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Dominion

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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
INSERVICE INSPECTION PROGRAM FOURTH TEN-YEAR INTERVAL
PROPOSED ALTERNATIVE NO. RR-1-11

Pursuant to the provisions of 10 CFR 50.55a(a)(3)(i), Dominion Energy Kewaunee, Inc. (DEK) hereby requests NRC authorization of the attached proposed alternative for the fourth ten-year interval of the Inservice Inspection Program for Kewaunee Power Station (KPS).

DEK requests approval of an alternative to the requirement of footnote 1 to 10 CFR 50.55a(g)(6)(ii)(E), which would require the performance of a "Visual, VE" bare-metal visual (BMV) examination of the RPV bottom mounted instrumentation (BMI) penetrations per Code Case N-722 during the next refueling outage after January 1, 2009. In accordance with previous commitments made in response to NRC Bulletin 2003-02, *"Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity,"* DEK completed visual examinations of the KPS reactor pressure vessel (RPV) BMI penetrations during each of the previous three (3) refueling outages, (refueling outages in 2004, 2006, and 2008) and no indications were observed.

The requested alternative will permit the visual examinations performed during the 2008 refueling outages on the bottom mounted instrument tubes (BMI) to be used as the initial reactor coolant pressure boundary visual inspection in place of the footnote 1 requirement that the initial inspection be performed during the next refueling outage after January 1, 2009. DEK proposes that the previously completed visual examinations, along with a RPV BMI VT-2 examination scheduled during the 2009 refueling outage, provides an acceptable level of quality and safety. Therefore, the previously completed visual examinations provide an acceptable alternative to the "Visual, VE" BMV examination required by Code Case N-722 and footnote 1 to 10 CFR 50.55a(g)(6)(ii)(E) during the next refueling outage after January 1, 2009. The next "Visual, VE" BMV examinations would then be performed at the required examination frequency (every other refueling outage) beginning with the 2011 KPS refueling outage.

DEK requests approval of this proposed alternative by September 15, 2009 to support preparations for a plant refueling outage in the fall of 2009.

Attachment 1 to this letter contains the Proposed Alternative request.

If you have questions or require additional information, please contact Mr. Jack Gadzala at 920-388-8604.

Very truly yours,

J. Alan Price
Vice President – Nuclear Engineering

Attachment

1. Inservice Inspection Program Fourth Ten-Year Interval Proposed Alternative RR-1-11

Commitments made by this letter: None

cc: Regional Administrator, Region III
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ATTACHMENT 1

INSERVICE INSPECTION PROGRAM FOURTH TEN-YEAR INTERVAL PROPOSED ALTERNATIVE NO. RR-1-11

KEWAUNEE POWER STATION
DOMINION ENERGY KEWAUNEE, INC.

Proposed Alternative No: RR-1-11

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

Alternative Provides Acceptable Level of Quality and Safety

1. ASME Code Component(s) Affected

Code components associated with this request are Class 1 Reactor Pressure Vessel (RPV) bottom-mounted instrument (BMI) penetrations having pressure retaining partial or full penetration welds in components fabricated with Alloy 600/82/182 material.

Code Class:	1
References:	Code Case N-722, Table 1 (reference 1)
Item Number:	B15.80
Parts Examined:	Instrument Penetrations
Description:	Reactor Pressure Vessel (RPV) Bottom Mounted Instrument (BMI) Penetration Nozzles (36 Locations)

2. Applicable Code Edition and Addenda

The Kewaunee Power Station Fourth 10-Year Interval Inservice Inspection (ISI) Program (reference 2) is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI 1998 Edition 2000 Addenda (reference 3).

3. Applicable Code Requirement

ASME Code Case N-722, Table 1, Item B15.80 requires RPV bottom-mounted instrument penetrations be examined on a frequency of "Every other refueling outage." ASME Code Case N-722 was incorporated into 10 CFR 50.55a(g)(6)(ii)(E). Footnote 1 to 10 CFR 50.55a(g)(6)(ii)(E) states in part,

> *"For...inspections conducted every other refueling outage, the initial inspection shall be performed at the next refueling outage after January 1, 2009."*

4. Reason for Request

DEK requests an alternative to the requirement of footnote 1 to 10 CFR 50.55a(g)(6)(ii)(E), which would require the performance of a "Visual, VE" bare-metal visual (BMV) examination of the RPV BMI penetrations during the next refueling outage after January 1, 2009. Pursuant to 10 CFR 50.55a(a)(3)(i), a proposed alternative may be requested when the proposed alternative will provide an acceptable level of quality and safety.

