



JUL 31 2013

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Serial No. 13-390
LIC/JG/R0
Docket No.: 50-305
License No.: DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
REQUEST FOR EXEMPTIONS FROM PORTIONS OF 10 CFR 50.47 AND 10 CFR 50,
APPENDIX E

Pursuant to 10 CFR 50.12, Dominion Energy Kewaunee, Inc. (DEK) requests exemptions from portions of 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV, for Kewaunee Power Station (KPS). The requested exemptions would allow DEK to reduce emergency planning requirements and subsequently revise the KPS Emergency Plan consistent with the permanently defueled condition of the station.

By letter dated February 25, 2013 (Reference 1), DEK submitted a certification to the NRC indicating its intention to permanently cease power operations at KPS on May 7, 2013, pursuant to 10 CFR 50.82(a)(1)(i). On May 14, 2013, DEK submitted a certification of permanent removal of fuel from the reactor vessel (Reference 2) pursuant to 10 CFR 50.82(a)(1)(ii). Upon docketing of these certifications, the 10 CFR Part 50 license for KPS no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

The requested exemptions are permissible under 10 CFR 50.12 because they will not present an undue risk to the public health and safety, and application of the regulations in this particular circumstance is not necessary to achieve the underlying purpose of the rules. More specifically, application of the portions of the regulations from which exemptions are sought is not necessary to ensure adequate emergency response capability for KPS. Furthermore, continued application of these portions of the regulations from which exemptions are sought would impose a burden on DEK and the KPS Decommissioning Trust Fund by requiring continued implementation of unnecessary emergency response capability.

The exemption requests are contained in the attachment to this letter. DEK has performed analyses which show that, within 17 months after shutdown, the spent fuel in the spent fuel pool will have decayed to the extent that the requested exemptions may be implemented at KPS without any additional compensatory actions. Since KPS was shutdown on May 7, 2013, "17 months after shutdown" will occur on October 7, 2014. As noted during a June 19, 2013 meeting with NRC staff to discuss decommissioning activities, DEK plans to submit a revised emergency plan by October 2013, containing a permanently defueled emergency action level scheme, for NRC review and approval

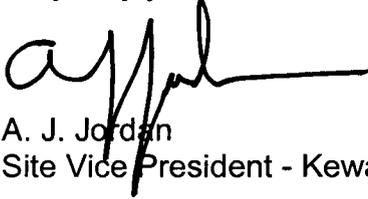
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pursuant to 10 CFR 50.54(q)(4) and 10 CFR 50, Appendix E, Section IV.B.2. The proposed emergency plan revision will be based on the exemptions requested herein.

DEK requests approval of these exemption requests by July 31, 2014. Approval of these exemptions by July 31, 2014 will allow DEK adequate time to implement changes to the EP plan and emergency response organization by the end of October 2014.

Please contact Mr. Jack Gadzala at 920-388-8604 if you have any questions or require additional information.

Very truly yours,



A. J. Jordan
Site Vice President - Kewaunee Power Station

Attachment:

1. Request for Exemptions from Portions of 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV

References:

1. Letter from D. G. Stoddard (DEK) to NRC Document Control Desk, "Certification of Permanent Cessation of Power Operations," dated February 25, 2013. [ADAMS Accession No. ML13058A065]
2. Letter from D. G. Stoddard (DEK) to NRC Document Control Desk, "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013. [ADAMS Accession No. ML13135A209]

Commitments made by this letter: None

cc: Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road
Suite 210
Lisle, IL 60532-4352

Mr. Karl D. Feintuch
Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop O8-D15
11555 Rockville Pike
Rockville, MD 20852-2738

Mr. Theodore Smith
Project Manager
U.S. Nuclear Regulatory Commission
Two White Flint North, Mail Stop O8-F5
11555 Rockville Pike
Rockville, MD 20852-2738

NRC Senior Resident Inspector
Kewaunee Power Station

ATTACHMENT 1

**REQUEST FOR EXEMPTIONS FROM PORTIONS OF 10 CFR 50.47(b),
10 CFR 50.47(c)(2), AND 10 CFR 50, APPENDIX E, SECTION IV**

**KEWAUNEE POWER STATION
DOMINION ENERGY KEWAUNEE, INC.**

Kewaunee Power Station
Request for Exemptions from Portions of 10 CFR 50.47(b),
10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV

I. DESCRIPTION

Pursuant to 10 CFR 50.12 "Specific exemptions," Dominion Energy Kewaunee, Inc. (DEK) requests exemptions from the following:

- Certain standards in 10 CFR 50.47(b) regarding onsite and offsite emergency response plans for nuclear power reactors;
- Certain requirements of 10 CFR 50.47(c)(2) to establish plume exposure and ingestion pathway emergency planning zones for nuclear power plants; and
- Certain requirements of 10 CFR 50, Appendix E, Section IV, which establishes the elements that make up the content of emergency plans.

The requested exemptions would allow DEK to reduce emergency planning requirements and subsequently revise the Kewaunee Power Station (KPS) Emergency Plan to reflect the permanently defueled condition of the station. The current 10 CFR Part 50 regulatory requirements for emergency planning (developed for operating reactors) ensure safety at KPS. However, because the station is permanently shutdown, defueled, and in a state of decommissioning, some of these requirements exceed what is necessary to protect and no longer substantially contribute to, public safety.

By letter dated February 25, 2013 (Reference 1), DEK submitted a certification to the NRC indicating its intention to permanently cease power operations at KPS on May 7, 2013, pursuant to 10 CFR 50.82(a)(1)(i). On May 14, 2013, DEK submitted a certification of permanent removal of fuel from the reactor vessel (Reference 2) pursuant to 10 CFR 50.82(a)(1)(ii). Upon docketing of these certifications, the 10 CFR Part 50 license for KPS no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

In order to allow a reduction in emergency planning requirements which corresponds to the permanently defueled condition, exemptions from portions of 10 CFR 50.47(b), 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV, are needed. DEK has performed analyses which show that, within 17 months after shutdown, the spent fuel in the spent fuel pool will have decayed to the extent that the requested exemptions may be implemented at KPS without any additional compensatory actions. Since KPS was shutdown on May 7, 2013, "17 months after shutdown" will occur on October 7, 2014. DEK plans to submit a revised emergency plan by October 2013, containing a permanently defueled emergency action level scheme, for NRC review and approval pursuant to 10 CFR 50.54(q)(4) and 10 CFR 50, Appendix E, Section IV.B.2. The proposed emergency plan revision will be based on the exemptions requested herein. DEK requests approval of these exemption requests by July 31, 2014. Approval of

these exemptions by July 31, 2014 will allow DEK adequate time to implement changes to the EP plan and emergency response organization by the end of October 2014.

A. Exemptions Requested from 10 CFR 50.47

Table 1 below lists the pertinent portions of 10 CFR 50.47(b) and 10 CFR 50.47(c)(2) in the left column. The specific portion of the requirement within the regulation from which exemption is being requested is emphasized (bold/underlined). The basis for the exemption from the specific portion of each requirement is provided in the corresponding row of the column on the right.

TABLE 1
Exemptions Requested from 10 CFR 50.47

Regulation (portion being exempted shown emphasized)	Basis for Requested Exemption
10 CFR 50.47(b) - The onsite <u>and, except as provided in paragraph (d) of this section, offsite</u> emergency response plans for nuclear power reactors must meet the following standards:	Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the Environmental Protection Agency (EPA) Protective Action Guides at the exclusion area boundary (EAB). In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary.
10 CFR 50.47(b)(1) - Primary responsibilities for emergency response by the nuclear facility licensee <u>and by State and local organizations within the Emergency Planning Zones</u> have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.	Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, there will no longer be a need for Emergency Planning Zones.

<p style="text-align: center;">Regulation (portion being exempted shown emphasized)</p>	<p style="text-align: center;">Basis for Requested Exemption</p>
<p>10 CFR 50.47(b)(3) - Arrangements for requesting and effectively using assistance resources have been made, <u>arrangements to accommodate State and local staff at the licensee's Emergency Operations Facility have been made,</u> and other organizations capable of augmenting the planned response have been identified.</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no response by offsite agencies to an Emergency Operations Facility (EOF). An EOF will no longer be necessary or maintained. Discontinuing offsite emergency planning activities and reducing the scope of onsite emergency planning is acceptable in view of the greatly reduced offsite radiological consequences associated with the current state of the permanently defueled plant.</p>
<p>10 CFR 50.47(b)(4) - A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, <u>and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite response measures will no longer be necessary.</p>
<p>10 CFR 50.47(b)(5) - Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations <u>and the public</u> has been established; <u>and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, no early notification of the public would be required and the plume exposure pathway EPZ will no longer be necessary.</p>

<p style="text-align: center;">Regulation (portion being exempted shown emphasized)</p>	<p style="text-align: center;">Basis for Requested Exemption</p>
<p>10 CFR 50.47(b)(6) - Provisions exist for prompt communications among principal response organizations to emergency personnel <u>and to the public.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Provisions for prompt communications with the public will no longer be necessary since there will be no need for the public to take any protective actions in the event of an emergency at KPS.</p>
<p>10 CFR 50.47(b)(7) - <u>Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. There will be no need for the public to take any protective actions in the event of an emergency at KPS. Therefore, there will no longer be any need for information to be made available to the public about how they will be notified and what their initial protective actions should be.</p>

<p style="text-align: center;">Regulation (portion being exempted shown emphasized)</p>	<p style="text-align: center;">Basis for Requested Exemption</p>
<p>10 CFR 50.47(b)(9) - <u>Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, assessing and monitoring of offsite consequences of radiological emergency conditions will no longer be required.</p> <p>Since a need for monitoring and assessing will no longer exist, DEK no longer intends to maintain the capability to deploy field teams for assessing and monitoring offsite radiological conditions.</p>
<p>10 CFR 50.47(b)(10) - <u>A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, protective actions for the public will no longer be necessary and the emergency planning zones will no longer be necessary or exist. The requirement to develop and update evacuation time estimates regards an offsite activity. Accordingly, evacuation time estimates will no longer be needed and thus will no longer be updated. Discontinuing offsite emergency planning activities and reducing the scope of onsite emergency planning is acceptable in view of the greatly reduced offsite radiological consequences associated with the current state of the permanently defueled plant.</p>

<p style="text-align: center;">Regulation (portion being exempted shown emphasized)</p>	<p style="text-align: center;">Basis for Requested Exemption</p>
<p>10 CFR 50.47(b)(14) - Periodic <u>exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic</u> drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of <u>exercises or</u> drills are (will be) corrected.</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. There will be no need for the public to take any protective actions in the event of an emergency at KPS. Therefore, participation by offsite entities will no longer be necessary and associated exercises will no longer need to be conducted.</p> <p>Per NUREG-0654, "an exercise shall include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario requiring response." The scope of an exercise scenario will no longer be required. Performance of drills is thus sufficient to maintain and assess the capability of the emergency response organization to properly perform activities.</p>
<p>10 CFR 50.47(c)(2) - <u>Generally, the plume exposure pathway EPZ for nuclear power plants shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.</u> The size of the EPZs also may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW thermal. <u>The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume and ingestion pathway emergency planning zones will no longer be necessary or exist.</p>

B. Exemptions Requested from 10 CFR 50, Appendix E

Table 2 below lists the pertinent portions of 10 CFR 50, Appendix E, Section IV, in the left column. The specific portion of the requirement within the regulation from which exemption is being requested is emphasized (bold/underlined). The basis for the exemption from the specific portion of each requirement is provided in the corresponding row of the column on the right.

