

February 2, 2016

Mr. Michael Dougherty, Chairperson  
Sac and Fox Nation of Missouri  
305 N. Main Street  
Reserve, KS 66434

SUBJECT: NATIONAL HISTORIC PRESERVATION ACT, SECTION 106 - NOTIFICATION  
OF ACCEPTANCE OF AMENDMENT APPLICATION FOR LICENSE  
TERMINATION PLAN FOR THE ZION NUCLEAR POWER STATION

Dear Chairperson Dougherty:

On December 19, 2014, the U.S. Nuclear Regulatory Commission (NRC) received an application for a license amendment request from Zion Solutions, LLC (ZS). ZS is the owner of the Zion Nuclear Power Station (ZNPS), which is a shut-down nuclear power reactor facility located near Zion, Illinois (Lake County) on the western shore of Lake Michigan. ZS holds NRC operating licenses for ZNPS Units 1 and 2, which are the two reactor units at the site. The ZS license amendment application requests the NRC's approval of a license termination plan (LTP) for ZNPS Units 1 and 2.

The ZNPS site is approximately 40 miles north of Chicago, Illinois and 42 miles south of Milwaukee, Wisconsin (Enclosure 1 is a map that shows the general location for the ZNPS site). The ZNPS site is approximately 331 acres, including an approximate 87-acre, fence-enclosed area, in which both Units 1 and 2 and the ZNPS Independent Spent Fuel Storage Installation (ISFSI) are located.

Under the Atomic Energy Act of 1954, as amended, the NRC issued operating licenses for both Units 1 and 2 in 1973 (License No. DPR-39, Docket No. 50-295 for Unit 1, and License No. DPR-48, Docket No. 50-304 for Unit 2). Specifically, the NRC issued the operating licenses for ZNPS Units 1 and 2 under its regulations at Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50. Both units generated electricity for portions of northern Illinois and southern Wisconsin for over 20 years. Unit 1 ceased operation in 1997 and Unit 2 ceased operation in 1996. ZS is completing the decommissioning of both units. All spent fuel has been removed from the ZNPS spent fuel pool and ZS completed the final transfer in January 2015. ZS now stores the spent fuel assemblies in large steel cylinder-encased, pre-cast concrete casks located at the ZNPS ISFSI, which is located in the southwest portion of the ZNPS site. Spent fuel that has been removed from a reactor's spent fuel pool is typically stored in casks at a nuclear power plant's ISFSI.

The submission of the LTP occurs towards the end of a nuclear power plant's decommissioning process. The stated objective of the ZS LTP is to demonstrate to the NRC that ZS will successfully reduce the level of residual radioactivity to levels that will permit the release of the ZNPS site for unrestricted use and therefore allow for the termination of the NRC licenses (except for the ZNPS ISFSI, which is described below). The NRC's radiological criteria to release a site for unrestricted use is described in the NRC's regulation at 10 CFR 20.1402. ZS has indicated that upon license termination, it will transfer ownership and control of the ZNPS site (including the ZNPS ISFSI) to Exelon Nuclear Generation, LLC (Exelon).

### *Proposed Undertaking*

ZS submitted the LTP in accordance with NRC regulation 10 CFR 50.82(a)(9). The NRC, when it approves an LTP, is approving the following: (a) the adequacy of the licensee's decommissioning funding plan to assure that sufficient funding is available to complete the remaining radiological remediation activities; (b) the radiation-release criteria for license termination; and (c) the adequacy of the design of the final site survey to verify that the radiological release criteria have been met. The final status survey is the radiological survey performed after an area has been fully characterized, remediation has been completed, and the area is ready to be released. In accordance with NRC regulation, 10 CFR 50.82(a)(11), the NRC shall terminate the ZNPS reactor operating licenses (except for the ZNPS ISFSI) upon ZS' demonstration, through its final site radiation survey, that it has met the radiological release criteria of 10 CFR 20.1402.

