

# WOLF CREEK

NUCLEAR OPERATING CORPORATION

Russell A. Smith  
Site Vice President and Chief Nuclear Operating Officer

March 31, 2014

WO 14-0023

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

- References: 1) Letter dated March 12, 2012, from E. J. Leeds and M. R. Johnson, USNRC, to M. W. Sunseri, WCNOG, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events"
- 2) Letter WO 13-0014, dated February 28, 2013, from R. A. Smith, WCNOG, to USNRC

Subject: Docket No. 50-482: Request for Schedule Relaxation of NRC Order EA-12-049, Requirement IV.A.2, at Wolf Creek Generating Station

Gentlemen:

This letter transmits a request for relaxation of the requirements contained in Nuclear Regulatory Commission (NRC) Order EA-12-049. On March 12, 2012, the NRC issued an Order (Reference 1) to Wolf Creek Nuclear Operating Corporation (WCNOG). Reference 1 was immediately effective and directs WCNOG to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a Beyond-Design-Basis External Event (BDBEE). As described in the Overall Integrated Plan (OIP) for Wolf Creek Generating Station (WCGS) (Reference 2), one requirement of the mitigation strategies is dependent upon installation of Westinghouse low leakage Reactor Coolant Pump (RCP) shutdown seals (SHIELD® seals). The WCGS mitigation strategies are also dependent upon implementation of a missile protected water source for Auxiliary Feedwater (Condensate Storage Tank (CST)).

WCNOG installed the second generation (Gen II) SHIELD seals at WCGS during refueling outage 19 (fall 2013). Recent post-operational testing of the SHIELD seals at another plant has resulted in the need to enhance the SHIELD design. In addition, the current CST does not meet the missile protection requirements in NEI 12-06, Section 7, and is therefore not creditable for "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, as is. WCNOG is pursuing two avenues to ensure a seismic and missile protected water source exists

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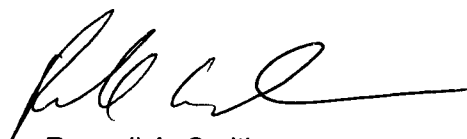
to meet Beyond Design Basis External Event requirements. The first is seismic qualification and missile protection of the existing Condensate Storage Tank (CST). The second is design and construction of an independent tank that meets the seismic and missile protection requirements of NEI 12-06. An extension of one additional refueling cycle to the completion of the fall 2016 refueling outage is therefore requested to install the next generation seal and modify the CST.

Section IV of NRC Order EA-12-049 (Reference 1) specifies that licensees proposing to deviate from requirements contained in NRC Order EA-12-049 may request that the Director, Office of Nuclear Reactor Regulation, relax those requirements. Therefore, in accordance with Section IV of NRC Order EA-12-049, WCNOG is requesting that the Director, Office of Nuclear Reactor Regulation, relax the requirement for completion of full implementation as prescribed in Section IV.A.2 of NRC Order EA-12-049 and as described in the attachment to this letter.

WCNOG considers that, upon approval by the NRC, the alternative full implementation dates regarding NRC Order EA-12-049 proposed in the attachment will constitute a condition of NRC Order EA-12-049 for WCGS. Therefore, there are no new regulatory commitments contained in this letter.

If you have any questions concerning this matter, please contact me at (620) 364-4156, or Mr. Michael J. Westman at (620) 364-4009.

Sincerely,



Russell A. Smith

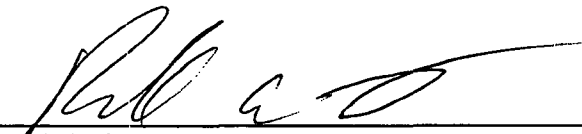
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Attachment

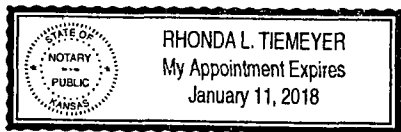
cc: M. L. Dapas (NRC), w/a  
C. F. Lyon (NRC), w/a  
N. F. O'Keefe (NRC), w/a  
Senior Resident Inspector (NRC), w/a

STATE OF KANSAS     )  
                                  ) SS  
COUNTY OF COFFEY )

Russell A. Smith, of lawful age, being first duly sworn upon oath says that he is Site Vice President and Chief Nuclear Operating Officer of Wolf Creek Nuclear Operating Corporation; that he has read the foregoing document and knows the contents thereof; that he has executed the same for and on behalf of said Corporation with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By   
Russell A. Smith  
Site Vice President and Chief Nuclear Operating Officer

SUBSCRIBED and sworn to before me this 31<sup>st</sup> day of March, 2014.



Rhonda L. Tiemeyer  
Notary Public

Expiration Date January 11, 2018

## **REQUEST FOR RELAXATION OF NRC ORDER EA-12-049 REQUIREMENT IV.A.2 FOR WOLF CREEK GENERATING STATION**

### **Relaxation Request**

Pursuant to the procedure specified in Section IV of Nuclear Regulatory Commission (NRC) Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (Reference 1), Wolf Creek Nuclear Operating Corporation (WCNOC) hereby submits a request for schedule relaxation from the Order requirements for completion of full implementation for Wolf Creek Generating Station (WCGS) either no later than two (2) refueling cycles after submittal of the Overall Integrated Plan (OIP), as required in Condition C.1.a of the Order, or December 31, 2016, whichever comes first.

