

# WOLF CREEK

NUCLEAR OPERATING CORPORATION

Richard A. Muench  
President and Chief Executive Officer

**JAN 22 2004**

WM 04-0001

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

Subject: Docket No. 50-482: 60-Day Report for NRC Order EA-03-009,  
"Issuance of Order Establishing Interim Inspection Requirements for  
Reactor Pressure Vessel Heads at Pressurized Water Reactors"

Gentlemen:

The attachment contains the Wolf Creek Nuclear Operating Corporation (WCNOC) report for the 60-day requirement of U.S. Nuclear Regulatory Commission (NRC) Order EA-03-009, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated February 11, 2003. Paragraph IV.E of the order requires, within 60 days after returning the plant to operation, the submittal of a report detailing the results of inspections of the reactor pressure vessel head surface and penetrations. Wolf Creek Generating Station returned to operation following Refuel 13 on December 2, 2003.

No commitments are identified in this submittal. If you have any questions concerning this matter, please contact me at (620) 364-4000, or Mr. Kevin Moles at (620) 364-4126.

Very truly yours,



Richard A. Muench

RAM/rlg

Attachment

cc: J. N. Donohew (NRC), w/a  
D. N. Graves (NRC), w/a  
B. S. Mallett (NRC), w/a  
Senior Resident Inspector (NRC), w/a

A101

STATE OF KANSAS )  
 ) SS  
COUNTY OF COFFEY )

Richard A. Muench, of lawful age, being first duly sworn upon oath says that he is President and Chief Executive 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 *RAMuench*  
Richard A. Muench  
President and Chief Executive Officer

SUBSCRIBED and sworn to before me this 22<sup>nd</sup> day of Jan, 2004.



*Cindy Novinger*  
Notary Public

Expiration Date July 8, 2006

**60-Day Report for NRC Order EA-03-009  
"Issuance of Order Establishing Interim Inspection Requirements  
for Reactor Pressure Vessel Heads at Pressurized Water Reactors"**

Below is the Wolf Creek Nuclear Operating Corporation (WCNOC) report for the 60-day requirement of paragraph IV.E of U.S. Nuclear Regulatory Commission (NRC) Order EA-03-009, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated February 11, 2003. The order's "Required Information" is shown in bold.

**Required Information**

**IV.C. (Excerpts)**

**All Licensees shall perform inspections of the RPV head using the following techniques and frequencies:**

**(3) For those plants in the Low category, RPV head and head penetration nozzle inspections shall be performed as follows. An inspection meeting the requirements of 3(a) must be completed at least every third refueling outage or every five (5) years, whichever occurs first.**

**(a) Bare metal visual examination of 100% of the RPV head surface (including 360° around each RPV head penetration nozzle).**

**IV.D. During each refueling outage, visual inspections shall be performed to identify potential boric acid leaks from pressure-retaining components above the RPV head. For any plant with boron deposits on the surface of the RPV head or related insulation, discovered either during the inspections required by this Order or otherwise and regardless of the source of the deposit, before returning the plant to operation the Licensee shall perform inspections of the affected RPV head surface and penetrations appropriate to the conditions found to verify the integrity of the affected area and penetrations.**

**IV.E. For each inspection required in Paragraph C, the Licensee shall submit a report detailing the inspection results within sixty (60) days after returning the plant to operation. For each inspection required in Paragraph D, the Licensee shall submit a report detailing the inspection results within sixty (60) days after returning the plant to operation if a leak or boron deposit was found during the inspection.**

**Response**

An inspection meeting the requirements of paragraph IV.C.(3)(a) of the order was conducted in March 2002, in response to NRC Bulletin 2002-01. The inspection results were submitted in Reference 1 in response to Item 2.A of Bulletin 2002-01. In Reference 2, the NRC acknowledged that the Reference 1 submittal also satisfies the

report requested in Item (2) of Bulletin 2002-02. Reference 1 satisfies the report required by Item IV.E of Order EA-03-009 for paragraph IV.C.(3)(a).

During Refuel 13 in October 2003, WCNOG performed a partial visual examination of the reactor pressure vessel (RPV) head and penetrations, as required by Order EA-03-009, Section IV.D. During a scheduled modification of the Control Rod Drive Mechanism (CRDM) cooling shroud, the presence of boron residue was discovered on the upper surface of the insulation in the vicinity of three CRDMs. The insulation in the affected area was removed and the vessel head and penetrations were visually examined.

The examination was performed using a procedure specifically developed for RPV head bare metal inspections. The procedure includes requirements for personnel certification, examination and acceptance criteria, and recording of inspection results. Examination personnel were certified to a minimum of Level II in the VT-2 method. Examination personnel also received specific training on examination of RPV heads based on industry guidance documentation (Reference 3).

The examination was performed by a certified WCNOG Level III examiner, and results recorded in accordance with the procedure. No evidence of boric acid leakage was detected. The annulus area of the potentially affected penetrations was verified free of boric acid. Small accumulations of loose debris were found on the upper side of some penetrations. Loose boric acid crystals were observed on the head surface and transparent boric acid film was observed on both the penetration sleeves and the head surface. The amount and configuration of the debris and film was compared to as-left conditions from a RPV head bare metal inspection performed in Refuel 12. Amounts and configuration were comparable. The debris was removed and the boric acid film was cleaned.

There were no material deficiencies identified on the RPV head or penetration pressure boundaries. There were also no indications of leakage or potential leakage through the CRDM penetrations. The boron residue on the head insulation that initiated the examination in accordance with NRC Order EA-30-0009 was determined to be residue that originated from head vent valve leakage during Operating Cycle 12. The results of the examination performed during Refuel 12 are documented in Reference 1.

### References

1. Letter CT 02-0029 from Mark S. Larson, WCNOG, to USNRC, "30-Day Response for NRC Bulletin 2002-01, Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," dated May 24, 2002.
2. Letter from USNRC to Otto L. Maynard, WCNOG, "Wolf Creek Generating Station - Response to NRC Bulletin 2002-02, "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzle Inspection Programs (TAC NO. MB5938)," dated May 24, 2002.
3. Visual Examination for Leakage of PWR Reactor Head Penetrations: Revision 2 of 1006296, Includes 2002 Inspection Results and MRP Inspection Guidance, EPRI, Palo Alto, CA: 2003. 1007842