

April 27, 2009

Mr. David A. Christian
President and Chief Nuclear Officer
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: KEWAUNEE POWER STATION - ISSUANCE OF AMENDMENT RE: ONE-TIME
EXTENSION OF THE 15-YEAR CONTAINMENT INTEGRATED LEAK RATE
TEST INTERVAL (TAC NO. MD9612)

Dear Mr. Christian:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 204 to Facility Operating License No. DPR-43 for the Kewaunee Power Station in response to your application dated September 11, 2008, as supplemented by letter dated December 17, 2008, and January 20, 2009.

The amendment revises the Technical Specifications, extending the 15-year interval between containment Type A tests specified by Specification 4.4.a, "Integrated Leak Rate Test," by 6 months. The current Type A test interval expires at the end of April 2009. The amendment extends this interval, on a one-time basis, to October 2009 to coincide with completion of the next scheduled refueling outage.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next regular biweekly *Federal Register* notice.

Sincerely,

/RA/

Peter S. Tam, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-305

Enclosures:

1. Amendment No. 204 to
License No. DPR-43
2. Safety Evaluation

cc w/encls: Distribution via ListServ

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ADAMS ACCESSION NUMBER: **ML090570892**

OFFICE	LPL3-1/PM	LPL3-1/LA	EMCB/BC	SCVB/BC APLA/BC(A)	ITSB/BC	OGC	LPL3-1/BC
NAME	PTam	BTully	MKhanna*	RDennig* AHowe*	RGrover for RElliott	BHarris	LJames
DATE	4/14/09	4/10/09	4/19/09*	2/25/09*	4/16/09	4/15/09	4/25/09

*Safety evaluation input transmitted by memo on the date shown.

OFFICIAL RECORD COPY

DOMINION ENERGY KEWAUNEE, INC.

DOCKET NO. 50-305

KEWAUNEE POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 204
License No. DPR-43

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Dominion Energy Kewaunee, Inc. dated September 11, 2008, as supplemented on December 17, 2008 and January 20, 2009, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-43 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 204, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Lois M. James, Chief
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility Operating License
and Technical Specifications

Date of Issuance: April 27, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 204

FACILITY OPERATING LICENSE NO. DPR-43

DOCKET NO. 50-305

Replace the following page of the Facility Operating License No. DPR-43 with the revised page attached. The changed area is identified by a marginal line.

REMOVE

INSERT

Page 3

Page 3

Replace the following page of Appendix A, Technical Specifications, with the revised page attached. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE

INSERT

TS 4.4-1

TS 4.4-1

C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR, Chapter I: (1) Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70, (2) is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect, and (3) is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady-state reactor core power levels not in excess of 1772 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 204, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Fire Protection

The licensee shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the licensee's Fire Plan, and as referenced in the Updated Safety Analysis Report, and as approved in the Safety Evaluation Reports, dated November 25, 1977, and December 12, 1978 (and supplement dated February 13, 1981) subject to the following provision:

The licensee may make changes to the approved Fire Protection Program without prior approval of the Commission, only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(4) Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Nuclear Management Company Kewaunee Nuclear Power Plant Physical Security Plan (Revision 0)" submitted by letter dated October 18, as supplemented by letter dated October 21, 2004, July 26, 2005, and May 15, 2006.

(5) Deleted

Amendment No. 1 thru 204
Revised by letter dated ~~May 7, 2008, August 22, 2008~~

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATING TO AMENDMENT NO. 204 TO FACILITY OPERATING LICENSE NO. DPR-43
DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
DOCKET NO. 50-305

1.0 INTRODUCTION

By application dated September 11, 2008 (Agencywide Documents Management and Access System (ADAMS) Accession No. ML082550700), as supplemented by letters dated December 17, 2008, and January 20, 2009 (Accession Nos. ML083540246 and ML090210282), Dominion Energy Kewaunee, Inc. (the licensee) requested changes to the Technical Specifications (TS) for the Kewaunee Power Station (KPS). The amendment would extend the test interval for KPS's next containment integrated leak rate test (ILRT), specified by Appendix J, Type A, by approximately 6 additional months beyond the 5-year extension previously approved by the Nuclear Regulatory Commission (NRC) staff to the nominal 10-year interval. The additional six-month extension would allow the licensee to perform the Type A test at the next refueling outage, rather than during a mid-cycle shutdown before the next refueling outage.

