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Vice President Engineering

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ET 15-0009

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

**Subject: Docket No. 50-482: 10 CFR 50.55a Request I3R-12, Extension of the Third Inservice Inspection Program Interval to Perform Reactor Vessel Stud Hole Ligament Examinations**

Gentlemen:

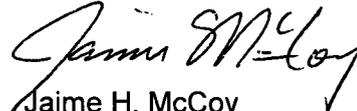
Pursuant to 10 CFR 50.55a(z)(2), Wolf Creek Nuclear Operating Corporation (WCNOC) hereby requests Nuclear Regulatory Commission (NRC) approval of the attached 10 CFR 50.55a Request I3R-12 for the Third Ten-Year Interval of WCNOC's Inservice Inspection (ISI) Program. The Attachment requests an extension of WCNOC's Third Ten-Year ISI Interval by approximately three months beyond the ASME Section XI IWA-2430(d)(1) Code-allowed end of interval extension. This will allow time for NRC evaluation of WCNOC's Third Interval implementation of Reactor Vessel (RV) stud hole ligament examinations and for WCNOC to re-perform these examinations in the extended Third Interval if the NRC concludes WCNOC's implementation is not in compliance with Code requirements and that such re-examinations are required. WCNOC has performed the required examinations on all of the RV stud hole ligaments during the Third Ten-Year ISI Interval and it is WCNOC's position that these examinations have been performed in accordance with ASME Code requirements. However an unresolved item was developed during the ISI inspection in April 2015 that challenges the examination results. Therefore, these additional examinations will only be required if during resolution of the unresolved item the NRC concludes that the examinations that have been performed on the RV stud hole ligaments during the Third Ten-Year ISI Interval do not meet ASME Code requirements and must be re-performed.

If needed, the re-performance of these examinations would be completed during Refueling Outage 21, which is scheduled to begin September 24, 2016. The Third Ten-Year Interval of WCNOC's ISI Program ends September 2, 2015. Therefore, approval is requested by July 31, 2015.

AD4T  
NRR

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4156, or Mr. Steven R. Koenig at (620) 364-4041.

Sincerely,



Jaime H. McCoy

JHM/rit

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

**Wolf Creek Nuclear Operating Corporation**

**10 CFR 50.55a Request I3R-12**

**Request for Extension of the Third Inservice  
Inspection Program Interval to Perform Reactor  
Vessel Stud Hole Ligament Examinations**

## 10 CFR 50.55a Request I3R-12

### Request for Extension of Third Inservice Inspection Interval for Performing Reactor Vessel Head Stud Hole Ligament Examinations

#### Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2) Hardship Without a Compensating Increase in Quality and Safety

#### 1.0 ASME Code Components Affected

The affected components are the 54 threaded stud holes in the Reactor Vessel (RV) flange. The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI, Code Case N-652, examination category and item number covering the required examination are Examination Category B-G-1, Item Number B6.40 "Threads in Flange".

#### 2.0 Applicable Code Edition and Addenda

ASME BPV Code, Section XI, 1998 Edition through 2000 Addenda and Code Case N-652.

#### 3.0 Applicable Code Requirement

Code Case N-652 requires volumetric examination of Category B-G-1, Item Number B6.40, Threads in RV Flange. ASME Section XI IWA-2232 requires these ultrasonic examinations to be conducted in accordance with Mandatory Appendix I. ASME Section XI, Mandatory Appendix I, Paragraph I-2400 requires that ultrasonic examinations shall be conducted in accordance with the applicable requirements of ASME BPV Code, Section V, Article 4 as supplemented by Table I-2000-1. The examination volume is defined in Section XI Figure IWB-2500-12 as a one inch annulus around the threaded portion of each RV stud hole in the RV flange and extending one stud diameter below the start of the threads.

#### 4.0 Reason for Request

In 2003, Wolf Creek Nuclear Operating Corporation (WCNOC) began performing the RV stud hole ligament ultrasonic examinations under water while the refueling cavity is flooded using specifically procured tooling and equipment for this examination to reduce personnel exposure and to move the examination off of critical path work. Approximately one-third of the 54 stud holes were examined in each of the three Periods in the Ten-Year Inservice Inspection (ISI) Interval.

