

July 13, 2000

Mr. Otto L. Maynard  
President and Chief Executive Officer  
Wolf Creek Nuclear Operating Corporation  
Post Office Box 411  
Burlington, KA 66839

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING RELIEF REQUESTS  
CI1R-01 AND CI1R-02 FOR THE WOLF CREEK GENERATING STATION (TAC  
NO. MA8393)

Dear Mr. Maynard:

By letters dated February 25, 2000, and May 9, 2000, you requested the NRC staff's approval for use of alternatives to the requirements in Section XI of the 1992 Edition, with the 1992 Addenda, of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. This is for (1) the inservice inspection of Class MC, and metallic shell and penetration liners of Class CC pressure retaining components and their integral attachments in Subsection IWE (relief request CI1R-01), and (2) the inservice inspection of Class CC components in Subsection IWL (relief request CI1R-02). You stated that you needed the relief requests for the upcoming refueling outage scheduled to begin on September 30, 2000.

Enclosed is a request for additional information needed by the staff for the two relief requests. You are requested to provide the additional information within 45 days of the receipt of this letter for the staff to complete its review before the start of the upcoming refueling outage. The additional information needed was discussed with your staff in conference calls on June 28 and July 6, 2000. If you have any questions, please contact me at 301-415-1347 or through the internet at [jnd@nrc.gov](mailto:jnd@nrc.gov).

Sincerely,

*/RA/*

Jack Donohew, Senior Project Manager, Section 2  
Project Directorate IV & Decommissioning  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosure: Request for Additional Information

cc w/encl: See next page

July 13, 2000

Mr. Otto L. Maynard  
President and Chief Executive Officer  
Wolf Creek Nuclear Operating Corporation  
Post Office Box 411  
Burlington, KA 66839

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING RELIEF REQUESTS  
CI1R-01 AND CI1R-02 FOR WOLF CREEK GENERATING STATION (TAC  
NO. MA8393)

Dear Mr. Maynard:

By letter dated February 25, 2000, and May 9, 2000, you requested the NRC staff's approval for use of alternatives to the requirements in Section XI of the 1992 Edition, with the 1992 Addenda, of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. This is for (1) the inservice inspection of Class MC, and metallic shell and penetration liners of Class CC pressure retaining components and their integral attachments in Subsection IWE (relief request CI1R-01), and (2) the inservice inspection of Class CC components in Subsection IWL (relief request CI1R-02). You stated that you needed the relief requests for the upcoming refueling outage scheduled to begin on September 30, 2000.

Enclosed is a request for additional information needed by the staff for the two relief requests. You are requested to provide the additional information within 45 days of the receipt of this letter for the staff to complete its review before the start of the upcoming refueling outage. The additional information needed was discussed with your staff in conference calls on June 28 and July 6, 2000. If you have any questions, please contact me at 301-415-1347 or through the internet at jnd@nrc.gov.

Sincerely,

**/RA/**

Jack Donohew, Senior Project Manager, Section 2  
Project Directorate IV & Decommissioning  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosure: Request for Additional Information

cc w/encl: See next page

DISTRIBUTION:

PUBLIC  
PDIV-2 Reading  
RidsNrrDlpm (SBlack)  
RidsNrrDlpmPdiv(SRichards)  
RidsNrrPMJDonohew  
RidsNrrLAEPeyton  
RidsOGCRp  
RidsAcrsAcnwMailCenter  
GImbro  
WJohnson, RIV  
LBerry

EMEB RAI Memo dated 06/15/00

**Accession No.** ML003731802

\* See previous concurrence

OFFICE	PDIV-2/PM	PDIV-2/LA	EMEB	PDIV-2/SC
NAME	JDonohew:lcc	EPeyton	HAshar*	SDembek
DATE	07/12/00	07/12/00	07/11/00	07/13/00

OFFICIAL RECORD COPY

Wolf Creek Generating Station

cc:

Jay Silberg, Esq.  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, NW  
Washington, D.C. 20037

Vice President & Chief Operating Officer  
Wolf Creek Nuclear Operating Corporation  
P. O. Box 411  
Burlington, KA 66839

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011

Superintendent Licensing  
Wolf Creek Nuclear Operating Corporation  
P.O. Box 411  
Burlington, KA 66839

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
P. O. Box 311  
Burlington, KA 66839

U.S. Nuclear Regulatory Commission  
Resident Inspectors Office  
8201 NRC Road  
Steedman, MO 65077-1032

Chief Engineer  
Utilities Division  
Kansas Corporation Commission  
1500 SW Arrowhead Road  
Topeka, KA 66604-4027