The licensee stated that the reason for the extension is an error made in interpreting and implementing the TS requirement for the ILRT while evaluating the effects of rescheduling of future refueling outages after a series of forced shutdowns experienced by KPS in 2005 and 2006. The licensee stated that it discovered the error in interpretation in June 2008 after completion of the most recent refueling outage (KR 29) of May 2008 while reviewing the scope of the next refueling outage (KR 30). Therefore, the licensee has requested the one-time 6-month extension of the Type A test interval to avoid the hardship of a mid-cycle plant shutdown (estimated duration of approximately ten days) that would be required at this point to conduct the ILRT under the current TS requirement.

The supplements cited above provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination (73 FR 65689, dated November 4, 2008).

Enclosure

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix J, Option B requires that a Type A test be conducted at a periodic interval based on historical performance of the overall containment system. Kewaunee TS 4.4, "Containment Tests," requires visual examinations and leakage rate testing in accordance with TS 6.20, "Containment Leakage Rate Testing Program," which requires that leakage rate testing be performed as required by 10 CFR Part 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. This RG endorses, with certain exceptions, Nuclear Energy Institute (NEI) report NEI 94-01, Revision 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," dated July 26, 1995. Kewaunee TS 4.4.a currently has an exception for a one-time change to the Type A test frequency specified in NEI 94-01, Revision 0, Paragraph 9.2.3, in which "...at least once per 10 years based on acceptable performance history" is changed to "...at least once per 15 years based on acceptable performance history." This exception is discussed further in the next paragraph.

A Type A test is an overall (integrated) leakage rate test of the containment structure. NEI 94-01 specifies an initial test interval of 48 months, but allows an extended interval of 10 years, based upon two consecutive successful tests. There is also a provision for extending the test interval an additional 15 months in certain circumstances. The most recent two Type A tests at Kewaunee have been successful, so the current interval requirement would normally be 10 years. However, by letter dated June 20, 2003 (Accession No. ML031820613), as supplemented on December 12, 2003 (Accession No. ML033570469), the licensee requested a one-time extension of the test interval to 15 years. On April 6, 2004, the NRC staff authorized this request via Amendment No. 173 (Accession No. ML040340168).

By the current application, as supplemented, the licensee is requesting a change to TS 4.4.a by adding approximately six more months to the 5-year extension already in place, for a total interval of approximately 15 years and 6 months. Specifically, this change to the TS would state that the first Type A test following the Type A test performed in April 1994 shall be required no later than October 2009.

The local leakage rate tests (Type B and Type C tests), including their schedules, are not affected by this current application.

3.0 TECHNICAL EVALUATION

3.1 Proposed Changes to the TS

The current wording of TS 4.4, "Containment Tests," Section a reads:

a. Integrated Leak Rate Tests (Type A)

Perform required visual examinations and leakage rate testing in accordance with the Containment Leakage Rate Testing Program.

As a one-time change, the Type A test frequency specified in NEI 94-01, Revision 0, Paragraph 9.2.3, as "... at least once per 10 years based on acceptable performance history" is changed to "... at least once per 15 years based on acceptable performance history." This change applies only to the interval following the Type A test performed in April 1994.

The licensee proposed to revise Section 4.4.a to read:

a. *Integrated Leak Rate Tests (Type A)*

Perform required visual examinations and leakage rate testing in accordance with the Containment Leakage Rate Testing Program.

