

July 3, 2008

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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Docket No.: 50-305
License No.: DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION

**60-DAY RESPONSE TO ORDER EA-03-009, "ISSUANCE OF ORDER
ESTABLISHING INTERIM INSPECTION REQUIREMENTS FOR REACTOR
PRESSURE VESSEL HEADS AT PRESSURIZED WATER REACTORS"**

By letter dated February 20, 2004, the Nuclear Regulatory Commission (NRC) issued revised Order EA-03-009, "Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," (EA-03-009). The order requires specific inspections of the reactor pressure vessel (RPV) head and associated penetration nozzles at pressurized water reactors (PWRs) both routinely (each refueling outage) and periodically (based on head degradation). As required by Section IV of the Order, Dominion Energy Kewaunee, Inc. (DEK) is providing the inspection results for the Kewaunee Power Station (KPS) RPV head and pressure retaining components above the RPV head.

At KPS, a new RPV head was installed in December 2004. DEK performed the required 100 percent bare metal visual examination as required by EA-03-009, paragraph IV.C during the 2006 refueling outage. The effective degradation year (EDY) value at the start of the 2008 refueling outage for the replaced RPV head was 2.30. In accordance with EA-03-009, the KPS reactor vessel head is assigned the PWSCC susceptibility category of "replaced," and did not require a periodic inspection in accordance with EA-03-009, paragraph IV.C during the 2008 refueling outage. Therefore, the paragraph IV.C inspection was not required during the 2008 refueling outage.

EA-03-009, paragraph IV.D, requires routine visual inspections each refueling outage to identify potential boric acid leaks from pressure retaining components above the RPV head. The 2008 refueling outage at KPS started on March 29, 2008 and ended on May 9, 2008. On April 7, 2008, a routine visual inspection of the RPV head and head penetration nozzles was performed using a VT-3 visual examination in accordance with the requirements of ASME Boiler and Pressure Vessel Code Section XI, 1998 Edition, 2000 Addenda. Examinations were performed above the insulation on 100 percent of 38 penetrations and upper sections of the replacement RPV head. In addition, examinations were performed through openings in the reactor vessel closure head shroud and removal of insulation panels. Approximately fifty five percent of the

replacement RPV head bare metal and penetrations were examined. The examination found no indications of boric acid on the RPV head, at the head penetrations, or on pressure-retaining components above the head.

On April 29, 2008, the RPV head was reinstalled on the reactor vessel. The plant exited Cold Shutdown ($< 200^{\circ}\text{F}$) on May 5, 2008, achieving Hot Shutdown ($> 540^{\circ}\text{F}$) on May 7, 2008. On May 7, 2008, KPS performed VT-2 examinations to satisfy ASME Boiler and Pressure Vessel Code Section XI, 1998 Edition, 2000 Addenda, Table IWB-2500-1 Examination Category B-P, Item No. B15.10. The VT-2 examinations identified boric acid crystals on the core exit thermocouple nozzle assembly (CETNA) at RPV head location 240°. Following the initial examination, the boric acid crystals were cleaned from the applicable CETNA to the top of the shroud.

On May 8, 2008, the top and side shroud inspection ports were removed and mirrors were used to examine the entire instrument port to the top of the RPV head insulation. It was determined the leakage path stopped about an inch above the reactor vessel head insulation and never reached the reactor vessel closure head. The entire area was dry and the residue on the instrument port was light.

Information from the CETNA vendor indicates that the seal is considered a "live seal," because system pressure will usually assist in sealing. Insufficient preload can cause the seal to leak during Reactor Coolant System (RCS) pressurization and depressurization, but seal at normal RCS operating pressure. Because the CETNA leak was not active at normal RCS operating pressure and there was no trail of boric acid below the shroud to the RPV head insulation, DEK's course of action was to clean the accessible boric acid residue and perform follow-up visual examinations. Inaccessible boric acid residue remained on stainless steel components only.

Follow-up visual examinations of the CETNA on May 9, May 14, May 21, May 28, June 11, and June 25, 2008 indicated no additional signs of boric acid or any active leakage. DEK is currently visually inspecting this CETNA on a bi-weekly frequency but may reduce the inspection frequency based on the results of the inspections.

EA-03-009, paragraph IV.D states, in part:

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.

EA-03-009, paragraph IV.E states, in part:

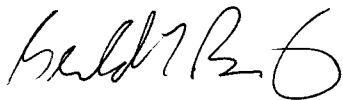
For each inspection required in Paragraph D, the Licensee shall submit a report detailing the inspection results within sixty (60) days after returning the plant to operation if a leak or boron deposit was found during the inspection.

Since boric acid crystals were found on the CETNA, DEK is submitting this letter to report the inspection results in accordance with EA-03-009, paragraph IV.E.

In summary, DEK has completed the required inspections of the affected RPV head insulation, shroud, and penetrations appropriate to the conditions initially discovered in order to verify the integrity of the affected area and penetrations. Since boric acid fluid did not contact the RPV head, there is no impact on the integrity of the reactor vessel head. As noted herein, remote visual examinations are being periodically performed to verify that the CETNA continues to maintain pressure boundary integrity.

If you have questions or require additional information, please feel free to contact Mr. Jerry Riste at 920-388-8424.

Very truly yours,

A handwritten signature in black ink, appearing to read "Gerald T. Bischof". The signature is fluid and cursive, with the first name "Gerald" and last name "Bischof" clearly distinguishable.

Gerald T. Bischof
Vice President – Nuclear Engineering

Commitments made by this letter: NONE

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