### **Order Requirement from Which Relaxation is Requested**

#### ***SHIELD Seals***

NRC Order EA-12-049, Section IV.A.2 requires completion of full implementation of the Order requirements either no later than two (2) refueling cycles after submittal of the OIP, as required by Condition C.1.a, or December 31, 2016, whichever comes first. In accordance with the requirements of the Order, WCNOC submitted the OIP for WCGS (Reference 2) on February 28, 2013. The OIP milestone schedule identified the completion dates for full implementation of NRC Order EA-12-049 as completion of the spring 2015 refueling outage for WCGS.

NRC Order EA-12-049 requires the development, implementation, and maintenance of guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a Beyond-Design-Basis External Events (BDBEE). As described in the OIP for WCGS, these mitigation strategies are dependent upon installation of Westinghouse low leakage Reactor Coolant Pump (RCP) shutdown seals (SHIELD® seals). WCNOC recently installed the second generation (Gen II) SHIELD seals at WCGS during refueling outage 19 (fall 2013). Recent post-operational testing of the SHIELD seals at another plant has resulted in the need to enhance the SHIELD design. The new seals will ensure the safety functions of containment integrity (during an extended loss of alternating current power or ELAP), and core cooling (RCS inventory and level) are maintained for BDBEES.

#### ***Condensate Storage Tank***

In addition to the SHIELD seals, the WCGS mitigation strategies are dependent upon a protected water source for Auxiliary Feedwater (Condensate Storage Tank (CST)). The current CST does not meet seismic requirements of Expedited Seismic Evaluation Process (ESEP) or the missile protection requirements in NEI 12-06 "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, Section 7 and therefore is not creditable for FLEX as is. WCNOC is pursuing two avenues to ensure a seismic and missile protected water source exists to meet Beyond Design Basis External Event requirements. The first is seismic qualification and missile protection of the existing Condensate Storage Tank (CST). The second is design and construction of an independent tank that meets the seismic and missile protection requirements of NEI 12-06.

## **Justification for Relaxation Request**

### ***SHIELD Seals***

The SHIELD seals provide additional safety margin during a BDBEE by serving as a passive means of protecting the reactor. The seals reduce the risk to the plant (Core Damage Frequency) by limiting the loss of reactor coolant system (RCS) water inventory during the event.

The implications of the failure of Westinghouse SHIELD shutdown seals for RCPs are currently being assessed. Resolution of issues will require additional analytical work, and a FLEX white paper and Topical Report are being developed by Westinghouse to provide the NRC with appropriate data to have higher confidence in the next generation SHIELD design. The FLEX white paper is expected to be submitted to the NRC in March 2014. The Topical Report is expected to be issued to the NRC in March 2014. Upon receipt of these documents, NRC review and acceptance of the next generation seals would be required.

Based on this timeline, full implementation of the mitigation strategies in accordance with NRC Order EA-12-049 would not be completed by the Order requirement date, since NRC acceptance of the Topical Report is essential to the full implementation of mitigation strategies required by the Order. The current required implementation date is completion of the spring 2015 refueling outage. An extension of one additional refueling cycle is requested, which would move the implementation date to completion of the fall 2016 refueling outage, which is still within the maximum allowed timeframe of December 2016. The extension would provide additional time for Westinghouse to fully design, test, qualify, and obtain NRC acceptance on the new generation seals, and for WCNOG to safely plan, schedule, and install the next generation SHIELD seals at the WCGS.

Compliance with the Order requirement date (of spring 2015 refueling outage) would require WCNOG to revise the WCGS strategies for core cooling (RCS inventory control) from 10 gpm to 40 gpm of boration/makeup. This would require additional analytical work and has a high potential for changing modifications that are currently planned for refueling outage 20 (spring 2015). Relaxation provides additional time to resolve industry issues and fully design and safely implement the next generation SHIELD seals. Additionally, the new seals will provide added safety margin during a BDBEE.

### ***Condensate Storage Tank***

Based on the complex analysis, design, lead time for materials and construction time for the modification to meet seismic requirements of ESEP and missile protection of NEI 12-06 full implementation of the mitigation strategies in accordance with NRC Order EA-12-049 would not be completed by the Order requirement date. The current required implementation date is completion of the spring 2015 refueling outage. An extension of one additional refueling cycle is requested which would move the implementation date to completion of the fall 2016 refueling outage, which is still within the maximum allowed timeframe of December 2016.

### **Conclusion**

The WCGS FLEX strategies rely on the low leakage RCP seals and a seismic and missile protected CST. As described above, compliance with the current NRC Order EA-12-049 schedule requirement for full completion of implementation of mitigation strategies would result in hardship or unusual difficulty without a compensating increase in the level of safety. Therefore, in accordance with the provisions of Section IV of the Order, WCNOG requests relaxation of the requirement described in Section IV.A.2, as explained above.

### **References**

1. Letter from E. J. Leeds and M. R. Johnson, USNRC, to M. W. Sunseri , WCNOG, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," March 12, 2012. ADAMS Accession No. ML12054A735.
2. WCNOG letter WO 13-0014, "Wolf Creek Nuclear Operating Corporation Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," February 28, 2013. ADAMS Accession No. ML13070A026.