As a one-time exception to the Containment Leakage Rate Testing Program, the first Type A test following the Type A test performed in April 1994 shall be required no later than October 2009.

3.2 Containment Integrity Evaluation

The primary containment system for KPS consists of a free standing steel cylindrical pressure vessel (known as the Reactor Containment Vessel (RCV)), with a hemispherical dome and an ellipsoidal bottom. The RCV and its penetrations are capable of withstanding an internal design basis accident pressure of 46 pounds per square inch gauge. The RCV is surrounded by an open annulus area and a cylindrical Shield Building (SB) constructed of reinforced concrete. With this design, both sides of the RCV shell are entirely accessible, with the exception of the base, for inspection and leak testing.

3.2.1 Containment ILRT Issues

The overall integrity of the RCV is verified by a Type A ILRT, and the integrity of the penetrations and isolation valves are verified by Type B and Type C local leak rate tests (LLRT) as required by 10 CFR Part 50, Appendix J. These tests are performed to verify the essential leak-tight characteristics of the containment structure at the design-basis accident pressure. The leakage rate testing requirements of 10 CFR 50, Appendix J, Option B (Type A, Type B, and Type C tests) and the containment inservice inspection (CISI) requirements mandated by 10 CFR 50.55a together help ensure the continued leak-tight and structural integrity of the containment during its service life. Therefore, the NRC staff's evaluation is focused on the licensee's implementation of its leak rate testing program and containment structural integrity considerations based on the implementation of the CISI program for management of containment degradation. During its review, the NRC staff identified areas where additional information was required to complete its review. The staff issued its requests for additional information (RAI) on November 18, 2008 and December 12, 2008 (Accession Nos. ML083240835 and ML083470367).

The licensee stated that previous Type A testing confirmed that the KPS containment leakage is acceptable, with considerable margin, with respect to the TS acceptance criterion of 0.20 percent of containment air weight per day (1.0 La). In Table 1 of the application, the licensee reported a historical summary of results of Type A tests performed on the KPS containment that

demonstrates that the KPS containment vessel has a history of leak-tightness and structural integrity. The last two Type A tests were successfully performed in April 1990 and April 1994 with as-left leak rates, in percent air weight per day, of 0.0926 and 0.0610, respectively.

In the December 12, 2008, RAI the NRC staff provided comments on the licensee's root cause and reason for the proposed amendment. These comments are not repeated here. By its January 20, 2009, letter the licensee modified the proposed wording of the TS 4.4.a to read as shown in Section 3.1 above. The NRC staff found the modified wording to be clear and not subject to interpretation and, therefore, acceptable.

Further, in its January 20, 2009, letter the licensee addressed the error in interpreting the current Section 4.4.a, its cause and corrective actions. The licensee stated that as described in Section 3.3.2 of the application, an error was made in 2005 when determining the due date for the next Type A test. This error was not discovered until June of 2008.

The licensee stated that an "Apparent Cause Evaluation" was completed in August 2008 regarding this issue. The apparent cause of the event was determined to be insufficient engineering rigor when evaluating the change in schedule for performing the next Type A test from April 2009 to the Fall of 2009. Specifically, the 2005 review of the change in outage schedule did not identify that the safety evaluation supporting Amendment No. 173 specified that the next Type A test was to be performed no later than April 2009.

The licensee stated that, as part of the corrective action measures, improvements have been made in the area of engineering rigor since the 2005 review of surveillance requirements was conducted. Root cause evaluations (RCE) related to the potential for auxiliary feedwater air entrainment and the potential for flooding of safety-related equipment both identified cases of insufficient engineering rigor and lack of understanding of design and licensing bases of the plant. Corrective actions from these RCEs have resulted in improvements in engineering rigor at KPS. Training was conducted in 2005 and 2006 to reinforce engineering standards and engineering product quality. The licensee stated that specifically, as a result of this issue, engineering program owners were tasked with reviewing their program documents to determine if any related license amendment safety evaluations have implied requirements or statements that should be addressed and referenced by program documents. The licensee stated that safety evaluation reviews have been completed and there were no other unaddressed, implied requirements or statements identified that required further action.

