

Dominion Energy Kewaunee, Inc.  
N490 Highway 42, Kewaunee, WI 54216-9511



JUN 22 2009

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

Serial No. 09-410  
LIC/MH/RO  
Docket No.: 50-305  
License No.: DPR-43

**DOMINION ENERGY KEWAUNEE, INC.**  
**KEWAUNEE POWER STATION**  
**LICENSEE EVENT REPORT LER 2009-007-00**

Pursuant to 10 CFR 50.73, Dominion Energy Kewaunee, Inc., hereby submits the following Licensee Event Report applicable to Kewaunee Power Station.

Report No. 50-305/2009-007-00

This report has been reviewed by the Facility Safety Review Committee and will be forwarded to the Management Safety Review Committee for its review.

If you have any further questions, please contact Ms. Mary Jo Haese at (920) 388-8277.

Very truly yours,

A handwritten signature in black ink that reads "Stephen E. Scace".

Stephen E. Scace  
Site Vice President, Kewaunee Power Station

Attachment

Commitments made by this letter: NONE

JE22  
NRR

cc: Regional Administrator, Region III  
U.S. Nuclear Regulatory Commission  
2443 Warrenville Road  
Suite 210  
Lisle, IL 60532-4352

Mr. P. S. Tam  
Sr. Project Manager  
U.S. Nuclear Regulatory Commission  
One White Flint North, Mail Stop O8-H4A  
11555 Rockville Pike  
Rockville, MD 20852-2738

NRC Senior Resident Inspector  
Kewaunee Power Station

## LICENSEE EVENT REPORT (LER)

(See reverse for required number of  
digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

## 1. FACILITY NAME

Kewaunee Power Station

## 2. DOCKET NUMBER

05000305

## 3. PAGE

1 OF 3

## 4. TITLE

Inadequate Station Procedures for Testing Containment Vacuum Breaker System Leads to a Violation of Technical Specification Requirements

## 5. EVENT DATE

MONTH	DAY	YEAR
04	21	2009

## 6. LER NUMBER

YEAR	SEQUENTIAL NUMBER	REV NO
2009	-- 007 --	00

## 7. REPORT DATE

MONTH	DAY	YEAR
06	22	2009

## 8. OTHER FACILITIES INVOLVED

FACILITY NAME	DOCKET NUMBER
FACILITY NAME	

## 9. OPERATING MODE

N

## 10. POWER LEVEL

100

## 11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> 20.2201(b)         | <input type="checkbox"/> 20.2203(a)(3)(i)             | <input type="checkbox"/> 50.73(a)(2)(i)(C)  | <input type="checkbox"/> 50.73(a)(2)(vii)        |
| <input type="checkbox"/> 20.2201(d)         | <input type="checkbox"/> 20.2203(a)(3)(ii)            | <input type="checkbox"/> 50.73(a)(2)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(viii)(A)    |
| <input type="checkbox"/> 20.2203(a)(1)      | <input type="checkbox"/> 20.2203(a)(4)                | <input type="checkbox"/> 50.73(a)(2)(ii)(B) | <input type="checkbox"/> 50.73(a)(2)(viii)(B)    |
| <input type="checkbox"/> 20.2203(a)(2)(i)   | <input type="checkbox"/> 50.36(c)(1)(i)(A)            | <input type="checkbox"/> 50.73(a)(2)(iii)   | <input type="checkbox"/> 50.73(a)(2)(ix)(A)      |
| <input type="checkbox"/> 20.2203(a)(2)(ii)  | <input type="checkbox"/> 50.36(c)(1)(ii)(A)           | <input type="checkbox"/> 50.73(a)(2)(iv)(A) | <input type="checkbox"/> 50.73(a)(2)(x)          |
| <input type="checkbox"/> 20.2203(a)(2)(iii) | <input type="checkbox"/> 50.36(c)(2)                  | <input type="checkbox"/> 50.73(a)(2)(v)(A)  | <input type="checkbox"/> 73.71(a)(4)             |
| <input type="checkbox"/> 20.2203(a)(2)(iv)  | <input type="checkbox"/> 50.46(a)(3)(ii)              | <input type="checkbox"/> 50.73(a)(2)(v)(B)  | <input type="checkbox"/> 73.71(a)(5)             |
| <input type="checkbox"/> 20.2203(a)(2)(v)   | <input type="checkbox"/> 50.73(a)(2)(i)(A)            | <input type="checkbox"/> 50.73(a)(2)(v)(C)  | <input type="checkbox"/> OTHER                   |
| <input type="checkbox"/> 20.2203(a)(2)(vi)  | <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) | <input type="checkbox"/> 50.73(a)(2)(v)(D)  | Specify in Abstract below<br>or in NRC Form 366A |

## 12. LICENSEE CONTACT FOR THIS LER

## NAME

George E. Baldwin

## TELEPHONE NUMBER (include Area Code)

920-388-8429

## 13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

## 14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO15. EXPECTED  
SUBMISSION  
DATE

MONTH	DAY	YEAR

## ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On April 21, 2009 during review of Kewaunee Power Station (KPS) Technical Specifications (TS) as they relate to containment isolation, Dominion Energy Kewaunee (DEK) staff identified that the procedures for testing containment vacuum relief valves were not adequate to ensure that TS requirements were met, leading to a violation of TS requirements.

The containment vacuum relief valves perform both a vacuum relief function and a containment isolation function. Both of these are safety related functions that must be performed per the design basis for the facility. When coupled with a postulated equipment failure on the same containment penetration, a lack of specific detail regarding the minimum degree of redundancy has led to the failure to apply TS 3.0, Limiting Conditions for Operation. On October 1, 2008 at 1111 hours, during performance of a KPS surveillance procedure, a vacuum relief valve did not reposition when the control room switch was activated. This led to deactivation of vacuum relief valve VB-10B, rendering the vacuum relief function on the "B" train inoperable for approximately five days. KPS operators should have commenced a reactor shutdown per TS 3.0.c based on the duration of VB-10B inoperability.