TABLE 2
Exemptions Requested from 10 CFR 50, Appendix E

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.1 - The applicant's emergency plans shall contain, but not necessarily be limited to, information needed to demonstrate compliance with the elements set forth below, <i>i.e.</i>, organization for coping with radiological emergencies, assessment actions, activation of emergency organization, notification procedures, emergency facilities and equipment, training, maintaining emergency preparedness, recovery, and onsite protective actions during hostile action. In addition, the emergency response plans submitted by an applicant for a nuclear power reactor operating license under this part, or for an early site permit (as applicable) or combined license under 10 CFR part 52, shall contain information needed to demonstrate compliance with the standards described in § 50.47(b), and they will be evaluated against those standards.</p>	<p>Following docketing of its "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013, KPS became a permanently shutdown facility with spent fuel stored in the spent fuel pool and ISFSI. In the EP Final Rule (76 FR 72596, Nov. 23, 2011), the Commission defined "hostile action" as, in part, an act directed toward a nuclear power plant or its personnel. The NRC excluded non-power reactors (NPR) from the definition of "hostile action" at that time because an NPR is not a nuclear power plant and a regulatory basis had not been developed to support the inclusion of NPR in that definition. Likewise, spent fuel pools and ISFSIs are not a nuclear power plant.</p> <p>The following similarities between the KPS facility and NPRs show that the KPS facility should be treated in a similar fashion as an NPR. Similar to NPRs, KPS poses lower radiological risks to the public from accidents than do power reactors because: (1) KPS is a permanently shutdown facility (with fuel stored in the spent fuel pool and ISFSI) and no longer generates fission products; 2) Fuel stored in the KPS SFP has lower decay heat, resulting in lower risk of fission product release in the event of a non-credible boil off or draindown event; and 3) no credible accident at KPS will result in radiological releases requiring offsite protective actions. NPRs have lower decay heat associated with a lower risk of core melt and fission product release in a loss-of-coolant accident. Likewise, KPS has a low likelihood of a credible accident resulting in radiological releases requiring offsite protective actions.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.2 - <u>This nuclear power reactor license applicant shall also provide an analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations, using the most recent U.S. Census Bureau data as of the date the applicant submits its application to the NRC.</u></p>	<p>This regulation promulgates an initial requirement to an applicant regarding the content of a licensing application for a power reactor as of the date the initial license application was submitted. As such, this regulation would have been met during the KPS licensing process and is no longer germane to KPS.</p> <p>Additionally, revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway EPZ will no longer be necessary. Evacuation time estimates and associated protective actions within the plume exposure pathway EPZ will also not be needed.</p>
<p>§ IV.3 - <u>Nuclear power reactor licensees shall use NRC approved evacuation time estimates (ETEs) and updates to the ETEs in the formulation of protective action recommendations and shall provide the ETEs and ETE updates to State and local governmental authorities for use in developing offsite protective action strategies.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway EPZ will no longer be necessary. Evacuation time estimates and associated protective actions within the plume exposure pathway EPZ will also not be needed.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p><u>§ IV.4 - Within 365 days of the later of the date of the availability of the most recent decennial census data from the U.S. Census Bureau or December 23, 2011, nuclear power reactor licensees shall develop an ETE analysis using this decennial data and submit it under § 50.4 to the NRC. These licensees shall submit this ETE analysis to the NRC at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway EPZ will no longer be necessary. Evacuation time estimates and associated protective actions within the plume exposure pathway EPZ will also not be needed.</p>
<p><u>§ IV.5 - During the years between decennial censuses, nuclear power reactor licensees shall estimate EPZ permanent resident population changes once a year, but no later than 365 days from the date of the previous estimate, using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. These licensees shall maintain these estimates so that they are available for NRC inspection during the period between decennial censuses and shall submit these estimates to the NRC with any updated ETE analysis.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway EPZ will no longer be necessary. Evacuation time estimates and associated protective actions within the plume exposure pathway EPZ will also not be needed.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p><u>§ IV.6 - If at any time during the decennial period, the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ to increase by 25 percent or 30 minutes, whichever is less, from the nuclear power reactor licensee's currently NRC approved or updated ETE, the licensee shall update the ETE analysis to reflect the impact of that population increase. The licensee shall submit the updated ETE analysis to the NRC under § 50.4 no later than 365 days after the licensee's determination that the criteria for updating the ETE have been met and at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway EPZ will no longer be necessary. Evacuation time estimates and associated protective actions within the plume exposure pathway EPZ will also not be needed.</p>
<p><u>§ IV.A.3 - A description, by position and function to be performed, of the licensee's headquarters personnel who will be sent to the plant site to augment the onsite emergency organization.</u></p>	<p>The level of emergency response required by the KPS Defueled Station Emergency Plan will no longer require response by the headquarters personnel.</p>
<p>§ IV.A.4 - Identification, by position and function to be performed, of persons within the licensee organization who will be responsible for making <u>offsite</u> dose projections, and a description of how these projections will be made and the results transmitted to State and local authorities, NRC, and other appropriate governmental entities.</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, "offsite" dose projections will no longer be necessary.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.A.5 - <u>Identification, by position and function to be performed, of other employees of the licensee with special qualifications for coping with emergency conditions that may arise. Other persons with special qualifications, such as consultants, who are not employees of the licensee and who may be called upon for assistance for emergencies shall also be identified. The special qualifications of these persons shall be described.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, individuals with special qualifications for coping with radiological events will no longer be needed to assist KPS emergency response personnel.</p>
<p>§ IV.A.7 - <u>By June 23, 2014, identification of, and a description of the assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site. For purposes of this appendix, "hostile action" is defined as an act directed toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary (refer to 10 CFR 50.47(b) exemption) and there will be no need to include a description of the assistance expected from offsite agencies.</p> <p>Requiring DEK to provide a description of the assistance expected from appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, in light of the low risk of an emergency necessitating offsite assistance and the information already provided by DEK in its emergency plan, would be an unnecessary burden. Justification from the requirements in Appendix E related to a "hostile action" is provided in the Basis for the requested exemption from § IV.1 above.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.A.8 - <u>Identification of the State and/or local officials responsible for planning for, ordering, and controlling appropriate protective actions, including evacuations when necessary.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans and protective actions will no longer be necessary.</p>
<p>§ IV.A.9 - <u>By December 24, 2012, for nuclear power reactor licensees, a detailed analysis demonstrating that onshift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.</u></p>	<p>Upon docketing of the 10 CFR 50.82(a)(1)(ii) certification, the 10 CFR Part 50 license for KPS no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2). In the EP Final Rule, the NRC agreed that the staffing analysis requirement was not necessary for non-power reactor licensees due to the small staffing levels required to operate the facility. By analogy, this staffing analysis is not needed for KPS.</p>
<p>§ IV.B.1 - The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within <u>and outside</u> the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite <u>and offsite</u> monitoring. <u>By June 20, 2012, for nuclear power reactor licensees, these action levels must include hostile action that may adversely affect the nuclear power plant.</u> The initial emergency action levels shall be discussed and agreed on by the applicant or licensee and state and local governmental authorities, and approved by the NRC. <u>Thereafter, emergency action levels shall be reviewed with the State and local governmental authorities on an annual basis.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans for local government authorities will no longer be necessary.</p> <p>Since offsite emergency plans will no longer be necessary, the review of emergency action levels annually with State and local authorities provides little benefit and likewise will no longer be required to ensure public health and safety.</p> <p>Justification from the requirements in Appendix E related to a "hostile action" is provided in the Basis for the requested exemption from § IV.1 above.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.C.1 - The entire spectrum of emergency conditions that involve the alerting or activating of progressively larger segments of the total emergency organization shall be described. The communication steps to be taken to alert or activate emergency personnel under each class of emergency shall be described. Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be noted for such agencies. The emergency classes defined shall include: (1) Notification of unusual events, (2) alert, (3) site area emergency, and (4) general emergency. These classes are further discussed in NUREG-0654/FEMA-REP-1.</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite radiation monitoring will no longer be needed. In the permanently defueled condition, containment pressure sensors and the Emergency Core Cooling System are no longer required; and Site Area Emergency and General Emergency are no longer credible emergency classifications.</p> <p>Since the need for offsite monitoring and assessing will no longer exist, DEK no longer intends to maintain the capability to deploy field teams for assessing and monitoring offsite radiological conditions.</p>
<p>§ IV.C.2 - By June 20, 2012, nuclear power reactor licensees shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level. Licensees shall not construe these criteria as a grace period to attempt to restore plant conditions to avoid declaring an emergency action due to an emergency action level that has been exceeded. Licensees shall not construe these criteria as preventing implementation of response actions deemed by the licensee to be necessary to protect public health and safety provided that any delay in declaration does not deny the State and local authorities the opportunity to implement measures necessary to protect the public health and safety.</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans and public notification will no longer be necessary.</p> <p>DEK will maintain the capability to assess, classify, and declare an emergency condition. In the permanently defueled condition, the rapidly developing scenarios associated with events initiated during reactor power operation are no longer credible. The consequences resulting from the only remaining events (e.g., fuel handling accident) develop over a significantly longer period. As such, the 15 minute requirement to classify and declare an emergency is unnecessarily restrictive.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.D.1 - Administrative and physical means for notifying local, State, and Federal officials and agencies and agreements reached with these officials and agencies <u>for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary,</u> shall be described. This description shall include identification <u>of the appropriate officials, by title and agency,</u> of the State and local government agencies <u>within the EPZs.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans and public notification will no longer be necessary. The KPS defueled station emergency plan will identify the state and local agencies to be notified.</p> <p>The notification system (i.e. the Nuclear Accident Reporting System) is a dedicated and coded phone system that terminates in the response centers of pertinent federal, state, and local agencies (e.g., NRC ENS line, police emergency dispatch center line, etc.). This ensures that the appropriate agency officials are notified (via each agency's internal processes). Therefore, the title of the person receiving the notification within the agency will no longer be necessary.</p>
<p>§ IV.D.2 - <u>Provisions shall be described for yearly dissemination to the public within the plume exposure pathway EPZ of basic emergency planning information, such as the methods and times required for public notification and the protective actions planned if an accident occurs, general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency. Signs or other measures shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an accident occurs.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans and public information will no longer be necessary.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.D.3 - A licensee shall have the capability to notify responsible State and local governmental agencies <u>within 15 minutes</u> after declaring an emergency. <u>The licensee shall demonstrate that the appropriate governmental authorities have the capability to make a public alerting and notification decision promptly on being informed by the licensee of an emergency condition. Prior to initial operation greater than 5 percent of rated thermal power of the first reactor at a site, each nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ. The design objective of the prompt public alert and notification system shall be to have the capability to essentially complete the initial alerting and initiate notification of the public within the plume exposure pathway EPZ within about 15 minutes. The use of this alerting and notification capability will range from immediate alerting and notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events where there is substantial time available for the appropriate governmental authorities to make a judgment whether or not to activate the public alert and notification system. The alerting and notification capability shall additionally include administrative and physical means for a backup method of public alerting and notification capable of being used in the event the primary method of alerting and notification is unavailable during an emergency to alert or notify all or portions of the plume exposure pathway EPZ population. The backup method shall have the capability to alert and notify the public within the plume exposure pathway EPZ, but does not need to meet the 15-minute design objective for the primary prompt public alert and notification system. When there is a decision to activate the alert and notification system, the appropriate governmental authorities will determine whether to activate the entire alert and notification system simultaneously or in a graduated or staged manner. The responsibility for activating such a public alert and notification system shall remain with the appropriate governmental authorities.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB.</p> <p>DEK will continue to make notifications to the State of Wisconsin and to the local county (Kewaunee). The timeliness goal will be to make notification to the State and county within 60 minutes of declaration of an event.</p> <p>In the permanently defueled condition, the rapidly developing scenarios associated with events initiated during reactor power operation are no longer credible. The consequences resulting from the only remaining events (e.g., fuel handling accident) develop over a significantly longer period. As such, a 15 minute notification requirement is unnecessarily restrictive. Sixty minutes provides a reasonable amount of time to provide notification to state and local governmental agencies since there will be no need for the State to implement any protective actions. This notification timeliness is also consistent with the notification requirement to the NRC Operations Center, contained in 10 CFR 50.72(a)(1)(i), for the declaration of an emergency class.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.D.4 - <u>If FEMA has approved a nuclear power reactor site's alert and notification design report, including the backup alert and notification capability, as of December 23, 2011, then the backup alert and notification capability requirements in Section IV.D.3 must be implemented by December 24, 2012. If the alert and notification design report does not include a backup alert and notification capability or needs revision to ensure adequate backup alert and notification capability, then a revision of the alert and notification design report must be submitted to FEMA for review by June 24, 2013, and the FEMA-approved backup alert and notification means must be implemented within 365 days after FEMA approval. However, the total time period to implement a FEMA-approved backup alert and notification means must not exceed June 22, 2015.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no need for public notification for the purpose of protection from a radioactive release.</p>
<p>§ IV.E.8.a.(i) - A licensee onsite <u>technical support center and an emergency operations</u> facility from which effective direction can be given and effective control can be exercised during an emergency;</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no response by offsite agencies to the Emergency Operations Facility (EOF). Thus, an EOF will no longer be maintained.</p> <p>An onsite facility (whether the control room or a facility similar to the technical support center) would continue to be maintained, from which effective control can be exercised during an emergency.</p>
<p>§ IV.E.8.a.(ii) - <u>For nuclear power reactor licensees, a licensee onsite operational support center;</u></p>	<p>In the permanently defueled condition, the rapidly developing scenarios associated with events initiated during reactor power operation are no longer credible. As such, an onsite operational support center will no longer be needed. A single onsite facility (whether the control room or a facility similar to the technical support center) would continue to be maintained, from which effective control can be exercised during an emergency.</p>

