

August 24, 2015

Ms. Rachel Leibowitz  
Review and Compliance Division  
Illinois Historic Preservation Agency  
313 South 6th Street  
Springfield, IL 62701

SUBJECT: INITIATION OF NATIONAL HISTORIC PRESERVATION ACT SECTION 106  
CONSULTATION FOR THE U.S. NUCLEAR REGULATORY COMMISSION'S  
PROPOSED APPROVAL OF THE LICENSE TERMINATION PLAN FOR THE  
ZION NUCLEAR POWER STATION

Dear Ms. Leibowitz:

The U.S. Nuclear Regulatory Commission (NRC) wishes to initiate consultation with your office under Section 106 of the National Historic Preservation Act (NHPA) in regard to an application the NRC received on December 19, 2014, from its licensee, Zion Solutions, LLC (ZS). ZS is the owner of the Zion Nuclear Power Station (ZNPS), 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, the two reactor units at the site. ZS has submitted a license amendment application to the NRC requesting the NRC's approval of its license termination plan (LTP) for ZNPS, Units 1 and 2. The proposed undertaking is the NRC's approval of the LTP.

The NRC issued operating licenses for both units 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). 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<sup>1</sup> of both units. All spent fuel<sup>2</sup> has been removed from the ZNPS spent fuel pool and ZS completed the final transfer in

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<sup>1</sup> The term "decommission" is defined as the removal of "a facility or site safely from service," and the reduction in "residual radioactivity" to a level that permits either an unrestricted or restricted release of the property and termination of the applicable NRC license (see 10 CFR 50.2, definition of "Decommission"). The NRC's criteria for unrestricted release and restricted release are set forth in 10 CFR 20.1402 and 20.1403, respectively. The NRC defines the term "residual radioactivity" as "radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control" (10 CFR 20.1003, definition of "residual radioactivity").

<sup>2</sup> The NRC defines "spent fuel" as "fuel that has been withdrawn from a nuclear reactor following irradiation, has undergone at least 1 year's decay since being used as a source of energy in a power reactor, and has not been chemically separated into its constituent elements by reprocessing. Spent fuel includes the special nuclear material, byproduct material, source material, and other radioactive materials associated with fuel assemblies" (see 10 CFR 72.3, definition of "Spent Nuclear Fuel or Spent Fuel").

January 2015. ZS now stores the spent fuel assemblies in large steel cylinder casks located at the ZNPS independent spent fuel storage installation (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 steel cylinder cask provides safe containment of the spent fuel assemblies. Each cask is surrounded by additional steel, concrete, or other material to provide radiation shielding to workers and members of the public. The applicable NRC regulation defines an ISFSI as, "a complex designed and constructed for the interim storage of spent nuclear fuel ... and other radioactive materials associated with spent fuel."<sup>3</sup> The ISFSI consists of the spent fuel storage casks, a large cement pad upon which casks are placed, and other supporting infrastructure (e.g., a security fence, guard shack, radiation monitoring equipment, etc.).

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).

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 locations for the ZNPS site). The ZNPS site is located at longitude 87 degrees 48.1 minutes west and latitude 42 degrees 26.8 minutes north. The ZNPS site occupies portions of Sections 22, 23, 26, and 27 in Township 46 North, Range 23 East. 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 ISFSI are located (Enclosure 2 is a map showing the main plant structures and the boundaries of the ZNPS site); ZS refers to the 87 acre, fence-enclosed area as a "Radiologically-Restricted Area."

### *Proposed Undertaking*

The NRC's mission is to license and regulate the Nation's civilian use of radioactive materials to protect public health and safety, promote the common defense and security, and protect the environment.<sup>4</sup> Please note that the NRC does not control any real property and has no interest in those properties owned or otherwise controlled by its licensees. Similarly, the NRC has no land management authority over such sites.

ZS submitted the LTP in accordance with NRC regulation 10 CFR 50.82(a)(9).<sup>5</sup> The NRC, when it approves an LTP, approves only: (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

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<sup>3</sup> 10 CFR 72.3 (definition of "Independent spent fuel storage installation or ISFSI").

<sup>4</sup> The NRC's organic statutory authority is the Atomic Energy Act of 1954, as amended. 42 U.S.C. 2011 *et seq.*

<sup>5</sup> The criteria for NRC approval of the LTP is set forth in 10 CFR 50.82(a)(10).

adequacy of the design of the final survey to verify that the release criteria have been met.<sup>6</sup> Although 10 CFR 50.82(a)(9) requires the licensee to identify remaining dismantlement activities in its LTP, the NRC's approval or disapproval of the LTP does not control the licensee's demolition or dismantlement of any buildings or structures.<sup>7</sup> In accordance with the NRC's 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 radiation survey, that it has met the radiological release criteria of 10 CFR 20.1402. Please note that the NRC considers the actual termination of the operating licenses itself, as opposed to the approval of the LTP, to be a ministerial action, with no further NHPA Section 106 review.

### *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. 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 which point, Exelon will assume that responsibility. 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 (APE)*

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, the switchyard, parking areas, rail lines, and haul paths. 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.

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<sup>6</sup> See NRC's guidance document, NUREG-1757, Vol. 2, Rev. 1, "Consolidated Decommissioning Guidance," Appendix O, O-17. The statements of consideration, or preamble, for the NRC's final rule that amended 10 CFR 50.82 also describe the purpose of the LTP. 61 Fed. Reg. 39278, 39284 and 39289 (July 29, 1996).

<sup>7</sup> See 61 Fed. Reg. at 39289.

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.

#### *Tribal Consultation*

The NRC staff collects information to facilitate the identification of historic properties, including those that may be of religious and cultural significance to Native American tribes. Accordingly, the NRC staff is identifying tribes who may wish to consult with the NRC on this undertaking. The NRC staff intends to contact the tribes contained on the *County Listing of the Tribes' Ancestral Homelands and Territory in the State of Illinois (for Lake County)* that Mr. Halpin of your office sent to my staff on July 15, 2015.

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 this undertaking, or need any additional information regarding ZS's license amendment application, please contact Mr. John Hickman by telephone at 301-415-3017 or via e-mail at [John.Hickman@nrc.gov](mailto:John.Hickman@nrc.gov). For information about the NHPA Section 106 process for this project, please contact Mr. Alan Bjornsen by telephone at 301-415-6925, or via e-mail at [Alan.Bjornsen@nrc.gov](mailto:Alan.Bjornsen@nrc.gov).

Sincerely,

**/RA CErlanger for/**

Marissa G. Bailey, 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. Owner Controlled Area

cc: G. Van Noordennen, ZS  
A. Martin, Director, IHPA  
D. Halpin – CRM, IHPA

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cc: G. Van Noordennen, ZS  
A. Martin, Director, IHPA  
D. Halpin – CRM, IHPA

DISTRIBUTION: J. Hickman      KJamerson

**ML15229A136**

<b>OFC</b>	FCSE/ERB	FCSE/ERB	OGC
<b>NAME</b>	ABjornsen	DMiller for AWalker-Smith	APessin (NLO)
<b>DATE</b>	7/29/15	8/19/15	8/10/15
<b>OFC</b>	FCSE/ERB	NMSS/FCSE	
<b>NAME</b>	LChang	CErlanger for MBailey	
<b>DATE</b>	8/20/15	8/24/15	

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