Although 10 CFR 50.82(a)(9) requires the licensee to identify remaining dismantlement activities in its LTP, the NRC's regulatory purpose in approving the LTP is limited to the concerns described in the previous paragraph. The identification of the remaining dismantlement activities are for the purpose of ensuring that the licensee will have adequate funds to reduce the residual radioactivity to the required levels. In order for the NRC to approve the LTP, ZS must show how it will demonstrate, in a final site survey, the residual radioactivity remaining at the licensed site is within the 10 CFR 20.1402 regulatory limits.

### *ZNPS ISFSI*

The ZNPS ISFSI will remain under NRC's regulatory jurisdiction and is not part of this undertaking. The ZNPS 10 CFR Part 50 operating licenses will remain in effect for the ZNPS ISFSI only. If the LTP is approved, and if ZS demonstrates that it has met the 10 CFR 20.1402 regulatory criteria, the ZNPS licenses will be considered terminated in all other aspects. The ZNPS ISFSI is, and will continue to be, governed by the NRC's general license regulations for ISFSIs at Subpart K of 10 CFR Part 72. ZS will remain responsible for complying with the Subpart K regulations until the planned transfer of ownership to Exelon. At that point Exelon will assume responsibility for complying with the Subpart K regulations. The ZNPS ISFSI will remain in operation indefinitely, until such time as a deep geologic repository becomes available to accept spent fuel or other spent fuel disposal arrangements are made. The ZNPS ISFSI is enclosed by a separate security fence within the larger fenced 87-acre area. The ZNPS ISFSI is excluded from the Area of Potential Effects, which is described below.

*Definition of Area of Potential Effects*

The ZNPS site is approximately 331 acres (all owner controlled). The NRC considers the direct Area of Potential Effects (APE) to be the approximate 87-acre, fence-enclosed site that includes all of the major buildings of the ZNPS, including Units 1 and 2. Virtually all NRC licensed activities occurred within the direct APE. The NRC anticipates that most radiological remediation activities will occur within the direct APE. The NRC considers the remaining 244 acres to be an indirect APE.

The direct APE is zoned for industrial use in accordance with “The City of Zion, Illinois, Comprehensive Plan 2010.” In addition to Units 1 and 2, other major buildings and facilities include the turbine building, containment buildings, the spent fuel building, which are in the process of being decommissioned and dismantled. The switchyard, ZNPS ISFSI, parking areas, rail lines, and haul paths are to remain in-place at license termination. The direct APE will continue to be an industrial-zoned property for the foreseeable future. The ZNPS ISFSI is located within the direct APE but is excluded, as it will remain under NRC license and thus, under NRC’s regulatory jurisdiction. The indirect APE (244-acre parcel) consists mostly of open land. Other than radiological surveys, which may include small-scale soil sampling, no radiological remediation activities are expected to occur in the indirect APE.

*Illinois Historic Preservation Agency Determination of No Historic Properties Affected*

By letter dated August 24, 2015, the NRC initiated consultation with the Illinois Historic Preservation Agency (IHPA) in accordance with Section 106 of the National Historic Preservation Act (NHPA). In a letter dated September 16, 2015, the IHPA determined that “no historic properties are affected” by the proposed undertaking and as such, the IHPA concluded that it had no objection to the proposed undertaking being approved by the NRC. IHPA has assigned Log #017022414 to this matter.

The NRC concurs with the IHPA determination that “no historic properties are affected.” Please advise us if there are traditional cultural properties of interest to your tribe in the APEs. Please note that a traditional cultural property may, or may not, meet the definition of “historic property,” as that term is defined in 36 CFR 800.16(l). If your Tribe determines there are traditional cultural properties within the APE that it wants to bring to the attention of the NRC, please complete the Tribal Response Form (Enclosure 2), and return it to the NRC within 30 days of receipt of this letter.