Regulation (10 CFR 50, Appendix E) <i>(portion being exempted shown emphasized)</i>	Basis for Requested Exemption
<p>§ IV.E.8.b - <u>For a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, either a facility located between 10 miles and 25 miles of the nuclear power reactor site(s), or a primary facility located less than 10 miles from the nuclear power reactor site(s) and a backup facility located between 10 miles and 25 miles of the nuclear power reactor site(s). An emergency operations facility may serve more than one nuclear power reactor site. A licensee desiring to locate an emergency operations facility more than 25 miles from a nuclear power reactor site shall request prior Commission approval by submitting an application for an amendment to its license. For an emergency operations facility located more than 25 miles from a nuclear power reactor site, provisions must be made for locating NRC and offsite responders closer to the nuclear power reactor site so that NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site. Provisions for locating NRC and offsite responders closer to a nuclear power reactor site that is more than 25 miles from the emergency operations facility must include the following:</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>
<p>§ IV.E.8.b.(1) - <u>Space for members of an NRC site team and Federal, State, and local responders;</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.E.8.b.(2) - <u>Additional space for conducting briefings with emergency response personnel;</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>
<p>§ IV.E.8.b.(3) - <u>Communication with other licensee and offsite emergency response facilities;</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>
<p>§ IV.E.8.b.(4) - <u>Access to plant data and radiological information; and</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.E.8.b.(5) - <u>Access to copying equipment and office supplies;</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>
<p>§ IV.E.8.c - <u>By June 20, 2012, for a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, a facility having the following capabilities:</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>
<p>§ IV.E.8.c.(1) - <u>The capability for obtaining and displaying plant data and radiological information for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves;</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.E.8.c.(2) - <u>The capability to analyze plant technical information and provide technical briefings on event conditions and prognosis to licensee and offsite response organizations for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves; and</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>
<p>§ IV.E.8.c.(3) - <u>The capability to support response to events occurring simultaneously at more than one nuclear power reactor site if the emergency operations facility serves more than one site; and</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p><u>§ IV.E.8.d - For nuclear power reactor licensees, an alternative facility (or facilities) that would be accessible even if the site is under threat of or experiencing hostile action, to function as a staging area for augmentation of emergency response staff and collectively having the following characteristics: the capability for communication with the emergency operations facility, control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation, for use when onsite emergency facilities cannot be safely accessed during hostile action. The requirements in this paragraph 8.d must be implemented no later than December 23, 2014, with the exception of the capability for staging emergency response organization personnel at the alternative facility (or facilities) and the capability for communications with the emergency operations facility, control room, and plant security, which must be implemented no later than June 20, 2012.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to an EOF and Joint Information Center (JIC). Thus, an EOF/JIC will no longer be necessary or be maintained.</p> <p>Following docketing of its "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013, KPS is a permanently shutdown facility with spent fuel stored in the spent fuel pool and ISFSI. In the EP Final Rule (76 FR 72596, Nov. 23, 2011), the Commission defined "hostile action" as, in part, an act directed toward a nuclear power plant or its personnel. The NRC excluded non-power reactors (NPR) from the definition of "hostile action" at that time because an NPR is not a nuclear power plant and a regulatory basis had not been developed to support the inclusion of NPR in that definition. Likewise, spent fuel pools and ISFSIs are not a nuclear power plant.</p> <p>The following similarities between the KPS facility and NPRs show that the KPS facility should be treated similarly to NPRs. Similar to NPRs, KPS poses lower radiological risks to the public from accidents than do power reactors because: (1) KPS is a permanently shutdown facility (with fuel stored in the spent fuel pool and ISFSI) and no longer generates fission products; 2) Fuel stored in the KPS SFP has lower decay heat, resulting in lower risk of fission product release in the event of a non-credible boil off or draindown event; and 3) no credible accident at KPS will result in radiological releases requiring offsite protective actions. NPRs have lower decay heat associated with a lower risk of core melt and fission product release in a loss-of-coolant accident. Likewise, KPS has a low likelihood of a credible accident resulting in radiological releases requiring offsite protective actions.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
§ IV.E.8.e - A licensee shall not be subject to the requirements of paragraph 8.b of this section for an existing emergency operations facility approved as of December 23, 2011;	Exemption from the requirements of paragraph 8.b of this section for KPS (an existing emergency operations facility approved as of December 23, 2011) is being requested as discussed previously. As a result, exemption from § IV.E.8.e becomes moot and an exemption for it is not requested. It is discussed herein only for clarity.
§ IV.E.9.a - Provision for communications with contiguous State/local governments <u>within the plume exposure pathway EPZ</u> . Such communications shall be tested monthly.	Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway EPZ will no longer exist. Contiguous State/local governments include the State of Wisconsin and Kewaunee County.
§ IV.E.9.c - Provision for communications among <u>the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility; and among</u> the nuclear facility, the principal State and local emergency operations centers, <u>and the field assessment teams</u> . Such communications systems shall be tested annually.	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway EPZ will no longer exist and offsite emergency response plans will no longer be necessary and there will be no response by offsite agencies to the EOF. An EOF will no longer be maintained.</p> <p>An onsite facility (whether the control room or a facility similar to the technical support center) would continue to be maintained, from which effective control can be exercised during an emergency.</p> <p>The need and deployment offsite field team for assessment is no longer necessary.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.E.9.d - Provisions for communications by the licensee with NRC Headquarters and the appropriate NRC Regional Office Operations Center from the nuclear power reactor <u>control room, the onsite technical support center, and the emergency operations</u> facility. Such communications shall be tested monthly.</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway EPZ will no longer exist and offsite emergency response plans will no longer be necessary and there will be no response by offsite agencies to the EOF. An EOF will no longer be maintained.</p> <p>An onsite facility (whether the control room or a facility similar to the technical support center) would continue to be maintained, from which effective control can be exercised during an emergency.</p>
<p>§ IV.F.1 – [The program to provide for: (a) The training of employees and exercising, by periodic drills, of emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and (b) The participation in the training and drills by other persons whose assistance may be needed in the event of a radiological emergency shall be described. This shall include a description of specialized initial training and periodic retraining programs to be provided to each of the following categories of emergency personnel:] <u>viii. Licensee's headquarters support personnel;</u></p>	<p>The level of emergency response required by the KPS Defueled Station Emergency Plan will not require response by the licensee's headquarters support personnel.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.1 - <u>In addition, a radiological orientation training program shall be made available to local services personnel; e.g., local emergency services/Civil Defense, local law enforcement personnel, local news media persons.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary. Local services personnel such as local law enforcement personnel and local news media persons no longer need radiological orientation training since they will not be called upon to respond to a radiological event.</p>
<p>§ IV.F.2 - The plan shall describe provisions for the conduct of emergency preparedness <u>exercises</u> as follows: <u>Exercises shall</u> test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, <u>test the public alert and notification system,</u> and ensure that emergency organization personnel are familiar with their duties.³</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB.</p> <p>There will be no need for the public to take any protective actions in the event of an emergency at KPS. Therefore, participation by offsite entities will no longer be necessary, public alert and notification system will no longer be required and associated exercises will no longer need to be conducted.</p> <p>Per NUREG-0654, "an exercise shall include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario requiring response." The scope of an exercise scenario will no longer be required. Performance of drills is thus sufficient to maintain and assess the capability of the emergency response organization to properly perform activities.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.2.a - <u>A full participation⁴ exercise which tests as much of the licensee, State, and local emergency plans as is reasonably achievable without mandatory public participation shall be conducted for each site at which a power reactor is located. Nuclear power reactor licensees shall submit exercise scenarios under § 50.4 at least 60 days before use in a full participation exercise required by this paragraph 2.a.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. There will be no need for the public to take any protective actions in the event of an emergency at KPS. Therefore, participation by offsite entities will no longer be necessary.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.2.b - Each licensee at each site shall conduct <u>a subsequent exercise of its onsite emergency plan every 2 years. Nuclear power reactor licensees shall submit exercise scenarios under § 50.4 at least 60 days before use in an exercise required by this paragraph 2.b. The exercise may be included in the full participation biennial exercise required by paragraph 2.c. of this section. In addition, the licensee shall take actions necessary to ensure that adequate emergency response capabilities are maintained during the interval between biennial exercises by conducting drills, including</u> at least one drill involving a combination of some of the principal functional areas of the licensee's onsite emergency response capabilities. The principal functional areas of emergency response include activities such as management and coordination of emergency response, accident assessment, event classification, notification of offsite authorities, assessment of the onsite <u>and offsite impact of radiological releases, protective action recommendation development, protective action decision making,</u> plant system repair and mitigative action implementation. During these drills, activation of all of the licensee's emergency response <u>facilities (Technical Support Center (TSC), Operations Support Center (OSC), and the Emergency Operations Facility (EOF))</u> would not be necessary, licensees would have the opportunity to consider accident management strategies, supervised instruction would be permitted, operating staff in all participating facilities would have the opportunity to resolve problems (success paths) rather than have controllers intervene, and the drills may focus on the onsite <u>exercise</u> training objectives.</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. There will be no need for the public to take any protective actions in the event of an emergency at KPS. Therefore, participation by offsite entities will no longer be necessary and associated exercises will no longer need to be conducted.</p> <p>Per NUREG-0654, "an exercise shall include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario requiring response." The scope of an exercise scenario will no longer be required. Performance of drills is thus sufficient to maintain and assess the capability of the emergency response organization to properly perform activities.</p> <p>Offsite emergency response plans will no longer be necessary and there will be no required response by offsite agencies to the EOF. An EOF will no longer be maintained.</p> <p>An onsite facility (whether the control room or a facility similar to the technical support center) would continue to be maintained, from which effective control can be exercised during an emergency.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.2.c - <u>Offsite plans for each site shall be exercised biennially with full participation by each offsite authority having a role under the radiological response plan. Where the offsite authority has a role under a radiological response plan for more than one site, it shall fully participate in one exercise every two years and shall, at least, partially participate in other offsite plan exercises in this period. If two different licensees each have licensed facilities located either on the same site or on adjacent, contiguous sites, and share most of the elements defining co-located licensees,⁶ then each licensee shall:</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. There will be no need for the public to take any protective actions in the event of an emergency at KPS. Therefore, participation by offsite entities will no longer be necessary and associated exercises will no longer need to be conducted.</p> <p>Per NUREG-0654, "an exercise shall include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario requiring response." The scope of an exercise scenario will no longer be required. Performance of drills is thus sufficient to maintain and assess the capability of the emergency response organization to properly perform activities.</p>
<p>§ IV.F.2.c.(1) - <u>Conduct an exercise biennially of its onsite emergency plan;</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the offsite full participation exercise will no longer be required.</p> <p>Per NUREG-0654, "an exercise shall include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario requiring response." The scope of an exercise scenario will no longer be required. Performance of drills is thus sufficient to maintain and assess the capability of the emergency response organization to properly perform activities.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.2.c.(2) - <u>Participate quadrennially in an offsite biennial full or partial participation exercise;</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the offsite full participation exercise will no longer be required.</p>
<p>§ IV.F.2.c.(3) - <u>Conduct emergency preparedness activities and interactions in the years between its participation in the offsite full or partial participation exercise with offsite authorities, to test and maintain interface among the affected State and local authorities and the licensee. Co-located licensees shall also participate in emergency preparedness activities and interaction with offsite authorities for the period between exercises;</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the offsite full participation exercise will no longer be required.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.2.c.(4) - <u>Conduct a hostile action exercise of its onsite emergency plan in each exercise cycle; and</u></p>	<p>Following docketing of its "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013, KPS is a permanently shutdown facility with spent fuel stored in the spent fuel pool and ISFSI. In the EP Final Rule (76 FR 72596, Nov. 23, 2011), the Commission defined "hostile action" as, in part, an act directed toward a nuclear power plant or its personnel. The NRC excluded non-power reactors (NPR) from the definition of "hostile action" at that time because an NPR is not a nuclear power plant and a regulatory basis had not been developed to support the inclusion of NPR in that definition. Likewise, spent fuel pools and ISFSIs are not a nuclear power plant.</p> <p>The following similarities between the KPS facility and NPRs show that the KPS facility should be treated similarly to NPRs. Similar to NPRs, KPS poses lower radiological risks to the public from accidents than do power reactors because: (1) KPS is a permanently shutdown facility (with fuel stored in the spent fuel pool and ISFSI) and no longer generates fission products; 2) Fuel stored in the KPS SFP has lower decay heat, resulting in lower risk of fission product release in the event of a non-credible boil off or draindown event; and 3) no credible accident at KPS will result in radiological releases requiring offsite protective actions. NPRs have lower decay heat associated with a lower risk of core melt and fission product release in a loss-of-coolant accident. Likewise, KPS has a low likelihood of a credible accident resulting in radiological releases requiring offsite protective actions.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.2.c.(5) - <u>Participate in an offsite biennial full or partial participation hostile action exercise in alternating exercise cycles.</u></p>	<p>Following docketing of its "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013, KPS is a permanently shutdown facility with spent fuel stored in the spent fuel pool and ISFSI. In the EP Final Rule (76 FR 72596, Nov. 23, 2011), the Commission defined "hostile action" as, in part, an act directed toward a nuclear power plant or its personnel. The NRC excluded non-power reactors (NPR) from the definition of "hostile action" at that time because an NPR is not a nuclear power plant and a regulatory basis had not been developed to support the inclusion of NPR in that definition. Likewise, spent fuel pools and ISFSIs are not a nuclear power plant.</p> <p>The following similarities between the KPS facility and NPRs show that the KPS facility should be treated similarly to NPRs. Similar to NPRs, KPS poses lower radiological risks to the public from accidents than do power reactors because: (1) KPS is a permanently shutdown facility (with fuel stored in the spent fuel pool and ISFSI) and no longer generates fission products; 2) Fuel stored in the KPS SFP has lower decay heat, resulting in lower risk of fission product release in the event of a non-credible boil off or draindown event; and 3) no credible accident at KPS will result in radiological releases requiring offsite protective actions. NPRs have lower decay heat associated with a lower risk of core melt and fission product release in a loss-of-coolant accident. Likewise, KPS has a low likelihood of a credible accident resulting in radiological releases requiring offsite protective actions.</p>
<p>§ IV.F.2.d - <u>Each State with responsibility for nuclear power reactor emergency preparedness should fully participate in the ingestion pathway portion of exercises at least once every exercise cycle. In States with more than one nuclear power reactor plume exposure pathway EPZ, the State should rotate this participation from site to site. Each State with responsibility for nuclear power reactor emergency preparedness should fully participate in a hostile action exercise at least once every cycle and should fully participate in one hostile action exercise by December 31, 2015. States with more than one nuclear power reactor plume exposure pathway EPZ should rotate this participation from site to site.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency exercises including the ingestion pathway exercise will no longer be necessary.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p><u>§ IV.F.2.e - Licensees shall enable any State or local government located within the plume exposure pathway EPZ to participate in the licensee's drills when requested by such State or local government.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the plume exposure pathway emergency planning zone, offsite plans and drill will no longer be necessary. In the context of this paragraph of the regulation, "any State" means Wisconsin and "local government" means the organizations that provide emergency support services (i.e. ambulance, fire, police) to KPS upon request.</p>
<p><u>§ IV.F.2.f - Remedial exercises will be required if the emergency plan is not satisfactorily tested during the biennial exercise, such that NRC, in consultation with FEMA, cannot (1) find reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency or (2) determine that the Emergency Response Organization (ERO) has maintained key skills specific to emergency response. The extent of State and local participation in remedial exercises must be sufficient to show that appropriate corrective measures have been taken regarding the elements of the plan not properly tested in the previous exercises.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, offsite emergency response plans will no longer be necessary and the subsequent need for remedial exercises is unnecessary.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.2.i - Licensees shall use drill and exercise scenarios that provide reasonable assurance that anticipatory responses will not result from preconditioning of participants. Such scenarios for nuclear power reactor licensees must include a wide spectrum of radiological releases and events, including hostile action. Exercise and drill scenarios as appropriate must emphasize coordination among onsite and offsite response organizations.</p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Requirements for offsite planning will no longer be necessary. Therefore, the offsite full participation exercise will no longer be required.</p> <p>Following docketing of its "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013, KPS is a permanently shutdown facility with spent fuel stored in the spent fuel pool and ISFSI. In the EP Final Rule (76 FR 72596, Nov. 23, 2011), the Commission defined "hostile action" as, in part, an act directed toward a nuclear power plant or its personnel. The NRC excluded non-power reactors (NPR) from the definition of "hostile action" at that time because an NPR is not a nuclear power plant and a regulatory basis had not been developed to support the inclusion of NPR in that definition. Likewise, spent fuel pools and ISFSIs are not a nuclear power plant.</p> <p>The following similarities between the KPS facility and NPRs show that the KPS facility should be treated similarly to NPRs. Similar to NPRs, KPS poses lower radiological risks to the public from accidents than do power reactors because: (1) KPS is a permanently shutdown facility (with fuel stored in the spent fuel pool and ISFSI) and no longer generates fission products; 2) Fuel stored in the KPS SFP has lower decay heat, resulting in lower risk of fission product release in the event of a non-credible boil off or draindown event; and 3) no credible accident at KPS will result in radiological releases requiring offsite protective actions. NPRs have lower decay heat associated with a lower risk of core melt and fission product release in a loss-of-coolant accident. Likewise, KPS has a low likelihood of a credible accident resulting in radiological releases requiring offsite protective actions.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.F.2.j - <u>The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each eight calendar year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, implementation of strategies, procedures, and guidance developed under § 50.54(hh)(2), and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each eight year exercise cycle that documents the content of scenarios used to comply with the requirements of this paragraph. Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015. The first eight-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under Part 52, the first eight-year exercise cycle begins in the calendar year of the initial exercise required by Section IV.F.2.a.</u></p>	<p>Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, the offsite full participation exercise will no longer be required.</p> <p>Following docketing of its "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013, KPS is a permanently shutdown facility with spent fuel stored in the spent fuel pool and ISFSI. In the EP Final Rule (76 FR 72596, Nov. 23, 2011), the Commission defined "hostile action" as, in part, an act directed toward a nuclear power plant or its personnel. The NRC excluded non-power reactors (NPR) from the definition of "hostile action" at that time because an NPR is not a nuclear power plant and a regulatory basis had not been developed to support the inclusion of NPR in that definition. Likewise, spent fuel pools and ISFSIs are not a nuclear power plant.</p> <p>The following similarities between the KPS facility and NPRs show that the KPS facility should be treated similarly to NPRs. Similar to NPRs, KPS poses lower radiological risks to the public from accidents than do power reactors because: (1) KPS is a permanently shutdown facility (with fuel stored in the spent fuel pool and ISFSI) and no longer generates fission products; 2) Fuel stored in the KPS SFP has lower decay heat, resulting in lower risk of fission product release in the event of a non-credible boil off or draindown event; and 3) no credible accident at KPS will result in radiological releases requiring offsite protective actions. NPRs have lower decay heat associated with a lower risk of core melt and fission product release in a loss-of-coolant accident. Likewise, KPS has a low likelihood of a credible accident resulting in radiological releases requiring offsite protective actions.</p>