The licensee further stated that the procedure that governs changes to the Containment Leak Rate Test Program (CLRTP) document has been revised to require a second level review of changes to the CLRTP. The CLRTP has been revised to incorporate April 2009 as the current required due date of the next Type A test at Kewaunee. The licensee noted that if the NRC approves the one-time 6-month extension requested by the application, the CLRTP would then be revised to indicate October 2009 as the required due date for the next Type A test. The licensee stated that a high impact team has been assembled and activities are in progress to facilitate conducting a Type A test if the NRC does not approve the amendment request for a 6-month extension. The licensee stated that the CLRTP will also be revised to reflect NRC expectations regarding future Type A test extensions beyond 15 years contained in Regulatory Issue Summary 2008-27. The licensee stated it has no plans to submit a similar one-time

Type A test interval extensions beyond 15 years in the future and that its corrective actions will prevent similar mistakes in determining the required due dates of Type A tests in the future.

The NRC staff finds that the licensee addressed the apparent and root causes of the error in interpreting TS Section 4.4.a, and has implemented reasonable corrective actions to prevent such errors from happening in the future. The licensee does not expect to seek future one-time extensions of Type A test interval beyond 15 years. The licensee committed to incorporate into its CLRTP the NRC staff position and expectations in RIS 2008-27, dated December 8, 2008, for future applications for one-time Type A test interval extensions beyond the approved 15 years. Based on the above, the NRC staff finds the licensee's corrective actions to be reasonable.

3.2.2 Containment Local Leak Rate Testing Issues

The licensee stated that KPS has a comprehensive local leak rate testing (LLRT) program to meet the requirements for Type B and C tests of Option B in Appendix J to 10 CFR 50. The program tests a total of 68 containment penetrations. The licensee stated that its LLRT program performs Type B tests on 38 penetrations and Type C tests on 43 penetrations with 13 penetrations being subject to both Type B and Type C tests. The penetration subject to Type B tests include electrical penetrations, the fuel transfer tube (bellows and flange), equipment hatch (O-ring), personnel airlock, emergency airlock, mechanical spare penetrations with flanged closures (O-rings), pressure transmitters, expansion bellows, and ventilation penetrations with flanged enclosures. In Table 2 of the application the licensee reported the combined total as-found leakage of the LLRTs performed since the five-year ILRT interval extension was made in 2003. The maximum pathway leakage for all penetrations was reported in 2008 as 27,788 standard cubic centimeters per minute (SCCM). The data indicates that the LLRT test results have been below the maximum allowable combined leakage rate of 0.60 La (129,120 SCCM based on La value of 0.2 weight percent per day or 215,200 SCCM). The licensee stated that, in addition, KPS conservatively maintains an administrative leakage limit for each tested containment penetration to the special ventilation zone (Zone SV) and the leakage that bypasses the special ventilation zone.

In the January 20, 2009, letter the licensee accounted for the combined as-found leakage results of the LLRTs performed since 2003, explaining the approximately two-fold increase in maximum pathway leakage from all penetrations and five-fold increase in maximum pathway leakage to Zone SV for the period between 2006 and 2008 and actions taken to address the relatively significant increase in leakage. The licensee stated that the approximately two-fold increase in maximum pathway leakage from all penetrations and five-fold increase in maximum pathway leakage to Zone SV for the period between 2006 and 2008 was primarily due to measured leakage through the Chemical and Volume Control system (CVCS) letdown orifice block valves (LD-4A, LD-4B, and LD4C), which are located inside containment. These valves act in a parallel arrangement to provide the full range of letdown flow needed to operate the plant. During normal operation, only one of the valves is open. The piping from these valves is combined into a single common pipe downstream of the valves. The common pipe exits the containment at penetration 11. Another containment isolation valve (LD-6) is located outside penetration 11. The licensee stated that Section 9.2 of the KPS Updated Safety Analysis Report provides a discussion of the CVCS system.