If you have concerns about the confidentiality of information that you may submit, we are available to discuss such concerns and will take all measures, as prescribed by applicable law, to protect the confidentiality of such information. Please note that, according to NRC policy, correspondence provided to the NRC, including those provided by e-mail, may be made publicly available. Therefore, the NRC recommends that the Tribe avoid including any information in its submission that your Tribal officials do not want to be publicly disclosed (e.g., personal e-mail addresses or other personal contact information). If your Tribal officials do not wish for their personal e-mail addresses to be made public, please use an alternate e-mail address when corresponding with the NRC.

M. Dougherty

4

For additional information regarding the proposed action, ZS's license amendment application is publicly available from the NRC's Agency Wide Documents Access and Management System (ADAMS), which can be accessed online at: <http://www.nrc.gov/reading-rm/adams.html>. The ADAMS accession number for ZS's application is ML15005A336.

If you have any questions or comments on the proposed ZNPS LTP Project, or need any additional information regarding ZS's license amendment application, please contact Mr. John Hickman by telephone at (301) 415-3017 or via email at: [John.HickmanNMSS@nrc.gov](mailto:John.HickmanNMSS@nrc.gov). For information about the NHPA Section 106 process for this project, please contact Ms. Jessie Muir-Quintero by telephone at (301) 415-7476, or via email at: [Jessie.Muir-Quintero@nrc.gov](mailto:Jessie.Muir-Quintero@nrc.gov).

Sincerely,

*/RA/*

Craig G. Erlanger, Acting Director  
Division of Fuel Cycle Safety, Safeguards,  
and Environmental Review  
Office of Nuclear Material Safety  
and Safeguards

Docket Nos.: 50-295  
50-304

Enclosures:

1. Map of ZNPS Location
2. Tribal Response Form

cc w/o encls.:

Mr. Gerard Van Noordennen, ZS  
Mr. Edmore Green  
Sac and Fox Nation of Missouri

For additional information regarding the proposed action, ZS's license amendment application is publicly available from the NRC's Agency Wide Documents Access and Management System (ADAMS), which can be accessed online at: <http://www.nrc.gov/reading-rm/adams.html>. The ADAMS accession number for ZS's application is ML15005A336.

If you have any questions or comments on the proposed ZNPS LTP Project, or need any additional information regarding ZS's license amendment application, please contact Mr. John Hickman by telephone at (301) 415-3017 or via email at: [John.HickmanNMSS@nrc.gov](mailto:John.HickmanNMSS@nrc.gov). For information about the NHPA Section 106 process for this project, please contact Ms. Jessie Muir-Quintero by telephone at (301) 415-7476, or via email at: [Jessie.Muir-Quintero@nrc.gov](mailto:Jessie.Muir-Quintero@nrc.gov).

Sincerely,

*/RA/*

Craig G. Erlanger, Acting Director  
Division of Fuel Cycle Safety, Safeguards,  
and Environmental Review  
Office of Nuclear Material Safety  
and Safeguards

Docket Nos.: 50-295  
50-304

Enclosures:

- 1. Map of ZNPS Location
- 2. Tribal Response Form

cc w/o encls.:

Mr. Gerard Van Noordennen, ZS  
Mr. Edmore Green  
Sac and Fox Nation of Missouri

**DISTRIBUTION:**

APersinko                      BWatson

**ML15203A207**

|             |                    |               |           |
|-------------|--------------------|---------------|-----------|
| <b>OFC</b>  | FCSE/ERB           | FCSE/ERB      | DUWP/RDB  |
| <b>NAME</b> | ABjornsen          | AWalker-Smith | JHickman  |
| <b>DATE</b> | 12/03/15           | 12/02/15      | 12/11/15  |
| <b>OFC</b>  | OGC                | FCSE/ERB      | NMSS/FCSE |
| <b>NAME</b> | APessin            | LChang        | CErlanger |
| <b>DATE</b> | 02/05/16 via email | 1/6/16        | 02/02/16  |

**OFFICIAL RECORD COPY**