Regulation (10 CFR 50, Appendix E) (portion being exempted shown emphasized)	Basis for Requested Exemption
<p>§ IV.1 - <u>By June 20, 2012, for nuclear power reactor licensees, a range of protective actions to protect onsite personnel during hostile action must be developed to ensure the continued ability of the licensee to safely shut down the reactor and perform the functions of the licensee's emergency plan.</u></p>	<p>Following docketing of its "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013, KPS is a permanently shutdown facility with spent fuel stored in the spent fuel pool and ISFSI. In the EP Final Rule (76 FR 72596, Nov. 23, 2011), the Commission defined "hostile action" as, in part, an act directed toward a nuclear power plant or its personnel. The NRC excluded non-power reactors (NPR) from the definition of "hostile action" at that time because an NPR is not a nuclear power plant and a regulatory basis had not been developed to support the inclusion of NPR in that definition. Likewise, spent fuel pools and ISFSIs are not a nuclear power plant.</p> <p>The following similarities between the KPS facility and NPRs show that the KPS facility should be treated similarly to NPRs. Similar to NPRs, KPS poses lower radiological risks to the public from accidents than do power reactors because: (1) KPS is a permanently shutdown facility (with fuel stored in the spent fuel pool and ISFSI) and no longer generates fission products; 2) Fuel stored in the KPS SFP has lower decay heat, resulting in lower risk of fission product release in the event of a non-credible boil off or draindown event; and 3) no credible accident at KPS will result in radiological releases requiring offsite protective actions. NPRs have lower decay heat associated with a lower risk of core melt and fission product release in a loss-of-coolant accident. Likewise, KPS has a low likelihood of a credible accident resulting in radiological releases requiring offsite protective actions.</p>

Based on the information provided in the two tables above and further analysis below, DEK has concluded that the identified portions of 10 CFR 50.47(b), 10 CFR 50.47(c)(2) and 10 CFR 50, Appendix E, Section IV will not be needed for adequate emergency response capability for KPS in its permanently defueled condition, and therefore will not be needed to achieve the underlying purpose of the rules and would be unduly burdensome.

