



JUN 9 2006

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

Serial No. 06-491
KPS/LIC/MH:RO
Docket No. 50-305
License No. DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
LICENSEE EVENT REPORT 2005-004-02

Dear Sirs:

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

Report No. 50-305/2005-004-02

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

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

Very truly yours,



Leslie N. Hartz
Site Vice President, Kewaunee Power Station

Attachment

Commitments made by this letter: NONE

IE22

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

Mr. D. H. Jaffe
Project Manager
U.S. Nuclear Regulatory Commission
Mail Stop O-7-D-1
Washington, D. C. 20555

NRC Senior Resident Inspector
Kewaunee Power Station

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION (6-2004)	APPROVED BY OMB NO. 3150-0104 EXPIRES 6-30-2007 Estimated burden per response to comply with this mandatory collection request: 50 hours. 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, (3150-0066), 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.
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)	

FACILITY NAME (1) Kewaunee Power Station	DOCKET NUMBER (2) 05000305	PAGE (3) 1 of 3
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TITLE (4)
Safe Shutdown Potentially Challenged by Unanalyzed Internal Flooding Events and Inadequate Design

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
03	15	2005	2005	-- 004 --	02	06	09	06	FACILITY NAME	DOCKET NUMBER	
OPERATING MODE (9)		N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR .: (Check all that apply) (11)							
POWER LEVEL (10)		000		20.2201(b)		20.2203(a)(3)(ii)	<input checked="" type="checkbox"/>	50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)	
				20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)	
				20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)	
				20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/>	50.73(a)(2)(v)(A)		73.71(a)(5)	
				20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A	
				20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)			
				20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)			
				20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)			
				20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)			
				20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)			

LICENSEE CONTACT FOR THIS LER (12)

NAME Mary Jo Haese/Rick Repshas	TELEPHONE NUMBER (Include Area Code) (920) 388-8277/8217
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

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

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)		
YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/>	No				

ABSTRACT

On March 15, 2005 with the plant in Refueling Shutdown Mode, station personnel determined that the Kewaunee plant design for protection against internal flooding would not ensure that required equipment would be protected from the postulated failure of non-safety related piping in the turbine building. High water level in the turbine building would result in water flowing into certain Engineered Safety Features equipment rooms. Documentation which considers specific flooding events from postulated failures of plant equipment exists, however, a complete internal plant flooding analysis was not developed during or subsequent to the plant's original design. In response to inadequate plant design, physical changes were made to minimize challenges to plant equipment and personnel in combating potential flooding events. Although this LER is not associated with an event resulting in actual flooding of any portion of the plant, the potential for certain piping and tank failures resulting in unacceptable flooding existed. A past operability evaluation has been completed to assess what equipment would have failed during postulated flooding events. The Significance Determination Process assessed the safety consequences and implications for any equipment that would have failed. This condition was determined to be characterized as Yellow. This report describes a safety system functional failure.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Kewaunee Power Station	05000305	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 3
		2005	-- 004	-- 02	

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Event Description

On March 15, 2005 with the plant in Refueling Shutdown Mode, station personnel determined that the Kewaunee plant design for protection against internal flooding would not ensure that required safety-related equipment would be protected from the failure of non-safety related piping [PSP] in the turbine building [NM]. High water level in the turbine building would result in water flowing into certain Engineered Safety Features (ESF) equipment rooms. The ESF equipment rooms are separated from the remainder of the turbine building by non-water-tight doors and the plant floor drain system. The ESF equipment rooms contain the auxiliary feedwater (AFW) [BA], emergency diesel generators (EDG) [EK] [DG], and both 480 volt [ED] and 4160 volt [EB] ESF switchgear [SWGR]. The water could reach levels that may result in failure of certain ESF and plant safe shutdown equipment.

Documentation that considers specific flooding events from postulated failures of plant equipment exists, however, a complete internal plant flooding analysis was not developed during or subsequent to the plant's original design. Information describing the plant's design for internal flooding was limited.

Event Analysis and Safety Significance

This event is being reported under 10 CFR 50.73(a)(2)(ii)(B), any event or condition that resulted in the plant being in an unanalyzed condition, and 10 CFR 50.73(a)(2)(v)(A), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to shut down the reactor and maintain it in a safe shutdown condition. This event was initially reported on March 15, 2005 as a 10 CFR 50.72 non-emergency event under criterion (b)(3)(ii)(B), unanalyzed condition, and criterion (b)(3)(v)(A), safe shutdown capability (reference Event Notification EN# 414496).

This LER is not associated with an event resulting in actual flooding of any portion of the plant. However, flooding or excessive steam releases as a result of random or seismically induced failures of non-Class 1 systems in the turbine building could impact the safety-related function of the AFW pumps, the EDGs, the 480 volt ESF buses [BU], and the 4160 volt ESF buses. Based on the Significance Determination Process, this condition was characterized as Yellow.

This report involves a safety system functional failure.

Cause

A summary of the causes for this event are as follows:

- 1) Design basis documentation regarding flooding, HELB, seismic, and tornado protection lacked detail and was difficult to retrieve. This made it difficult for the plant staff to identify the actual flooding design basis requirements and determine what actions were required to maintain compliance with them.
- 2) Some processes related to maintaining the design basis were weak and were inconsistent with industry standards.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

- 3) The plant staff lacked a thorough knowledge of the design basis and fully effective processes for determining the significance of problems and prioritizing their resolution.
- 4) The plant staff evaluation and resolution of identified and potential problems lacked rigor.
- 5) The PRA submitted for Kewaunee's IPE was flawed with respect to flooding risk.

Corrective Actions

1. The design and licensing basis for internal flooding to support current and future flooding design was compiled.
2. Seismic qualification of selected piping and components was completed.
3. Design modifications to protect Class 1 plant systems and components as defined in the Kewaunee USAR were completed. This included:
 - Installation of flood barriers at the doors to rooms containing auxiliary feedwater pumps, 480 volt safeguards buses, the safe shutdown panel, emergency diesel generators 1A and 1B, and 4160 volt safeguard buses 1-5 and 1-6.
 - Installation of check valves in selected floor drain lines connecting the turbine building and rooms containing Class 1 equipment.
 - Installation of circuitry which trips the circulating water pumps on high water level in the turbine building basement.
 - Rerouting of AFW lubricating oil cooler drain lines to the turbine building to prevent flooding in the AFW pump rooms.
4. In a letter dated November 14, 2005 (Letter from W. R. Matthews (Dominion Energy Kewaunee) to NRC, Kewaunee Power Station Update on Improvement Initiatives (ADAMS Accession No. ML053190099), an update was provided on initiatives that were initially committed to on March 18, 2005 and identified additional improvement actions intended to address the conditions identified in this LER.

Similar Events

LER 2005-002-01, AFW Pumps Susceptible to Damage from Air Entrainment