Office of the Governor  
State of Kansas  
Topeka, KA 66612

Attorney General  
Judicial Center  
301 S.W. 10th  
2nd Floor  
Topeka, KA 66612

County Clerk  
Coffey County Courthouse  
Burlington, KA 66839

Vick L. Cooper, Chief  
Radiation Control Program, RCP  
Kansas Department of Health  
and Environment  
Bureau of Air and Radiation  
Forbes Field Building 283  
Topeka, KA 66620

REQUEST FOR ADDITIONAL INFORMATION  
RELATED TO RELIEF REQUESTS CI1R-01 AND CI1R-02  
WOLF CREEK NUCLEAR OPERATING CORPORATION  
WOLF CREEK GENERATING STATION  
DOCKET NO. 50-482

By letters dated February 25, 2000, and May 9, 2000, Wolf Creek Nuclear Operating Corporation (the licensee) submitted requests for relief CI1R-01, Revision 1 and CI1R-02, Revision 1, for the first 10-year inspection interval of the containment inservice inspection (ISI) program for the Wolf Creek Generating Station (WCGS). The requests contain proposed alternatives to the use of the 1998 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code Section XI in lieu of the 1992 Edition/1992 Addenda for IWE/IWL inspections, as required by the regulations. The Idaho National Engineering and Environmental Laboratory, a contractor for the NRC staff, has reviewed the information provided by the licensee in the two subject requests for relief.

The staff has determined, with input from the contractor, that certain changes in requirements, as found in the 1998 Code Edition do not provide an acceptable level of quality and safety. Therefore, the licensee should augment these requirements in order for the use of the 1998 Edition to be authorized. The following additional information and confirmations are required to complete the evaluation of the subject requests for relief.

1. The 1998 Code Edition, Articles IWE and IWL, defer to *owner-defined* general and detailed visual examinations in lieu of accepted visual examination requirements, as currently described in IWA-2000. To establish that the licensee's alternative provides an acceptable level of quality and safety, certain aspects of the licensee's general and detailed visual examination program, addressing both IWE and IWL components, are needed. The licensee is requested to describe the following attributes of its visual examination program:
  - a. The licensee stated that a performance demonstration will be developed and documented to establish the distances and illumination for which the general and detailed visual examinations are sufficient to detect evidence of degradation that may affect the containment structural integrity or leak tightness. However, it is not clear how this performance demonstration will be conducted. For example, does the licensee intend to develop a separate performance demonstration for both direct and remote examinations? Will the resolution requirements be equivalent for both remote and direct examinations? The licensee is requested to describe all attributes of the performance demonstration process.

- b. The IWE-2500(b) requirement to examine paint or coatings prior to removal has been eliminated from the 1998 Edition. Relief from this requirement has been found acceptable when adequate provisions exist either in the licensee's containment inspection, repair/replacement, nuclear coatings, or ISI programs. In addition, the base metal should be visually examined prior to recoating by qualified inspection personnel. It appears from the licensee's submittal that it utilizes a coatings pre-application inspection; however, it is unclear what this inspection involves. The licensee is requested to describe the inspection performed as well as the qualifications of the individuals performing the inspections.
2. Examination Category E-G, Pressure Retaining Bolting, has been removed from Table IWE-2500-1 in the 1998 Edition. The 1992 Edition requires a visual examination (VT-1) of bolting when a connection is disassembled. The 1998 Edition requires a general visual examination, performed in place, with no requirement for visual examination when the joint is disassembled. It is not clear what, if any, examinations will be performed on disassembled bolted connections. The licensee is requested to explain what examinations will be performed on disassembled bolting. If VT-1 examinations will not be performed, the licensee is requested to provide an explanation and basis for how this practice provides an acceptable (equivalent) level of quality and safety as that required by the 1992 Edition/Addenda.

The staff's interim position on code requirements for visual examinations of bolted connections and acceptable alternatives (1992 and 1998 Edition of ASME Section XI, IWE) is attached to this request for additional information.

3. IWL-2410 allows for deferral of concrete visual exams to the next scheduled plant outage for portions of the concrete surface which cannot be examined within the stated time interval. This may be considered acceptable provided credit for the examination is not taken for two intervals simultaneously. The licensee is requested to confirm that this condition will be met.

Attachment: Staff Interim Position

## Code Requirements for Visual Examination of Bolted Connections and Acceptable Alternatives (1992 and 1998 Edition of ASME Section XI, IWE)

The 1992 Edition of IWE, Table IWE-2500-1, Examination Category E-G, Item No. E8.10 requires that 100% of all bolted connections be visually examined (VT-1) each inspection interval. All visible surfaces shall be examined. The bolted connections do not need to be disassembled solely for the purpose of performing the visual examination. Examination of the bushings, threads, and ligaments in the base material of flanges is only required when the connection is disassembled, because only when disassembled, do they become visually accessible.