Approval of the requested exemptions would not present an undue risk to the public health and safety or prevent appropriate response in the event of an emergency at KPS.

The portions of 10 CFR 50.47 and 10 CFR 50, Appendix E that are not identified in Tables 1 and 2 above (i.e., those portions for which exemption is not being requested), will remain applicable to KPS.

II. BACKGROUND

Kewaunee Power Station (KPS) is situated in rural northeast Wisconsin, located in Kewaunee County on the west shore of Lake Michigan. The land area within a 20 mile radius is primarily farmland, with a population density of about 60 people per square mile. The current population of the entire county of Kewaunee is about 20,600 people. Two small cities, Two Rivers (12,000 population) and Manitowoc (34,000 population), lie about 11 and 17 miles, respectively, south of the station. The nearest population center of substance is the city of Green Bay (104,000 population), located about 27 miles west-northwest of the station. The entire 50-mile radius east of the station is occupied by the waters of Lake Michigan (i.e., unpopulated). The low population of the area, coupled with an extensively developed and well maintained road system, facilitates ease of emergency planning.

Section 14 of the KPS Updated Safety Analysis Report (USAR) previously described the design basis accident (DBA) scenarios that were applicable to KPS during power operations. During normal power operations, the forced flow of water through the reactor coolant system (RCS) removed the heat generated by the reactor core. The RCS, operating at high temperatures and pressures, transferred this heat through the steam generator tubes to the secondary system. The most severe postulated accidents for nuclear power plants involve damage to the nuclear reactor core and the release of large quantities of fission products to the reactor coolant system. Many of the USAR accident scenarios involved failures or malfunctions of systems which could affect the reactor core.

DEK submitted a Post-Shutdown Decommissioning Activities Report (PSDAR), which identified that KPS will decommission using a SAFSTOR method in which most fluid systems are drained and the plant is left in a stable condition until final decontamination and dismantlement activities begin. On May 7, 2013 the KPS reactor was permanently shutdown. After the reactor was shut down, all fuel assemblies were removed from the reactor vessel and placed in the spent fuel pool. The irradiated fuel will be stored in the spent fuel pool (SFP) and in the Independent Spent Fuel Storage Installation (ISFSI) until it is shipped off site in accordance with the schedules described in the PSDAR and updated Irradiated Fuel Management Plan. Since the reactor is permanently defueled, the SFP and its supporting systems are being modified and dedicated only to spent fuel storage. With the reactor defueled, the reactor vessel, RCS and secondary system are no longer in operation and have no function related to the safe storage and management of irradiated fuel.

A. Consequences of Design Basis Events

10 CFR 50.82(a)(2) specifies that the 10 CFR 50 license no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel after docketing the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel in accordance with 10 CFR 50.82(a)(1). Following the termination of reactor operations at KPS and the permanent removal of the fuel from the reactor vessel, the postulated accidents involving failure or malfunction of the reactor, RCS or secondary system are no longer applicable.

The USAR has been revised to reflect the currently applicable FHA design basis accidents (consistent with the description that was included in a license amendment request submitted to NRC for approval of the Permanently Defueled Technical Specifications (see section 5.2 of Reference 3)). The postulated accidents that remain applicable to KPS in the permanently shut down and defueled condition are a fuel handling accident (FHA) in the auxiliary building where the SFP is located, an accidental release of waste liquid, or an accidental release of waste gas (consistent with the description that was included in a license amendment request submitted to NRC for approval of the Permanently Defueled Technical Specifications (Reference 3)). Subsequent to that submittal, RCS systems and tanks have been drained, vented, and radiologically analyzed. The analyses indicate that any remaining liquid contents contain no radioactive gases with the potential for being volatilized while being stored, processed or possibly leaked. Therefore, a failure involving the radioactive liquid waste systems is not capable of challenging dose limits established in 10 CFR 50.67 and Regulatory Guide 1.183 or the EPA's Protective Action Guidelines (PAG). The USAR is currently being updated to reflect the elimination of potential radiological consequences of the postulated failures in the radioactive gaseous waste and radioactive liquid waste systems.

A revised FHA analysis has been developed to address the permanently defueled condition. The revised FHA analysis assumes scrubbing based on 23 feet of water over the failed fuel assembly and shows that after 90 days of irradiated fuel decay time after reactor shutdown the dose consequences at the EAB would be 0.001 Rem., which is a small fraction of the EPA PAG.

B. Consequences of Beyond Design Basis Events

1. Spent Fuel Pool Assessment – Complete Loss of Cooling Water Inventory With Air Cooling

DEK performed a comparison of the heatup characteristics of the KPS spent fuel that would result from a beyond design basis event involving the complete loss of spent fuel pool (SFP) water (when cooling depends on the natural circulation of air through the spent fuel racks), against the results documented in NUREG/CR-6451, "A Safety and Regulatory Assessment of Generic BWR and PWR Permanently

Shutdown Nuclear Power Plants” (August 1997) (Reference 11), for the reference PWR. The results of this comparison are shown in Table 3 and conclude that as of October 2014, when the requested exemptions will be implemented, decay heat cannot heat the spent fuel cladding sufficiently to cause clad failure (565°C) if all water is drained from the SFP. Since fuel cladding would remain intact at this temperature, a complete loss of water from the KPS SFP would not result in an offsite release exceeding the early-phase EPA Protective Action Guidelines (PAGs).

Although the limited scope of design basis accidents that remain applicable to KPS justify a reduction in the necessary scope of emergency response capabilities, DEK also assessed beyond design basis events, using guidance contained in NUREG-1738, “Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants” (February 2001) (Reference 9).

NUREG-1738 contains the results of the NRC staff’s evaluation of the potential accident risk in spent fuel pools at decommissioning plants in the United States. As stated therein, the study was undertaken to support development of a risk-informed technical basis for reviewing exemption requests and a regulatory framework for integrated rulemaking. The NRC staff performed analyses and sensitivity studies on evacuation timing to assess the risk significance of relaxed offsite emergency preparedness requirements during decommissioning. The staff based its sensitivity assessment on the guidance in Regulatory Guide (RG) 1.174, “An Approach for Using Probabilistic Risk Assessment In Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis.” The staff’s analyses and conclusions apply to decommissioning facilities with SFPs that meet the design and operational characteristics assumed in the risk analysis.

The study found that the risk at decommissioning plants is low and well within the Commission’s Safety Goals. The risk is low because of the very low likelihood of a zirconium fire (resulting from a postulated irrecoverable loss of SFP cooling water inventory) even though the consequences from a zirconium fire could be serious.

The study provided the following assessment.

“The staff found that the event sequences important to risk at decommissioning plants are limited to large earthquakes and cask drop events. For emergency planning (EP) assessments, this is an important difference relative to operating plants where typically a large number of different sequences make significant contributions to risk. Relaxation of offsite EP a few months after shutdown resulted in only a “small change” in risk, consistent with the guidance of RG 1.174. Figures ES-1 and ES-2 [in NUREG-1738] illustrate this finding. The change in risk due to relaxation of offsite EP is small because the overall risk is low, and because even under current EP requirements, EP was judged to have marginal impact on evacuation effectiveness in the severe earthquakes that dominate SFP risk. All other sequences including cask drops (for which emergency planning is expected to be more effective) are too low in likelihood to have a significant impact on risk.

For comparison, at operating reactors, additional risk-significant accidents for which EP is expected to provide dose savings are on the order of 1×10^{-5} per year, while for decommissioning facilities, the largest contributor for which EP would provide dose savings is about two orders of magnitude lower (cask drop sequence at 2×10^{-7} per year)."

A comparison of the reference pressurized water reactor (PWR) used in the staff's study against KPS shows that KPS has a smaller core power and associated core inventory and smaller heat load in the spent fuel pool. Therefore KPS would have smaller consequences from a SFP event. During its final operating cycle, the KPS reactor operated for only 12 months (instead of a normal PWR cycle of 18 months). Therefore, the fuel assemblies off-loaded from the reactor vessel after the most recent operating cycle experienced lower burnup and possess lower decay heat than assemblies from a typical PWR. Fuel assembly decay heat rate is dependent on assembly power during its final cycle of operation, total assembly burnup, and decay time since shutdown.

NUREG/CR-4982, "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82," (July 1987) (Reference 10) and NUREG/CR-6451 contain evaluations of the potential for zircaloy oxidation in the event of a spent fuel pool draindown event. Both of these NUREGs assumed that:

- The spent fuel pool was completely drained of water and only air cooling is available.
- The likelihood of cladding fire initiation is most sensitive to assembly decay heat rate and assembly storage rack configuration which controls the extent of natural convection cooling.

Table 3 below provides a comparison of Kewaunee fuel and spent fuel pool design against the reference PWRs used in the NUREG/CR-4982 and NUREG/CR-6451 evaluations. In Table 3:

- NUREG/CR-4982 provides information for the PWR high-density rack case with a rack bottom inlet orifice that bounds Kewaunee's rack configuration. This case also happens to be the longest time to prevent cladding fire initiation of all the cases analyzed.
- NUREG/CR-6451 provides information for the configuration entitled, "Hot Fuel in Spent Fuel Pool," which covers the period from permanent shutdown and reactor vessel defueling until the hottest assemblies are cool enough such that no substantial zircaloy oxidation occurs and cladding remains intact. At the end of the configuration, the decay time (that is necessary to ensure that the fuel cladding remains intact given the loss of all spent fuel pool water) is about 17 months for the representative PWR that was analyzed.

From Table 3, parameters pertinent to a zirconium/zircaloy fire in the spent fuel pool (SFP) are compared between Kewaunee and the reference PWR data used in the

NUREG evaluations. Based upon an analysis of this table, a minimum decay time to prevent a zirconium/zircaloy fire with the SFP completely drained is less than 17 months for Kewaunee.

TABLE 3
Spent Fuel Pool Zirconium Fire Comparison

Parameter	NUREG/CR-4982 1987	NUREG/CR-6451 1997	Kewaunee
Plant Data			
Power	Typical PWR	1130 MWe (~3330 MWt*)	590 MWe (1772 MWt)
Assemblies		193	121
MWt per Assembly		17.3	14.6
SPF Rack Design			
Design	High Density	High Density	High Density
Material	Stainless Steel	Stainless Steel	Stainless Steel
Pitch	N/A	10.4"	10"
Bottom Orifice Opening per Cell	5" diameter 10" diameter	5" diameter	8.14" equivalent diameter***
Fuel			
Design	Typical PWR	17 x 17	14 x 14
Max Assembly Burnup	High Burnup	60 GWD/MTU <i>Last Cycle</i>	55.302 GWD/MTU <i>Cycle 30**</i> 55.255 GWD/MTU <i>Cycle 31**</i> 46.219 GWD/MTU <i>Cycle 32**</i>
Source Term			
Decay	700 days (23 months) 5" dia. 360 days (12 months) 10" dia.	17 months	< 17 months****
Zirconium Oxidation Ignition Temperature	650 °C	565 °C	565 °C

* Based on a 34% thermal efficiency.