The licensee further stated that the measured leakage through these valves in 2003 was 79.5 SCCM. As allowed by 10 CFR 50, Appendix J, Option B, containment penetration 11 was not leak rate tested in 2004 or 2006. During the 2008 spring refueling outage, the measured leakage through these valves was 12,110 SCCM. The licensee stated that in accordance with the KPS corrective action program, a work order has been developed that is currently scheduled to repair LD-4B during the 2009 refueling outage. The LLRT testing schedule has been revised to include a Type C test of penetration 11 during every future outage until successful tests are performed during two sequential outages. After completion of two successful tests, consideration will be given to revising the testing schedule in accordance with 10 CFR 50, Appendix J, Option B. The licensee also indicated that if the 12,110 SCCM leakage measured in 2008 for penetration 11 is subtracted from the 2008 LLRT totals, the leakage results are comparable to that in 2006.

The NRC staff finds the licensee's explanation about the leak rate thru these valves acceptable since the maximum pathway leakage from all penetrations in 2008 was well within the maximum allowable combined leakage, and the licensee identified the source of the excess leakage between 2003 and 2008 to the letdown orifice block valves and the associated penetration 11. The licensee is in the process of implementing corrective action for the leakage and plans to perform Type C tests of penetration 11 over the next two consecutive outages in order to re-establish the performance of this penetration. The licensee's response indicates that the KPS LLRT program is being implemented properly and effectively and, therefore, the staff's concern is resolved.

3.2.3 Containment Inservice Inspection (CISI) Issues

The licensee stated that, pursuant to 10 CFR 50.55a, KPS is implementing its CISI program in accordance with the requirements for Class MC components of the ASME Code, Section XI, Subsection IWE (hereafter called the ASME Code). The first ten-year CISI interval was implemented during the period September 9, 1996 to September 9, 2006 in accordance with the 1992 editions and 1992 addenda of the ASME Code. The licensee stated that it is currently implementing the second ten-year interval (September 9, 2006 to September 9, 2016) in accordance with requirements of the 2001 edition and 2003 addenda of the ASME Code.

The licensee stated that the scope of the KPS CISI program includes all the containment surfaces, pressure retaining welds, containment surfaces requiring augmented examination, seals, gaskets, moisture barriers, pressure-retaining dissimilar metal welds, pressure-retaining bolting and pressure-retaining components that are required to be examined. The licensee stated that the CISI program is unaffected by the proposed amendment, and will continue to provide a high degree of assurance that any containment degradation will be detected and corrected before it can result in a leakage path.

The licensee stated that Regulatory Position C.3 in RG 1.163 specifies performing general visual examination of accessible interior and exterior containment surfaces prior to initiating a Type A test, and during two other refueling outages before the next Type A test if the interval has been extended to 10 years. The purpose of this requirement is to allow for early uncovering of evidence of structural deterioration.

In the January 20, 2009, letter the licensee explained how the intent of the requirement for general visual examination in Regulatory Position C.3 in RG 1.163 is being implemented at KPS considering the 15-year Type A test interval as opposed to the 10-year interval in the regulatory position. The licensee stated that it is using the visual examinations of the CISI program in accordance with the ASME Code, Section XI, to meet the intent of the general visual examinations required by position C.3 of RG 1.163. The licensee also stated that examination of the accessible portions of primary containment liner, penetrations, selected pressure-retaining bolted connections, and the moisture barrier at the liner-to-containment floor junction was conducted during refueling outages in 1998, 2000, 2001, 2003, 2004 and 2006. These examinations were conducted as part of the first ten-year interval examinations, and met the applicable requirements of the ASME Code.

