee has a total shortfall of approximately \$15.2 million.

*Referring to the NDT balance, the licensee stated, "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** (emphasis added by NRC staff), provides for sufficient funding and financial assurance for completion of radiological decommissioning of the Zion Project."*

Furthermore, as it relates to the \$4.5 million in projected costs to manage irradiated fuel, the licensee stated, "This represents the costs to complete the safe, secure operation of the ISFSI and associated infrastructure until the Zion site transitions back to Exelon Generation Company (EGC). This is planned to be on or before September 1, 2020." Additionally, the licensee stated that, "The amounts spent on decommissioning represents withdrawals made from the trust fund reported for radiological decommissioning."

Additionally, in its DFS report dated March 29, 2018 (ADAMS Accession No. ML18093A434), the licensee reflected a NDT amount of \$29.3 million (2018 dollars), as of December 31, 2017, with an estimated cost to complete decommissioning, including managing irradiated fuel, of \$24.0 million. Accordingly, at that time, the licensee projected an "End of Project Surplus" of \$5.7 million.

Based on the information provided in the report, the staff needs additional information to understand how and why the NDT reflects a negative balance, and what source(s) of funding is/are being relied upon to pay for future estimated decommissioning and spent fuel management costs. Therefore, the NRC staff is requesting the following information, to clarify the status of decommissioning funding assurance for ZNPS, Units 1 and 2, in accordance with 10 CFR 50.75(e)(1) and 10 CFR 50.82a(8)(v)(vii).

RAI 1

As described above, the end of year balance in the NDTs reported to the NRC for ZNPS, Units 1 and 2, reflects a negative balance (-\$8.5 million), which is inconsistent with the DFS report submitted in 2018 that projected an end of project surplus. Provide an explanation for how and why the NDT balance is negative. Should ZS continue to assert a negative NDT balance, provide a certified copy of the year end and latest quarter NDT statement from the third party trustee/custodian of the fund reflecting this negative position.

ZS Response:

As of December 31, 2018, the NDT balance was \$8.7 million. In the previous submittal, in March 2019, the negative NDT balance (-\$8.5 million) was net of outstanding disbursements (accrued but unpaid costs), consistent with the way that the trust fund balance had previously been reported.

RAI 2

Provide a list of expenses paid using the NDT since the last report. Explain whether any funds allocated for radiological decommissioning in 2018 were reallocated for any other purpose. If so, describe the purpose and explain why the funds were repurposed.

ZS Response:

The table below enumerates the decommissioning expenses, by account and by task, and shows the amounts paid using the NDT, as well as ES funds, in 2018. As can be seen in the table, the amount spent for license radiological decommissioning activities exceeds the amount funded from the NDT, and no funds allocated for radiological decommissioning in 2018 were reallocated for any other purpose.

Table: Summary of Expenses and Source of Funding

	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18
Summary by Account							
Labor							
Subcontracts							
Waste Disposal							
Materials & Equipment							
Letter of Credit							
NRC License Fees							
Travel							
Other Direct Costs							
Salvage Value / Cost Recovery							
Cost of Operations							
Summary by Task							
Spent Fuel							
Radiological Decommissioning							
Site Restoration							
Total Cost							
Source of Funding							
Funded from NDT							
Funded from ES Cash							

Table: Summary of Expenses and Source of Funding (Continued)

	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	2018
Summary by Account						
Labor						
Subcontracts						
Waste Disposal						
Materials & Equipment						
Letter of Credit						
NRC License Fees						
Travel						
Other Direct Costs						
Salvage Value / Cost Recovery						
Cost of Operations						
Summary by Task						
Spent Fuel						
Radiological Decommissioning						
Site Restoration						
Total Cost						
Source of Funding						
Funded from NDT						
Funded from ES Cash						
Total Funded						
Costs incurred during 2018 but unpaid at year end						

RAI 3

*As noted above, in your decommissioning funding status report you stated that, “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 Units 1 and 2 Asset Sale Agreement, **that are available but are not relied upon here** (emphasis added by NRC staff), provides for sufficient funding and financial assurance for completion of radiological decommissioning of the Zion Project.”*

Given that the reported NDT balance is negative and in light of statements in the 2019 DFS report that the \$98 Million Letter of Credit is not being relied upon, in accordance with 10 CFR 50.82(a)(8)(vi), identify the specific source(s) of funds (as allowed under 10 CFR 50.75(e)(1)), including supporting documentation (i.e., financial statement and/or letter of credit), relied upon to cover the projected estimated cost to complete decommissioning and for spent fuel management, and the negative NDT balance (as appropriate) provided in your report.

ZS Response:

As discussed in the response to RAI 1, the trust fund balance, as of December 31, 2018, was \$8.7M; however, considering the increased costs of decommissioning (associated with remediation and final status surveys) and resulting in an increased NRC-required minimum funding assurance amount, there is a shortfall in the current decommissioning trust fund. Although ZS intends to use EnergySolutions cash reserves to provide the additional funding for the Zion decommissioning project, the \$44.5 million letter of credit is available as a means of demonstrating funding assurance.