In order to implement Code Case N-722, the NRC amended 10 CFR 50.55a to incorporate ASME Code Case N-722 by reference in the final rule published in the Federal Register Notice 73 FR 52730, "10 CFR Part 50 Industry Codes and Standards; Amended Requirements," dated September 10, 2008. The NRC required implementation of Code Case N-722 because the NRC concluded that these inspections are necessary to ensure the integrity of components fabricated from Alloy 600/82/182 materials.

As noted in revised 10 CFR 50.55a(g)(6)(ii)(E) :

"(E) Reactor coolant pressure boundary visual inspections.[1]

(1) All licensees of pressurized water reactors shall augment their inservice inspection program by implementing ASME Code Case N-722 subject to the conditions specified in paragraphs (g)(6)(ii)(E) (2) through (4) of this section.

Footnotes:

[1]For ... inspections conducted every other refueling outage, the initial inspection shall be performed at the next refueling outage after January 1, 2009."

ASME Code Case N-722, Table 1, Item B15.80 requires RPV bottom-mounted instrument penetrations be examined on a frequency of "every other refueling outage." Code Case N-722 also includes specific requirements for the VE and the qualification of personnel performing the VE:

(3) The Visual Examination (VE) performed on Alloy 600/82/182 components for evidence of pressure boundary leakage and corrosion on adjacent ferritic steel components shall consist of the following:

(a) A direct VE of the bare-metal surface performed with the insulation removed. Alternatively, the VE may be performed with insulation in place using remote visual inspection equipment that provides resolution of the component metal surface equivalent to a bare-metal direct VE.

(b) The VE may be performed when the system or component is

depressurized.

(c) The direct VE shall be performed at a distance not greater than 4 ft (1.2 m) from the component and with a demonstrated illumination level sufficient to allow resolution of lower case characters having a height of not greater than 0.105 in (2.7 mm).

(4) Personnel performing the VE shall be qualified as VT-2 visual examiners and shall have completed a minimum of four (4) hours of additional training in detection of borated water leakage from Alloy 600/82/182 components and the resulting boric acid corrosion of adjacent ferritic steel components.

In accordance with previous commitments made in response to NRC Bulletin 2003-02 (references 4 and 5), Dominion Energy Kewaunee (DEK) has completed bare metal visual examinations of the reactor pressure vessel (RPV) BMI penetrations during each of the previous three (3) refueling outages, (refueling outages in 2004, 2006, and 2008).

The visual examinations completed in 2004 and 2006 used VT-3 techniques with 100% coverage. No indications were observed during these VT-3 examinations. Additionally, the bottom region of the reactor vessel was also subjected to VT-2 examinations during the 2004 and 2006 refueling outages with the reactor at nominal operating pressure and temperature. No indications of leakage were observed during the VT-2 examinations.

Bottom-mounted RPV instrument penetrations visual examinations were also completed in the 2008 refueling outage with 100% coverage. No indications were observed during these examinations. These examinations were performed by personnel that met the personnel training and qualification requirements as described in Enclosure 1, "Examiner Qualification and Resolutions Requirements." In addition, the bottom region of the reactor vessel was also subjected to VT-2 examinations during the 2008 refueling outage with the reactor at nominal operating pressure and temperature.

Completion of the aforementioned examinations ensures an acceptable level of quality and safety in that:

1. The examiners were qualified to VT-1, VT-2, VT-3 and Visual Examination (VE) requirements (2008 refueling outage),
2. The bare metal examinations in 2008 were performed to VE requirements including knowledge of EPRI Report 1006296 (reference 6),
3. 100% coverage was obtained during the examinations,

4. Visual examinations have been performed over a span of time and the frequency of these examinations exceed the requirements of Code Case N-722, and
5. The previously completed visual examinations have shown the BMI penetrations are free from any indication of leakage or corrosion.

DEK has scheduled a VT-2 examination of the RPV BMI penetrations during startup from the 2009 refueling outage.

Based on the above, DEK requests that the proposed alternative to the requirement of footnote 1 to 10 CFR 50.55a(g)(6)(ii)(E), which would require the performance of a "Visual, VE" bare-metal visual (BMV) examination of the RPV BMI penetrations during the next refueling outage after January 1, 2009, be accepted.