** As of end of cycle: Cycle 30 02/26/2011, Cycle 31 04/05/2012, Cycle 32 05/07/2013.

*** Derived equivalent diameter.

**** Based on above KPS rack opening & burnup parameters being bounded by associated NUREG PWR parameters.

Additional comparisons between Kewaunee and generic PWR SFP considerations are discussed below.

2. Spent Fuel Pool Assessment – Loss of All Heat Removal Capability

The KPS spent fuel pool has a large capacity for heat absorption. As documented in the USAR, alternate cooling capability can be made available under anticipated malfunctions or failures. Sufficient time exists to either repair a failed SFP cooling pump or to connect a temporary pump in the system. Both temperature and level indicators in the pool would alert operators to a loss of cooling. Local and remote

alarms are provided. This allows the operator to take corrective measures in a timely manner to restore cooling capability to the spent fuel pool cooling loop.

In the event of a loss of both SFP pumps and/or SFP heat exchanger, alternate cooling is provided by the evaporative cooling process. On-site water sources, including a service water emergency connection, are available to provide cooling water make-up until failed components are repaired or replaced and placed into service.

Because the Spent Fuel Pool Cooling (SFPC) pumps suction connections extend no more than two feet below normal pool water level, there is no possibility of inadvertently draining pool water below that level via a line failure in the SFPC suction lines. This design feature ensures a margin of 23 feet above the top of the fuel assemblies is maintained. Also, the SFPC system water return lines that provide cooling water to the pool enter the pool above the top of the fuel assemblies. The return lines have check valves installed near their penetration into the spent fuel pool wall to prevent siphoning of water from the pool in the unlikely event of a line failure. The check valves and the return lines, like the pool itself, are designed to withstand design basis earthquake loads. Therefore, the probability of inadvertently draining any operationally or radiologically significant volume of water from the spent fuel pool is low.

If heat removal and makeup capabilities for the SFP (SFP cooling system) are lost for an extended period, decay heat produced by the spent fuel will heat the SFP coolant to a point of boiling and then boil the coolant down to the top of the fuel. DEK assessed the decay heat load over time and calculated the times required for boiling to occur in the SFP and the time available to take actions before fuel uncover occurs. This assessment was based on the fuel assembly characteristics following permanent shutdown of the reactor that occurred May 7, 2013.

The SFP contains 805.3 gallons of water per inch of height above the top of the fuel assemblies. Technical Specification (TS) 4.3.2 specifies water level in the SFP shall be maintained to prevent inadvertent draining below plant elevation 645 ft 2 inches, which corresponds to a minimum of 23 feet of water above the top of the fuel assemblies in the SFP. A worst case boil-off rate documented in the USAR for the operational facility (freshly discharged core) was about 42 gallons/min.

Table 4 below shows the amount of time required for the water in the SFP to reach saturation temperature (212°F) and begin to boil following a loss heat removal capability (loss of cooling) that was not recovered. A starting SFP water temperature of 100°F was chosen because SFP temperature is annunciated when temperature rises to 100°F, requiring an operator response. These time values are calculated for several dates following permanent shutdown on May 7, 2013 (the calculation is based on the loss of cooling occurring on the stated date). The time to boil values (hours) list truncated whole numbers for conservatism (day values are rounded).

The column titled "Decay Period" lists the elapsed period since shutdown for its associated date. As the fission products in the fuel decay over time, the decay heat being produced continuously decreases and the length of time required to achieve boiling in the SFP increases correspondingly. The final column shows the time required for water in the SFP to boil off until only three feet of water remains above the top of the fuel assemblies. This time period begins with the loss of cooling and thus includes the time (shown in Column 4) needed to reach saturation temperature. Sufficient heat is removed from the fuel during the boiling process such that no fuel damage occurs. Although no fuel damage is expected while the water level remains above the top of the fuel, a level of three feet above the top of the fuel was chosen for ease of comparison to the corresponding information contained in NUREG-1738. Three feet of water continues to provide sufficient shielding from radiation to any personnel involved in responding to the event.

TABLE 4
KPS SFP Times to Boil and Fuel Uncovery Following Loss of Cooling

Date	Decay Period	Decay Heat	Time to Boil	Time to 3' From Fuel Uncovery
May 8, 2013	1 day	30.9 Mbtu/hr	11 hours	60 hours (3 days)
May 19, 2013	12 days	15.3 Mbtu/hr	24 hours	122 hours (5 days)
July 19, 2013	73 days	7.6 Mbtu/hr	48 hours	247 hours (10 days)
November 1, 2013	178 days	5.1 Mbtu/hr	72 hours	369 hours (15 days)
September 20, 2014	1.4 years	3.1 Mbtu/hr	120 hours	612 hours (26 days)

As shown in the above table, after the spent fuel has decayed 6 months (November 1, 2013), approximately 15 days are available to restore cooling to the SFP before cooling water level reaches three feet above the top of the fuel (additional time would be available before fuel is uncovered). Makeup water capacity from onsite sources can significantly increase the time available to fuel uncovery.

Because of the relative ease with which alternative means of supplying cooling water to the SFP can be established, it is not reasonable to postulate that fuel damage can occur due to loss of normal cooling capability to the SFP.

A comparison was made of the times to boil and to uncover fuel, which were calculated for KPS (Table 4 above), against the corresponding times contained in NUREG-1738, Table 2.1, "Time to Heatup and Boiloff SFP Inventory Down to 3 Feet Above Top of Fuel (60 GWD/MTU)," for the reference PWR. The NUREG-1738 data show that about 11 days are required (after 2 years of decay time) to heat the SFP coolant in the reference PWR to a point of boiling and then boil the coolant down to

3 feet above the top of the fuel. In contrast, Table 4 above shows that the corresponding time to boil the coolant down to 3 feet above the top of the fuel in the KPS SFP (after 18 months of decay time) is about 26 days. This information is summarized in Table 5 below for ease of comparison.

TABLE 5
Comparison of NUREG-1738 Reference PWR Data to KPS SFP

	Decay Time	Time to Boil Coolant Down to 3 Feet above the Top of Fuel
Reference PWR	2 years	11 days
KPS	1.5 years	26 days

The results show that KPS has more time available for operators to take actions to restore cooling (and thus prevent reaching zirconium ignition temperature) than was analyzed in NUREG-1738.

The longer period to boil away the SFP cooling water is expected based on the smaller decay heat load in the KPS SFP (which results from KPS being a relatively small sized reactor facility and having operated for an abbreviated period during its final operating cycle) as compared to the reference PWR in NUREG-1738. As such, the analysis contained in NUREG-1738 is considered conservative (and therefore bounding) for KPS.

The ample time available, coupled with the simplicity of obtaining makeup water, further reinforce the conclusion that it is not reasonable to postulate that fuel damage can occur due to loss of normal cooling capability to the SFP.

3. Spent Fuel Pool Assessment – Partial Loss of Cooling Water Inventory with No Air Cooling

Although a partial loss of SFP cooling water inventory with no air cooling is unlikely, DEK nonetheless performed a comparison of the reference pressurized water reactor (PWR) used in the NRC staff’s study against KPS to assess the postulated consequences of a partial loss of cooling water inventory with no air cooling. This comparison considered the maximum Zircaloy cladding temperature that may occur in the spent fuel pool (SFP) with the fuel exposed to an air environment, as well as the potential upper limit radiation fields at the exclusion area boundary. This assessment was based on the information contained in NUREG-1738, which evaluated the thermal-hydraulic characteristics of spent fuel stored in the spent fuel pools of decommissioning plants and determined the time available for plant operators to take actions to prevent a zirconium fire. The NUREG-1738 results are based on obstructed airflow (adiabatic heatup) of the spent fuel (due to a geometry

change or partial draining of the spent fuel pool that inhibits upward air flow through the fuel assemblies).

Kewaunee has performed a site-specific adiabatic heatup analysis to address a partial draindown of the SFP, assuming no air-cooling (Reference 12). The purpose of the analysis was to conservatively evaluate the length of time it takes for uncovered spent fuel assemblies to reach a temperature of 565 degrees Centigrade (°C) assuming no air-cooling. Per NUREG-CR/6451, 565°C is the lowest temperature where incipient cladding failure might occur and is appropriate to be used as the critical cladding temperature. Based on 17 months of decay time after permanent shutdown of KPS, the time necessary for the hottest fuel assembly to reach the critical temperature of 565°C is 6 hours after the fuel rods have become uncovered. Six hours is sufficient time for personnel at the station to respond with additional resources, equipment, and capability to regain cooling to the spent fuel pool, even after the most non-credible, catastrophic draindown event. For an event involving draindown of the SFP, the response time would increase significantly due to mitigative actions to regain spent fuel pool level and heat loss from the fuel to the remaining water and steam in the pool prior to draindown.

Guidance has been developed for mitigating the loss of water inventory prior to the onset of Zirconium cladding damage in the event of a loss of spent fuel pool water inventory such that air cooling would not occur. The guidance includes multiple strategies for providing makeup to the Spent Fuel Pool. Strategies include using existing plant systems for makeup; supplying water via hoses to a spool piece connection to the existing SFP piping; or using a diesel-driven portable pump to take suction from Lake Michigan and provide makeup or spray to the Spent Fuel Pool (external makeup). Special tools and equipment needed to perform these actions are located on site. The external makeup strategy (using the diesel driven portable pump) has been demonstrated to be capable of being deployed within two hours. These diverse strategies provide defense-in-depth and ample time to provide makeup or spray to the SFP prior to the onset of Zirconium cladding ignition.

Furthermore, NUREG-1738 found that the event sequences important to risk at decommissioning plants (that could possibly result in a rapid draindown of the SFP) are limited to large earthquakes and cask drop events. These two event sequences are discussed below.

4. Spent Fuel Pool Assessment - Rapid Draindown Due to Seismic Events

Given the robust structural design of SFPs, it is expected that a seismic event with peak spectral acceleration several times larger than the safe shutdown earthquake (SSE) would be required to produce catastrophic failure of the structure. The estimated frequency of seismic events sufficiently large to result in structural failure of the SFP is given in NUREG-1738, Table 3.7-4, and is based on the Lawrence Livermore National Laboratory (LLNL) and Electric Power Research Institute (EPRI)

seismic hazard estimates. Both the LLNL and EPRI hazard estimates were developed as best estimates and are considered valid by the NRC.

KPS is located in a geologically stable region whose seismic hazard risk is very low as documented in recent seismic hazard estimates (based on U.S. Geological Survey (USGS) of 2008). Geologic investigations throughout the Lake Michigan basin have not found any indication of fault movement in the recent geologic past. As shown in Figure 2 of GI-199 (Reference 4), the peak horizontal acceleration (%g) for 2-percent probability of exceedance in 50 years, for the geographic region where KPS is located, is in the second lowest region of the conterminous United States (between 0.02 and 0.03 g).