The licensee clarified that the methodology used at KPS is to perform CISI examinations during refueling outages and it is the licensee's practice to complete a full containment system inspection over two refueling outages. Then the inspection cycle repeats, beginning with the next refueling outage. The licensee stated that this exceeds the frequency specified in RG 1.163 requirements. During the period between Type A tests (1994 to present), KPS has completed more than three complete containment system inspections. The CISI inspections performed during the 1998 and 2000 refueling outages constituted one full containment system inspection. Then the inspection cycle was repeated in the 2001 and 2003 refueling outages, and the 2004 and 2006 refueling outages. Finally, the 2008 refueling outage began a fourth cycle of CISI inspections. The licensee stated that, in addition to the CISI program, pre-Type A test and post-Type A test containment vessel inspections are performed as part of the Type A test procedure. The licensee stated that the next inspections will be performed as part of the Type A test in 2009.

The NRC staff determines that the licensee has demonstrated that implementation of general visual examinations of the containment vessel as part of the CISI program exceeds the intent of the requirement in RG 1.163 (position C.3) based on the 15-year test interval.

The licensee summarized in the application the results of the CISI examinations performed in 2003, 2004, 2006, and 2008. The results showed that with the exception of minor indications, all the CISI program examination results were within the established acceptance criteria. Each of the minor indications were appropriately repaired, replaced, or accepted by evaluation. In some cases, re-examination of previous flaws indicated that no further degradation has occurred. The licensee stated that to-date, the first refueling outage of the first period of the second CISI interval has been completed and that no area of the KPS containment structure requires augmented examinations in accordance with IWE-1240.

The licensee stated that KPS has 9 penetration assemblies that incorporate two-ply mechanical bellows and one penetration assembly that incorporated a three-ply mechanical bellows. In Table 3 of the application, the licensee provided the LLRT test results for each bellows assembly tested since 2003. Based on the bellows leakage information, the licensee found that leakage values measured since 2003 have not indicated degradation of the bellows assemblies.

The licensee also stated that the KPS containment vessel and SB are within the scope of the Maintenance Rule inspections for monitoring the condition of structures under 10 CFR 50.65. The licensee stated that baseline structural inspections of the containment were conducted in

1998 and additional inspections were performed in 2003 and 2008. The frequency of the inspection does not exceed 5 years. The findings of the inspections were minor and appropriately dispositioned or resolved. Overall, the licensee determined that containment vessel and SB were in good structural condition.

3.2.4 Summary of Containment Integrity Evaluation

Based on the NRC staff's review of the licensee's September 11, 2008, application, as supplemented, and the safety evaluation for license amendment No. 173 (which extended the ILRT interval from 10 years to 15 years), the NRC staff finds that the KPS primary containment aging degradations are effectively monitored and managed, and that there is reasonable assurance that the containment structural and leak-tight integrity will continue to be maintained without undue risk to safety during the requested 6-month extension period until the next Type A test (no later than October 2009). Therefore, the NRC staff finds the proposed 6-month extension to the current 15-year ILRT interval acceptable. If in the future the licensee applies for extension of the Type A test interval beyond the currently approved upper-bound performance-based interval of 15 years, the NRC staff intends to implement the position documented in RIS 2008-27, "Staff Position on Extension of the Containment Type A Test Interval Beyond 15 Years Under Option B of Appendix J to 10 CFR Part 50," dated December 8, 2008.

3.3 Probabilistic Risk Assessment (PRA) Evaluation

As stated above, by Amendment No. 173 the NRC staff approved a one-time extension of the containment ILRT interval specified in TS 4.4.a from 10 to 15 years for KPS. This test interval extension was supported by a risk assessment performed by the licensee. The NRC's review of the licensee's risk assessment was documented in the safety evaluation associated with Amendment No. 173, and concluded that the combined risk impact of the test interval extension, in terms of total integrated plant risk, large early release frequency, and conditional containment failure probability, is small and, therefore, supportive of the change.