This event is being reported pursuant to 10 CFR 50.73 (a)(2)(i)(B), any operation or condition which was prohibited by TS.

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## NARRATIVE

**Event Description:**

At 1820 (CDT) on April 21, 2009 during review of Technical Specifications (TS) as they relate to containment isolation, Dominion Energy Kewaunee (DEK) staff identified that the procedures for testing containment vacuum relief valves [RV] were not adequate to ensure that Kewaunee Power Station (KPS) Technical Specification (TS) requirements were met.

KPS procedures SP-55-167-11A / SP-55-167-11B, "Containment Vacuum Breaker Tests (IST) – Train A / B", were reviewed. Containment vacuum relief valves VB-10A/B are tested in both the open and closed direction. VB-11A/B (check valves) are cycled in the open direction to verify free movement. However, the procedures did not provide guidance as to which TS is entered if the valve fails to open or fails to close.

A review of this situation determined that the design of the containment vacuum breaker system [BF] requires separate safety functions for the vacuum relief valves in both the OPEN and CLOSED positions. When coupled with a postulated equipment failure on the same containment penetration, a lack of specific detail regarding the minimum degree of redundancy led to the failure to apply TS 3.0, Limiting Conditions for Operation. On October 1, 2008 at 1111 hours, during performance of a station surveillance procedure, vacuum relief valve VB-11B did not reposition when the control room switch was activated. In accordance with TS 3.6.b.3.A.1, vacuum relief valve VB-10B was closed and deactivated for approximately five days. Once VB-10B was closed, the containment vacuum relief function was rendered inoperable on the "B" train and TS 3.6.a was not met.

Implementing TS 3.6.b permitted the valves to be closed and deactivated or secured in a manner that maintained the valve closed to meet the Containment isolation function. However, because vacuum relief lines are unique in that they must also meet Containment System Integrity (TS 1.0.g) requirements in the OPEN direction, once the valves were closed and deactivated, operators should have also entered TS 3.6.a., which requires Containment System Integrity at all times above the COLD Shutdown condition.

Since TS 3.6.a. has no associated action statement and the condition was not met, shutdown of the plant in accordance with TS 3.0.c should have commenced.

This event is being reported pursuant to 10 CFR 50.73 (a)(2)(i)(B), any operation or condition which was prohibited by the TS.

**Event and Safety Consequence Analysis:**

The open function of containment vacuum relief valves applies to design basis scenarios only and does not apply to accidents that result in core damage. The containment vessel protects against large early release by containing fission products released as a result of core damage. This release would pressurize containment so containment vacuum, and thus the open function of vacuum relief valves, is not a concern for core damage scenarios. Therefore, this event has minimal risk significance.

**Cause:**

The cause of this event was the lack of explicit TS guidance and the lack of procedure guidance for required actions to take when a vacuum relief valve is found inoperable or becomes inoperable.

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The operators reviewed all applicable TS for the failures given. Discussions regarding the containment isolation function and vacuum breaking function did occur; however, the focus was on the ability for containment isolation to function as identified within the Limiting Condition for Operation. Since no Required Action statement was given for the capability or number of vacuum relief valves, the operators reviewed Updated Safety Analysis Report (USAR) section 5.4 which states:

- Individual accumulators are provided at each vacuum breaker isolation butterfly valve to provide one (1) complete cycle of the valve (open and close) for a minimum of 72 hours following a loss of instrument air. Since only one vacuum breaker is required to operate to protect the vessel and the two redundant vacuum breakers are located at different elevations in the annulus and separated by 72 feet around the containment vessel. The consequences of a single failure would be the failure of a single vacuum-breaker isolation butterfly valve to open.

This underlined statement led the operators to believe that the ability of the remaining vacuum relief valve to function would relieve any excessive negative pressure and could be credited since only one vacuum relief valve is required and the system is fully redundant (i.e. each valve has 100% capacity). The lack of a specific TS limit for the vacuum breaking capability, and for the required number of vacuum relief valves, created a condition in which operators relied upon an interpretation of the USAR Section 5.4 to determine the system design and requirements.

**Corrective Actions:**

Actions were initiated to perform the following activities:

1. Revise KPS procedure, SP-55-167-11A, "Containment Vacuum Breaker Test (IST) – Train "A" and SP 55-167-11B, "Containment Vacuum Breaker Tests (IST) – Train B" to identify the vacuum relief valve requirements and operational limit.
2. Review lessons learned on the Containment Vacuum Breaker system events during Licensed Operator Requalification training.
3. Research and validation of KPS TS will continue as transition to Integrated Technical Specifications continues.

**Similar Events:**

A review of Licensee Event Reports covering the past three years identified the following similar events.

LER 2006-007-00, RCS RTD Cross Calibration Procedure Has The Potential To Exceed The TS LCO Allowed Time Limit

LER 2006-010-00, Inadequate calibration of Radiation Monitor R-19

LER 2007-010-00, Allowed Outage Time of the Function for Automatic Initiation of the Control Room Post-Accident Recirculation System on a High Radiation Signal Not Met

LER 2009-003-00, Containment Spray Pump A Inoperable At Degraded Voltage Protection Setpoint

LER 2009-004-00, Failed Backdraft Damper Renders Containment Fan Coil Unit Inoperable

LER 2009-006-00, Protection Instruments Not Calibrated to Individual Technical Specification Set Point Limits