Additionally, all spent fuel is expected to be removed from the KPS SFP and placed into the onsite ISFSI by 2020, as documented in KPS Post Shutdown Decommissioning Activities Report submitted to NRC on February 26, 2013 (Reference 5). As such, the seismic exposure period for the SFP is expected to be limited to approximately 7 years after plant shutdown.

Based on the low probability of a seismic event of sufficient magnitude to cause failure of the SFP in the geographic region where KPS is located, a seismic event as an initiator of a rapid SFP draindown event is not considered credible at KPS.

5. Spent Fuel Pool Assessment - Rapid Draindown Due to Cask Drop Event

KPS has a single-failure proof auxiliary building crane that is used for lifting heavy loads over the SFP. This upgraded crane was analyzed using a method that assessed the crane when subjected to seismic loading. This method was approved by NRC in License Amendment 205 (Reference 6), which included an independent third party review. DEK uses the auxiliary building crane for spent fuel cask loading operations in the spent fuel pool. The NRC safety evaluation approving KPS License Amendment 205 stated that this method of analysis demonstrates that the crane will not lower its load in an uncontrolled fashion and that the trolley and bridge wheels will remain on their respective rails during a seismic event. Amendment 205 incorporated the seismic analysis methodology for the auxiliary building crane into the KPS License as License Condition 2.C.(11). This license condition is being maintained in the KPS license. Because the auxiliary building crane will not lower its load in an uncontrolled fashion during a seismic event, a cask drop event is not considered a credible initiator of a rapid SFP draindown event at KPS.

The analysis of heavy load drops discussed in NUREG-1738 exclusively considered loads that were severe enough to catastrophically damage the SFP so that pool inventory would be lost rapidly and it would be impossible to refill the pool using onsite or offsite resources. The NUREG-1738 analysis assumption is based on no possibility of mitigating the damage, only preventing it. Only spent fuel casks are heavy enough to catastrophically damage the pool if dropped. The NRC staff assumes a very low likelihood that other heavy loads will be moved over the SFP

and that if one of these lighter loads over the SFP is dropped, it is unlikely to cause catastrophic damage to the pool.

The potential for a catastrophic pool draindown event, as discussed above, has not changed from what existed at KPS during its operational phase. No specific response capability was necessitated for such an event because resolution of Generic Issue (GI) 82, "Beyond Design Basis Accidents in Spent Fuel Pools," and other studies of operating reactor SFPs concluded that existing requirements for operating reactor SFPs were sufficient. The risk for SFPs at operating plants is limited by a lower expected frequency of heavy load lifts than at decommissioning plants. However, as documented in License Amendment 205, measures in place at KPS are adequate to prevent the occurrence of a spent fuel cask drop. As such, a cask drop event as the initiator of a rapid draindown of the SFP is not credible at KPS.

6. Assessment of Shine from an Empty Spent Fuel Pool

Although a significant release of radioactive material from the spent fuel is not possible in the absence of water cooling after approximately 17 months, the potential exists for radiation exposure to an offsite individual in the event that shielding of the fuel is lost (a beyond-design-basis event). Water and the concrete pool structure serve as radiation shielding. A loss of water shielding above the fuel could increase the offsite radiation levels because of the gamma rays streaming up out of the pool being scattered back to a receptor at the site boundary.

The offsite radiological impact of a postulated complete loss of SFP water was assessed. It was determined that the gamma radiation dose rate at the exclusion area boundary would be sufficiently low, such that it would take more than a month for the event to exceed the EPA early-phase Protective Action Guidelines (PAG) of 1 Rem. The EPA early-phase PAG is defined as the period beginning at the projected or actual initiation of a release and extending a few days later. The PAGs were developed to respond to a mobile airborne plume that could transport and deposit radioactive material over a large area. In contrast, the radiation field formed by scatter from a drained SFP would be stationary rather than moving and would not cause transport or deposition of radioactive materials. The extended period required to exceed the integrated PAG limit of 1 Rem TEDE would allow sufficient time to develop and implement on-site mitigative actions and provide confidence that additional offsite measures could be taken without planning if efforts to reestablish shielding over the fuel are delayed.

C. Recent NRC Analyses Regarding Storage of Spent Nuclear Fuel in SFPs

Further support for this exemption request is provided by the NRCs 2008 denial of petitions for rulemaking (73FR46204, Reference 7), which discusses the results of additional studies of spent fuel pool risk conducted subsequent to NUREG-1738. The NRC denial of rulemaking addressed the Petitioners assertion that spent fuel

stored in high density SFPs is more vulnerable to a zirconium fire than the NRC concluded in its analysis for the renewal of nuclear power plant licenses. Specifically, the Petitioners asserted that an accident or a malicious act, such as a terrorist attack, could result in an SFP being drained, either partially or completely, of its cooling water. The Petitioners further asserted that this drainage would then cause the stored spent fuel assemblies to heat up and then ignite, with the resulting zirconium fire releasing a substantial amount of radioactive material into the environment.

The staff's denial of the petition for rulemaking in this case was based on numerous factors. These factors included the physical robustness of SFPs, the enhanced physical security measures required for their protection, the very low risk of an accident causing a zirconium fire in an SFP, and evaluations performed by NRC at every SFP in the United States.

Spent nuclear fuel offloaded from a reactor is stored in a SFP. The SFPs at nuclear plants in the United States are massive, robust structures designed to safely contain the spent fuel discharged from a nuclear reactor under a variety of normal, off-normal, and hypothetical accident conditions (e.g., loss of electrical power, floods, earthquakes, or tornadoes). SFPs are made of thick, reinforced, concrete walls and floors lined with welded, stainless-steel plates to form a leak-tight barrier. Racks fitted in the SFPs store the fuel assemblies in a controlled configuration (i.e., so that the fuel is both sub-critical and in a coolable geometry). These structural features, complemented by the deployment of effective and visible physical security protection measures, are deterrents to terrorist activities.

The NRC has determined that the security and mitigation measures NRC has imposed upon its licensees since September 11, 2001, and national anti-terrorist measures to prevent, for example, aircraft hijackings, coupled with the robust nature of SFPs, make the probability of a successful terrorist attack, though numerically indeterminable, very low. In addition, reactor physical security systems use a defense-in-depth concept, involving internal and external barriers, intrusion assessment systems, armed responders, local law enforcement authority's response to the site, and other measures. The staff has determined that, taken as a whole, these systems, personnel, and procedures provide reasonable assurance that public health and safety, the environment, and the common defense and security will be adequately protected.

The staff noted that studies conducted over the last three decades have consistently shown that the probability of an accident causing a zirconium fire in an SFP to be lower than that for severe reactor accidents.

The staff's assessment discussed the conservatisms in NUREG-1738, including the assumption that if the water level in the SFP dropped below the top of the spent fuel, a zirconium fire involving all of the spent fuel would occur. The staff concluded NUREG-1738 bounded those conditions associated with air cooling of the fuel. The

study found the risk of an SFP fire to be low and well within the Commission's Safety Goals even when all events leading to the spent fuel assemblies becoming uncovered were assumed to result in a zirconium fire.

Furthermore, the staff noted that significant additional analyses have been performed since September 11, 2001, which support the view that the risk of a successful terrorist attack (i.e., one that results in an SFP zirconium fire) is very low. These analyses were conducted by the Sandia National Laboratories and are collectively referred to as the "Sandia studies." The Sandia studies indicated that there may be a significant amount of time between the initiating event (i.e., the event that causes the SFP water level to drop) and the spent fuel assemblies becoming partially or completely uncovered. In addition, the Sandia studies indicated that for those hypothetical conditions where air cooling may not be effective in preventing a zirconium fire, there is a significant amount of time between the spent fuel becoming uncovered and the possible onset of such a zirconium fire, thereby providing a substantial opportunity for both operator and system event mitigation.

The Sandia studies, which more fully account for relevant heat transfer and fluid flow mechanisms, also indicated that air-cooling of spent fuel would be sufficient to prevent SFP zirconium fires at a point much earlier following fuel offload from the reactor than previously considered in NUREG-1738. Thus, the fuel is more easily cooled, and the likelihood of an SFP fire is therefore reduced.

Additional mitigation strategies implemented subsequent to September 11, 2001, enhance spent fuel coolability and the potential to recover SFP water level and cooling prior to a potential SFP zirconium fire. The Sandia studies also confirmed the effectiveness of additional mitigation strategies to maintain spent fuel cooling in the event the pool is drained and its initial water inventory is reduced or lost entirely. Based on this more recent information, and the implementation of additional strategies following September 11, 2001, the probability, and accordingly, the risk, of a SFP zirconium fire initiation is expected to be less than reported in NUREG-1738 and previous studies.

The staff concluded that a zirconium fire requires a number of conditions that are extremely unlikely to occur together. The Sandia studies provide a more realistic assessment of the coolability of spent fuel under a range of conditions and a better understanding of the actual safety margins than was indicated in NUREG-1738. The Sandia studies show that the safety margins are much larger than indicated by previous studies such as NUREG-1738.

Past NRC studies of spent fuel heatup and zirconium fire initiation conservatively did not consider certain natural heat transfer mechanisms, which would serve to limit heatup of the spent fuel assemblies and prevent a zirconium fire. In particular, these studies, including NUREG-1738, did not consider heat transfer from higher decay assemblies to older, lower decay fuel assemblies in the SFP. This heat transfer would substantially increase the effectiveness of air cooling in the event the SFP is

drained, beyond the effectiveness of air cooling cited in past studies. The Sandia studies confirm the NRC conclusion that such heat transfer mechanisms allow rapid heat transfer away from the higher powered assemblies. Such heat transfer could air-cool the assemblies sufficiently to prevent a zirconium fire within a relatively short time after the assemblies are discharged from the reactor to the SFP. Thus, air cooling is an effective, passive mechanism for cooling spent fuel assemblies in the pool.

In summary, within a few days after reactor shutdown for boil-down type events, there is considerable time (>100 hours) to take action to preclude a fission product release or zirconium fire before uncovering the top of the fuel. Although the NUREG-1738 analysis shows that a zirconium fire could still be possible after 2 years for cases involving unsuccessful accident management measures, the ample time and diverse measures available to mitigate such accidents makes the likelihood of a zirconium fire extremely low. Furthermore, subsequent studies have shown that the safety margins are much larger than indicated by the studies documented in NUREG-1738.

Studies documented in NUREG/CR-6451, "A Safety and Regulatory Assessment of Generic BWR and PWR Permanently Shutdown Nuclear Power Plants" (August 1997), showed the results of spent fuel heatup under conditions where air cooling of the fuel assemblies remains available (i.e., the seismic or cask drop event resulted in draining the SFP, but did not result in obstructed air flow of the coolant channels within the fuel assemblies). These studies showed that the reference PWR would not produce sufficient decay heat to cause clad failure after about 17 months of decay time.

The NRC recently published a report that documents the Office of Nuclear Regulatory Research's consequence study that continues the NRC's examination of the risks and consequences of postulated spent fuel pool accidents (Reference 8). This report concluded that "spent fuel is only susceptible to a radiological release within a few months after the fuel is moved from the reactor into the spent fuel pool. After that time, the spent fuel is coolable by air." The report also stated that "If a leak and radiological release were to occur, this study shows that the individual cancer fatality risk for a member of the public is several orders of magnitude lower than the Commission's Quantitative Health Objective of two in one million (2×10^{-6} /year). For such a radiological release, this study shows public and environmental effects are generally the same or smaller than earlier studies." The study considered scenarios where some preplanned and improvised mitigative actions were either not successful or not implemented before three days, at which time the analysis was terminated. In responding to such an event, the site emergency response organization would request support from offsite response organizations to implement improvised additional mitigative measures, such as pumping water into the spent fuel pool using a fire truck. Analysis of these additional mitigative measures was not assessed (or credited by) this study.

