WOLF CREEK
NUCLEAR OPERATING CORPORATION

June 10, 2010

Terry J. Garrett
Vice President Engineering

ET 10-0019

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

Subject: Docket 50-482: 10 CFR 50.55a Request for Alternative to ASME Code Case N-579, "Use of Nonstandard Nuts, Class 1, 2, and 3, MC, CS Components and Supports Construction Section III, Division 1"

Gentlemen:

Pursuant to 10 CFR 50.55a(a)(3)(i), Wolf Creek Nuclear Operating Corporation (WCNOC) hereby requests Nuclear Regulatory Commission (NRC) approval of the attached 10 CFR 50.55a Request for the Third Ten-Year Interval of WCNOC's Inservice Inspection (ISI) Program.

The attached 10 CFR 50.55a Request proposes an alternative to the requirements of ASME Boiler and Pressure Vessel Code, Section III, Code Case N-579, "Use of Nonstandard Nuts, Class 1, 2, and 3, MC, CS Components and Supports Construction Section III, Division 1." The proposed alternative provides an acceptable level of quality and safety as required by 10 CFR 50.55a(a)(3)(i).

WCNOC requests approval of the attached 10 CFR 50.55a Request by December 30, 2010, to support planning for Refueling Outage 18, which is scheduled to begin in March, 2011.

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NRR

There are no commitments contained within this letter. If you have any questions, please contact me at (620) 364-4084 or Mr. Richard Flannigan at (620) 364-4117.

Sincerely,

Terry J. Garrett

TJG/rlt

Attachment: 10 CFR 50.55a Request

cc: E. E. Collins (NRC), w/a
G. B. Miller (NRC), w/a
B. K. Singal (NRC), w/a
Senior Resident Inspector (NRC), w/a

Wolf Creek Nuclear Operating Corporation
10 CFR 50.55a Request
Alternative to the requirements of ASME Boiler and Pressure Vessel Code, Section III, Code Case N-579

10 CFR 50.55a Request

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

The Excess Letdown Heat Exchanger (EBG02) channel head joint flange-bolting replacement (ASME Class 2).

2. Applicable Code Edition and Addenda

The bolting replacement will be performed as a repair/replacement activity under the jurisdiction of the ASME Boiler and Pressure Vessel Code, Section XI. The 1998 Edition through the 2000 Addenda is the applicable Section XI edition and addenda for Wolf Creek Nuclear Operating Corporation's (WCNOC's) third inservice inspection interval. Section XI IWA-4000 requires use of portions of the original Construction Code and allows use of Construction Code, Code Cases. For the Excess Letdown Heat Exchanger, the applicable Construction Code is ASME Section III, 1974 Edition including Summer 1975 Addendum.

Code Case N-579, "Use of Nonstandard Nuts, Class 1, 2, and 3, MC, CS Components and Supports Construction Section III, Division 1," is approved for use by the Nuclear Regulatory Commission (NRC) as documented in Regulatory Guide 1.84, "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III," Revision 34, dated October 2007.

3. Applicable Code Requirement

Relief is requested from the ASME Section XI repair/replacement activity requirements for the replacement bolting in accordance with Code Case N-579. The specific requirements in Code Case N-579 for which relief is requested are the use of SA-194 material specified in Code Case N-579 for the nonstandard hydraulic nuts and conformance of thread configuration to ASME B1.1.

4. Reason for Request

The excess letdown heat exchanger flange is located in a high radiation area in the reactor coolant loop 4 area inside the secondary shield wall of the reactor building. The excess letdown heat exchanger flange has had chronic boric acid leakage at various times. Prior efforts to stop the leakage with gasket replacement and bolt torquing adjustments have not been successful and have caused unnecessary radiation exposure to maintenance personnel. The joint is being redesigned to use hydraulic tensioning nuts (HydraNuts) to assure consistent loading around the joint as well as to reduce personnel exposure by reducing maintenance time in the area.

5. Proposed Alternative and Basis for Use

SA-540 Grade B23 material meeting the requirements for bolting material in Section III, paragraph NC-2127(a), will be used to fabricate the hydraulic nuts for the excess letdown heat exchanger flange instead of the SA-194 material specified in Code Case N-579. No torque wrench is required for installation since HydraNuts employ a stud tensioning process that tensions all twelve (12) studs simultaneously. The hydraulic nuts will incorporate a proprietary outside thread design providing minimized thread deflection to maximize retained load and allow lower preload to be used in contrast to standard threads manufactured in accordance with ASME B1.1.

ASME SA-540 Grade B23 material, which is an approved Section III material for Class 2 bolting and has sufficient strength for the application, will be used instead of SA-194 for manufacture of the hydraulic nuts.

Code Case N-579 requires the screw threads of nonstandard nuts be manufactured to meet the requirements for threads in ASME B1.1. While the inside threads of the hydraulic nuts conform to ASME B1.1, the outside threads have a proprietary thread design developed by the vendor, Nova-Technofast, which minimizes thread deflection between the nut and lock ring and thereby minimizes loss of pre-load.

Basis for Use

Use of Section III approved SA-540 Grade B23 material in lieu of the SA-194 material specified in Code Case N-579 will assure adequate strength in the joint. The special thread design of the outside threads of the hydraulic nuts minimizes thread deflection and loss of preload. Use of these nonstandard nuts is expected to eliminate leakage from the joint while reducing radiation exposure to maintenance personnel by reducing maintenance time in the area. These advantages provide an equivalent level of quality and safety in accordance with 10CFR50.55a(a)(3)(i).

6. Duration of Proposed Alternative

This relief request will be implemented during the Wolf Creek Generating Station (WCGS) refueling outage number 18 and will remain permanently installed in the plant. This is a new request based on approved Code Case N-579.

7. Precedents

A similar request was granted for Diablo Canyon Power Plant (ML040560538). PG&E Letter DCL-04-016, Dated February 12, 2004, to USNRC: Docket Nos. 50-275 and 50-323, Diablo Canyon Units 1 and 2, "Inservice Inspection Relief Request for ASME Code Case N-579," and the associated NRC Safety Evaluation (SE) dated July 29, 2004. The PG&E Relief Request asked for approval to use hydraulic nuts developed by Nova-Technofast for their excess letdown heat exchanger. The NRC SE found the use of SA-540 Grade B23 material acceptable because it is listed as an acceptable material for Class 2 bolting in Section III of the Code. The NRC also found the use of the proprietary outside thread design acceptable because the design minimizes thread deflection between the nut and lock ring and thus the loss of pre-load is minimized.