During the most recent Nuclear Regulatory Commission (NRC) Inservice Inspection (ISI), the inspector questioned the use of this tooling and the resulting examination volume achieved when using the tooling versus the Code required examination volume (refer to ASME, Section XI, Figure IWB-2500-12). This tooling positions the UT transducer relative to the stud hole using the installed stud hole plug or RV Head alignment pin and an associated long-handled tool for placement of the tooling and moving the transducer for scanning of the volume. The NRC inspector's position was that the use of the tooling would not result in the maximum achievable examination volume. He stated that, although NRC Information Notice IN 98-42 allows for crediting "essentially 100%", when greater than 90% coverage is obtained, this only applies when limited by geometry or any other

restrictions caused by design or configuration issues. The inspector's position is that more coverage would be achieved if WCNOG performed the examination without the use of the tooling and without stud hole plugs in place.

The as-constructed configuration of the Wolf Creek Generating Station (WCGS) RV flange and stud holes does actually preclude obtaining 100% coverage of the Code required examination volume. Additionally, WCNOG has concluded that greater than 99% of the required volume is achieved when using this tooling and equipment to conduct the examination in accordance with the applicable requirements of ASME Section V, Article 4. The NRC is currently considering WCNOG's compliance with ASME Section V requirements and whether the percentage of examination coverage was correctly determined based on these Code requirements.

WCNOG is requesting an extension of its Third ISI Interval to allow time for these NRC considerations and for WCNOG and NRC discussions of these Code compliance issues. Additionally, relief is requested to ensure that re-examination of all of the RV stud hole ligaments could be performed in the next scheduled refueling outage, if the final conclusion is that the examinations and thereby the percentage of examination coverage do not meet ASME Code requirements and that such re-examinations are actually required. If these additional examinations are necessary, the extension will give WCNOG sufficient time to properly plan and implement these re-examinations for the Third ISI Interval.

#### **5.0 Proposed Alternative and Basis for Use**

The end of the third period of the Third Inspection Interval is September 2, 2015 based on initial commercial operation on September 3, 1985. In the event that the NRC concludes that the examinations of the RV stud hole ligaments are not in compliance with ASME Section XI requirements and that re-performance of the examinations is required, the proposed alternative will allow time to re-perform the ultrasonic examinations for all 54 RV stud hole ligaments in Refueling Outage 21 (RF 21), which is scheduled to begin on September 24, 2016. Per ASME Section XI, IWA-2430(d)(1), the Third ISI Interval can be extended by up to 1 year. The performance of these examinations during RF 21 will occur outside the 1-year extension window by approximately 3 months. In accordance with 10 CFR 50.55a(z)(2), this interval extension is requested on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. This request is similar to the NRC recently authorized use of WCNOG Request I3R-08, which similarly requested extension of the Third Interval for performance of ASME Section XI Category B-N-2 and B-N-3 examinations in RF21.

WCNOG is currently in Refueling Outage 20 (RF 20), which is the last refueling outage of its Third ISI Interval. To attempt to perform the examinations on all of the RV stud hole ligaments in a different and unplanned manner at the current stage of RF 20 would create a hardship without a compensating increase in the level of quality and safety. In addition, the dose absorbed by workers to perform these exams in RF20 is estimated to be approximately 750 mrem, which would be unnecessary if the NRC concludes that the previously performed examinations are acceptable.

It is WCNOG's position that the ultrasonic examinations of the RV stud hole ligaments, which have been performed during its Third ISI Interval meet the ASME Code requirements. This request for extension allows time for further consideration and

resolution of the Code requirements. However, if it is determined that the examinations which have been performed do not meet ASME Code requirements and are required to be re-performed, this request for extension will give WCNOG the time to perform proper planning to ensure that the examinations are done with the appropriate level of quality and safety, to minimize radiation exposure, and to ensure that the examinations are in complete compliance with the ASME Code.

#### **6.0 Duration of Proposed Alternative**

WCNOG's Third Ten-Year ISI Interval will end on September 2, 2015. The alternative is requested to extend the WCNOG Third ISI Interval by approximately 3 months past the ASME Section XI IWA-2430(d)(1) Code allowed extension of 1 year for the potential re-performance of the examinations identified in Section 1.0 of this request. This request is applicable to the Third Inspection Interval only. If this relief request is approved, the Third Inspection Interval for these examinations will end at the conclusion of RF 21, (Fall of 2016).

This extension will not affect the start of the fourth inspection interval so it will not impact the overall schedule of WCNOG's ISI examinations.