By its September 11, 2008, application the licensee requested that TS 4.4.a be amended to effectively allow a one-time extension of the CILRT interval from 15 years to approximately 15.5 years for KPS. The licensee performed a risk assessment of the impact of extending the CILRT test frequency from the original 3 tests in 10 years to one test in 15.75 years, and reported the risk results in the September 11, 2008, application. (The frequency of one test in 15.75 years was used to bound the impact of the requested extension to 15.5 years.) Additional information was provided by the licensee in its letter dated December 17, 2008. The risk assessment is based on the same technical approach, input, and assumptions used to support Amendment No. 173, with the exception of the revised test interval, the use of an updated risk assessment methodology (Electric Power Research Institute Report No. 1009325, Revision 2, approved by the NRC in June 2008 (Accession No. ML081140105)), and the use of an updated version of the PRA.

3.3.1 PRA Technical Quality

In Regulatory Issue Summary 2007-06 (RIS 2007-06), "Regulatory Guide 1.200 Implementation," the NRC clarified that for all risk-informed applications received after

December 2007, the NRC staff will use RG 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," to determine whether the technical adequacy of the PRA used to support a submittal is consistent with accepted practices. In the Final Safety Evaluation for NEI 94-01, Revision 2 (Accession No. ML081140105) the NRC staff states that Capability Category I of the American Society of Mechanical Engineers (ASME) PRA Standard shall be applied as the standard for assessing PRA quality for CILRT extension applications since approximate values of core damage frequency (CDF) and large early release frequency (LERF) and their contribution among release categories are sufficient to support the evaluation of changes to CILRT frequencies.

In accordance with this guidance, Dominion's September 11, 2008, license application and December 17, 2008, supplement address the technical adequacy of the PRA which forms the basis for the subject risk assessment. As described therein, an independent team of experts reviewed the Kewaunee PRA model (Version K107A) in January 2008 against RG 1.200, Revision 1 and ASME PRA Standard Capability Category II requirements. The Supporting Requirements (SRs) that did not meet Capability Category II were reviewed to determine if they would meet Capability Category I requirements, or impact the risk insights provided in support of the proposed amendment. The licensee stated that none of the SRs that did not meet Capability Category I requirements would have an impact on the risk insights provided in support of the proposed amendment. The rationale for this conclusion is provided in the licensee's September 11, 2008, letter. The NRC staff reviewed this information and concurs with the licensee's assessment. Given that the licensee has evaluated its PRA against RG 1.200 and the ASME PRA Standard, evaluated the findings developed during the reviews of its PRA for applicability to the ILRT extension, and determined that any unresolved issues would not impact the conclusions of the ILRT risk assessment, the NRC staff concludes that the current Kewaunee PRA model is of sufficient technical quality to support the evaluation of changes to ILRT frequencies.

3.3.2 Risk Results

Based on the analyses provided by the licensee, the risk impacts and risk comparisons for the proposed change are not substantially changed from those reported in the previous SE for Amendment No. 173. Thus, the NRC staff's conclusions in the SE for Amendment No. 173 remain valid. Specifically, the increase in the total integrated plant risk is small and supportive of the proposed change; the increase in the test interval (by 6 months) results in only a small change in LERF consistent with the acceptance guidelines of RG 1.174, and the defense-in-depth philosophy is maintained based on the small magnitude of the change in the conditional containment failure probability.

Based on these conclusions, the NRC staff finds that the increase in predicted risk due to the proposed change is within the acceptance guidelines while maintaining the defense-in-depth philosophy of RG 1.174 and, therefore, is acceptable.

3.4 Summary of Technical Evaluation

Based on the foregoing evaluation, the NRC staff finds that the interval until the next containment ILRT at Kewaunee Nuclear Power Plant may be extended to 15.5 years, and that the proposed change to Technical Specification 4.4.a is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Wisconsin State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration (73 FR 65689) and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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