Some licensees feel that it is burdensome to perform VT-1 examinations on all bolted connections and have requested relief from this Code requirement. The staff has determined that an acceptable alternative is for licensees to perform a VT-3 examination on all bolted connections. If an area is found to be suspect, then a VT-1 examination must be performed to determine the magnitude and extent of degradation. If required, the bolted connection must be disassembled to support the VT-1 examination. This alternative has been authorized in the Robinson safety evaluation (SE) dated July 26, 1999, the Brunswick SE dated August 10, 1999, and the Quad Cities SE dated January 10, 2000.

During the staff's review of authorized alternatives to the 1992 Edition of the Code, an inconsistency was noted. The SE for Peach Bottom authorized an alternative to perform a VT-3 examination on the accessible surface areas of bolted connections. In its proposed alternative, the licensee did not state that a VT-1 examination would be performed if flaws or degradation was noted.

In the 1998 Edition of IWE, the requirements for bolted connections have been moved to Examination Category E-A, Item E1.10, Containment Vessel Pressure Retaining Boundary and Item E1.11, Accessible Surface Areas. The 1998 Edition requires that 100% of the accessible surface areas of the containment vessel pressure retaining boundary be visually examined (general visual or VT-3) during each inspection period. This corresponds to an examination of all bolted connections three times per inspection interval. Included in the examination are bolts, studs, nuts, bushings, washers, and threads in base material and flange ligaments between fastener holes. The Code does not require that the bolted connection be disassembled for performance of the examination.

The staff has determined that these requirements for visual examination of bolted connections do not provide an acceptable level of quality and safety and must be supplemented. If during the performance of the general visual examination (VT-3 or equivalent), flaws or degradation are indicated, the examination must be supplemented with a detailed visual examination (VT-1 or equivalent) on the suspect areas. In addition, indication of damage on assembled bolted connections will require that the connection be disassembled to facilitate the detailed visual examination. If a bolted connection is disassembled at the time of inspection, all accessible surface areas of the connection shall be visually examined (VT-3 or VT-1 if necessary). If a

disassembled connection is not visually examined by a VT-3 or VT-1 qualified individual before reassembly, written maintenance procedures shall be followed to ensure that the integrity of reassembled bolted connections are maintained. The written procedures shall include acceptance criteria for the continued use of all parts of the connection including bolts, studs, nuts, bushings, washers, and threads in base material and flange ligaments between fastener holes.

The alternative proposed by Callaway and authorized in an SE dated November 26, 1999, stated that a VT-1 examination will be conducted on all accessible bolted connections and when disassembled, a VT-1 will be performed on all exposed surfaces. Visual examination of bolted connections was not specifically address for the other licensee which has been authorized to use the 1998 Edition of IWE (Comanche Peak). The SE authorized verification of leak-tight integrity of bolted penetrations by performance of an Appendix J, Type A test. However, the intention was to authorize Appendix J testing as an alternative to bolt torque and tension testing only.

Use of 1998 Edition, Table IWE-2500-1, Category E-A: Minimum Examination Requirements for an Acceptable Alternative to the 1992 Edition, Table IWE-2500-1, Category E-G, Item E8.10

All accessible bolted connections shall be visually examined each inspection period per the requirements of the 1998 Edition of ASME Section XI, Table IWE-2500-1, Category E-A. This corresponds to an examination of all bolted connections three times per inspection interval. The licensee shall perform a general visual examination (VT-3 or equivalent) on the exposed portions of the connection. Bolted connections need not be disassembled solely for the performance of VT-3 examinations. However, if the general visual examination indicates possible areas of degradation or damage, a detailed visual examination (VT-1 or equivalent) is required. Based on the magnitude and extent of degradation, the Responsible Individual shall determine if the bolted connection needs to be disassembled for further evaluation.

If a bolted connection is disassembled at the time of periodic inspection, all accessible surface areas of the connection shall be visually examined [general (VT-3), or detailed (VT-1), if necessary]. If a disassembled connection is not examined by a qualified visual examiner before reassembly (e.g., between the scheduled inspections), written maintenance procedures shall be followed to ensure that the integrity of reassembled bolted connections are maintained. The written procedures shall include acceptance criteria for the continued use of all parts of the connection including bolts, studs, nuts, bushings, washers, threads in base material and flange ligaments between fastener holes.