Additional margin is available at KPS based on the spent fuel pool rack design. The KPS spent fuel racks contain a rectangular channel that has an area equivalent to an 8.14 inch diameter flow hole, which would serve to provide significantly more cooling capability than the 5 inch diameter orifice of the reference rack flow holes listed in NUREG/CR-6451. Based on comparison of the KPS SFP to the reference PWR SFP (see Table 3 for comparison), fuel in the KPS SFP would likely not produce sufficient decay heat to cause clad failure after a shorter period of decay time than for the reference PWR.

D. Summary

The underlying purpose of 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV is to ensure that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, to establish plume exposure and ingestion pathway emergency planning zones for nuclear power plants, and to ensure that licensees maintain effective offsite and onsite emergency plans.

The standards and requirements in 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV were developed taking into consideration the risks associated with operation of a nuclear power reactor at its licensed full-power level. These risks include the potential for a reactor accident with offsite radiological dose consequences.

The radiological consequences of accidents that remain possible at KPS are substantially lower than those at an operating plant. The upper bound of offsite dose consequences limits the highest attainable emergency class to the alert level. In addition, because of the reduced consequences of radiological events still possible at the site, the scope of the onsite emergency preparedness organization and corresponding requirements in the emergency plan may be accordingly reduced. Thus, the underlying purpose of the regulations will not be adversely affected by eliminating offsite emergency planning activities or reducing the scope of onsite emergency planning.

Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, application of all of the standards and requirements in 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV are not necessary to achieve the underlying purpose of those rules.

III. JUSTIFICATION FOR EXEMPTIONS AND SPECIAL CIRCUMSTANCES

10 CFR 50.12 states that the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of Part 50 which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the defense and security. 10 CFR 50.12 also states that the Commission will not consider granting an exemption unless special circumstances are present. As discussed below, this exemption request satisfies the provisions of Section 50.12.

A. The exemptions are authorized by law

The proposed exemptions would allow Dominion Energy Kewaunee (DEK) to revise the Kewaunee Power Station (KPS) Emergency Plan to reflect the permanently defueled condition of the station. As stated above, 10 CFR 50.12 allows the NRC to grant exemptions from the requirements of 10 CFR Part 50. The proposed exemptions would not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore the exemptions are authorized by law.

B. The exemptions will not an present undue risk to public health and safety

The underlying purpose of 10 CFR 50.47(b), 10 CFR 50.47(c)(2), 10 CFR 50, Appendix E, Section IV is to ensure that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, to establish plume exposure and ingestion pathway emergency planning zones for nuclear power plants, and to ensure that licensees maintain effective offsite and onsite emergency plans.

As discussed in this request, revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the Environmental Protection Agency (EPA) Protective Action Guides at the exclusion area boundary (EAB). Therefore, offsite emergency response plans will no longer be needed for protection of the public beyond the EAB. Based on the reduced consequences of radiological events still possible at the site, which is in a permanently defueled condition, the scope of the onsite emergency preparedness organization and corresponding requirements in the emergency plan may be accordingly reduced without an undue risk to the public health and safety.

Therefore, the underlying purpose of the regulations will continue to be met. Since the underlying purpose of the rules will continue to be met, the exemptions will not present an undue risk to the public health and safety.

C. The exemptions are consistent with the common defense and security

The proposed exemptions would allow DEK to revise the KPS Emergency Plan to reflect the permanently defueled condition of the station. The reduced consequences of radiological events that remain possible at the site allows for a corresponding reduction in the scope of the onsite emergency preparedness organization and associated reduction of requirements in the emergency plan. These reductions will not adversely affect DEK's ability to physically secure the site or protect special nuclear material. Physical security measures at KPS are not affected by the requested exemption. Therefore, the proposed exemptions are consistent with the common defense and security.

D. Special Circumstances

Pursuant to 10 CFR 50.12(a)(2), the NRC will not consider granting an exemption to its regulations unless special circumstances are present. DEK believes that special circumstances are present as discussed below.

Special circumstances exist at KPS because the plant is permanently shutdown and defueled and the radiological source term at the site is reduced from that associated with reactor power operation. With the reactor power plant permanently shutdown and defueled, the design basis accidents and transients postulated to occur during reactor operation are no longer possible. In particular, the potential for a release of a large radiological source term to the environment from the high pressures and temperatures associated with reactor operation no longer exists. Additionally, due to the radioactive decay of short lived isotopes, there is a continuing reduction in the potential radiological source term following the KPS plant shutdown on May 7, 2013.

1. Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. (10 CFR 50.12(a)(2)(ii))

The underlying purpose of 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV is to ensure that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, to establish plume exposure and ingestion pathway emergency planning zones for nuclear power plants, and to ensure that licensees maintain effective offsite and onsite emergency plans.

The standards and requirements in 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV were developed taking into consideration the risks associated with operation of a nuclear power reactor at its licensed full-

power level. These risks include the potential for a reactor accident with offsite radiological dose consequences.

The radiological consequences of accidents that remain possible at KPS are substantially lower than those at an operating plant. The upper bound of offsite dose consequences limits the highest attainable emergency class to the alert level. In addition, because of the reduced consequences of radiological events still possible at the site, the scope of the onsite emergency preparedness organization may be reduced accordingly. Thus, the underlying purpose of the regulations will not be adversely affected by eliminating offsite emergency planning activities or reducing the scope of onsite emergency planning.

Revised radiological analyses have been developed that show that, 90 days after shutdown, the radiological consequences of design basis accidents will not exceed the limits of the EPA Protective Action Guides at the EAB. In addition, analyses have been developed for beyond design basis events related to the spent fuel pool which show that, within 17 months after shutdown, the analyzed event is either not credible, is capable of being mitigated, or the event's radiological consequences will not exceed the limits of the EPA Protective Action Guides at the EAB. Therefore, application of all of the standards and requirements in 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV are not necessary to achieve the underlying purpose of those rules.

Since the underlying purposes of the rules would continue to be achieved even with DEK being permitted to reduce the scope of emergency preparedness requirements consistent with the permanently defueled condition of the facility, the special circumstances required by 10 CFR 50.12(a)(2)(ii) exist.

- 2. Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated. (10 CFR 50.12(a)(2)(iii))**

Application of all of the standards and requirements in 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV is not needed for adequate emergency response capability and is excessive for a permanently defueled plant. Application of all of these standards and requirements would result in undue costs being incurred for the maintenance of an emergency response organization in excess of that actually needed to respond to the diminished scope of credible events. Other licensees similarly situated, such as Zion, have been granted similar exemptions.

Therefore, compliance with the rule would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others

similarly situated and the special circumstances required by 10 CFR 50.12(a)(2)(iii) exist.

3. The exemptions would result in benefit to the public health and safety that compensates for any decrease in safety that may result from the grant of the exemptions. (10 CFR 50.12(a)(2)(iv))

The plant is permanently shutdown and defueled and the radiological source term at the site is reduced from that associated with reactor power operation. With the reactor power plant permanently shutdown and defueled, the design basis accidents and transients postulated to occur during reactor operation are no longer possible. In particular, the potential for a release of a large radiological source term to the environment from the high pressures and temperatures associated with reactor operation no longer exists. Additionally, due to the radioactive decay of short lived isotopes, there is a continuing reduction in the potential radiological source term following the KPS plant shutdown on May 7, 2013.

The proposed exemptions would allow DEK to revise the station emergency plan to correspond to the reduced scope of remaining accidents and events. As such, the plan would no longer need to address response actions for events that would no longer be possible. The revised plan would thereby enhance the ability of the emergency response organization to respond to those scenarios that remain credible since emergency preparedness training and drills would focus only on applicable activities. Elimination of requirements for classification of emergency action levels for events that were no longer possible would enhance the ability of the ERO to correctly classify those events that remain credible. As the proposed exemption will enhance the ability of the organization to respond to credible events, a resultant benefit to the public health and safety is realized.

Therefore, since the granting the exemptions would result in benefit to the public health and safety and would not result in a decrease in safety, the special circumstances required by 10 CFR 50.12(a)(2)(iv) exist.

IV. ENVIRONMENTAL CONSIDERATION

When the exemptions become effective, there will be no credible events would result in doses to the public beyond the exclusion area boundary that would exceed the EPA PAGs. The proposed exemptions will not increase the probability or consequences of accidents. No changes are being made in the types or quantities of effluents that may be released offsite, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed exemptions. The proposed exemptions do not affect non-radiological plant effluents and have no other environmental impact. Therefore, there are no significant non-radiological impacts associated with the

proposed exemptions. Based on the assessment above, the proposed exemptions will not have a significant effect on the quality of the human environment.

V. CONCLUSION

Pursuant to the provisions of 10 CFR 50.12, "Specific exemptions," Dominion Energy Kewaunee, Inc. (DEK) is requesting exemptions 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV for Kewaunee Power Station (KPS). The proposed exemptions would allow DEK to revise the station emergency plan to correspond to the reduced scope of remaining accidents and events.

Granting these exemptions will be consistent with the purposes underlying NRC emergency preparedness regulations as it: (1) would continue to fulfill the underlying purposes of the rules while allowing DEK to reduce the scope of emergency preparedness requirements consistent with the permanently defueled condition of the facility; (2) would not result in significant environmental impacts not previously reviewed by the NRC; and (3) would not undermine the existing and continuing reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

This requested exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security, and special circumstances are present as set forth in 10 CFR 50.12(a)(2).

REFERENCES

1. Letter from Daniel G. Stoddard (DEK) to NRC Document Control Desk, "Certification of Permanent Cessation of Power Operations," dated February 25, 2013 (ADAMS Accession No. ML13058A065).
2. Letter from Daniel G. Stoddard (DEK) to NRC Document Control Desk, "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated May 14, 2013 (ADAMS Accession No. ML13135A209).
3. Letter from E. S. Grecheck (DEK) to NRC Document Control Desk, "License Amendment Request 256, Permanently Defueled License and Technical Specifications," dated May 29, 2013.
4. Generic Issue 199 (GI-199), "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants," Safety/Risk Assessment, August 2010.
5. Letter from Daniel G. Stoddard (DEK) to NRC Document Control Desk, "Post-Shutdown Decommissioning Activities Report," dated February 26, 2013 (ADAMS Accession No. ML13063A248).
6. Letter from Peter S. Tam (NRC) to David A. Christian (DEK), "Kewaunee Power Station - Issuance of Amendment RE: Analysis Methodology for the Auxiliary Building Crane (TAC No. MD9221)," dated April 30, 2009 (License Amendment 205).
7. Federal Register, Vol. 73, No. 154, Friday, August 8, 2008 (73 FR 46204); Nuclear Regulatory Commission; Petition for rulemaking; denial.
8. Office of Nuclear Regulatory Research Draft Report, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling Water Reactor," June 2013 (ADAMS Accession No. ML13133A132).
9. NUREG-1738, "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants," February 2001.
10. NUREG/CR-4982, "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82," July 1987.
11. NUREG/CR-6451, "A Safety and Regulatory Assessment of Generic BWR and PWR Permanently Shutdown Nuclear Power Plants," August 1997.