5. Proposed Alternative and Basis for Use

DEK proposes that the previously completed bare metal visual examinations of the RPV BMI penetrations completed during the 2008 refueling outage, serve as an acceptable alternative to the "Visual, VE" BMV examinations required to be performed by Code Case N-722 and footnote 1 to 10 CFR 50.55a(g)(6)(ii)(E) during the next refueling outage after January 1, 2009. Thus, the bare metal visual examinations performed during the 2008 refueling outage for KPS will be considered the initial examinations to meet the 10 CFR 50.55a(g)(6)(ii)(E) footnote requirements for the performance of the initial examinations. See Enclosure 1 for further details on the 2008 examinations.

The next "Visual, VE" BMV examinations would then be performed at the required examination frequency (every other refueling outage) with the next examination required during the KPS refueling outage scheduled to occur in 2011.

The proposed alternative is based on the previous performance of bare metal visual examinations during the 2008 refueling outage with no indication of leakage and the required frequency of examination Item B15.80 specified in Code Case N-722. The KPS RPV BMI penetrations have repeatedly shown (in examinations during the 2004, 2006 and 2008 refueling outages) no indications of leakage. Furthermore, the frequency for performing the Item B15.80 inspection in Code Case N-722 is every other refueling outage. Therefore, the proposed alternative (to accept the 2008 examination as the initial examination and change the next required "Visual, VE" bare-metal visual (BMV) examination of the RPV BMI penetrations to the 2011 outage) provides an acceptable level of quality and safety.

In addition, DEK is scheduled to perform a VT-2 examination of the RPV BMI penetrations during startup from the 2009 refueling outage.

6. Duration of Proposed Alternative

The proposed alternative would be effective immediately until the KPS refueling outage currently scheduled in 2011.

7. Precedents

None

8. References

1) Code Case N-722, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials Section XI Division 1," dated July 5, 2005.

2) Kewaunee Power Station, Fourth 10-Year Interval, Inservice Inspection Program, Revision 3, dated February 6, 2009.

3) American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, 1998 Edition, 2000 Addenda.

4) NRC Bulletin 2003-02, "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity," dated August 21, 2003. (ADAMS Accession No. ML032320153)

5) Letter from Thomas Coutu (NMC) to Document Control Desk (NRC), "Nuclear Regulatory Commission Bulletin 2003-02: Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity – 90 Day Response," dated November 10, 2003. (ADAMS Accession No. ML033240427)

6) EPRI Report 1006296, Revision 2, "Visual Examination for Leakage of PWR Reactor Head Penetrations," dated March 2003.

ENCLOSURE 1
Examiner Qualifications and Resolution Requirements

This enclosure documents a comparison of the bare metal visual examinations performed on the KPS reactor pressure vessel bottom mounted instrumentation (BMI) nozzles during the 2008 refueling outage with the new requirements of Code Case N-722. Two areas related to examination equivalency are addressed; personnel qualifications and resolution requirements.

Personnel Qualifications

The examiners that performed the RPV BMI penetration examinations during the 2008 refueling outage held current VT-1, VT-2 (non-alternative) and VT-3 qualifications. Each of the examiners successfully completed Boric Acid Corrosion Control (BACC) Inspector Training. In addition to BACC training, each of the examiners was required to review EPRI Technical Report 1006296 (reference 6). Completion of these training activities have been determined to be equivalent to the four (4) hours of additional training cited in Code Case N-722.

Based upon the above, the qualifications of the examiners during the 2008 refueling outage are considered equivalent to the personnel qualification requirements of Code Case N-722.

Resolution Requirements

The RPV BMI penetration bare metal examinations performed during the 2008 refueling outage were performed in the following manner:

- A direct visual examination was performed with the insulation removed and no limitations,
- The distance used for these examinations was at a distance not greater than four feet, and
- The illumination was sufficient to allow resolution of lower case characters having a height of not greater than 0.105 inches.

These requirements are the same as the distance and resolution requirements contained in Code Case N-722 for Visual Examinations (VE).

Based upon the above, the bare metal visual examinations of the KPS BMI nozzle penetrations during the 2008 refueling outage are considered equivalent to the resolution requirements of Code Case N-722.