Dominion Energy Kewaunee, Inc.
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MAY 02 2007

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

Serial No. 07-0341
KPS/LIC/RS: RO
Docket No. 50-305
License No. DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
LICENSEE EVENT REPORT 2007-005-00

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. 50-305/2007-005-00

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 Mr. Richard Sattler at (920) 388-8121.

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

Ms. Margaret H. Chernoff
Project Manager
U.S. Nuclear Regulatory Commission
Mail Stop O-8G9A
Washington, DC 20555-0001

NRC Senior Resident Inspector
Kewaunee Power Station

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

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)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)

Incorrect control power transformers results in inoperable safety-related loads

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	03	2007	2007	-- 005 --	00	05	02	2007	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N
POWER LEVEL (10)	0

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

	20.2201(b)		20.2203(a)(3)(ii)		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)		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
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)	X	50.73(a)(2)(v)(D)		
	20.2203(a)(2)(v)	X	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	TELEPHONE NUMBER (Include Area Code)
Richard Sattler	(920) 388-8121

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)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

ABSTRACT

On 3/3/2007, with the reactor shutdown, it was determined that circuits for several safety-related loads had inadequately sized control power transformers. The loads connected to these circuits may not have actuated when required during a postulated accident with safety injection loads operating and off-site power still connected, at it's minimum voltage limit. The affected loads were:

- Train A Containment Dome Ventilation Fan
- Train A Zone Special Ventilation Exhaust Fan
- Train A Shield Building Ventilation Recirculation Fan
- Train A and B Safety Injection Accumulator Discharge Isolation Valves

When their accident mitigation function was required, the safety injection accumulator discharge isolation valves were aligned in their required accident positions and de-powered. However there were periods when both trains of the affected fans were unavailable for accident mitigation.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications", and 10 CFR 50.73(a)(2)(v)(D), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident."

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

Event Description:

On 3/3/2007, with the reactor shutdown, it was determined that circuits for several safety-related loads had inadequately sized control power transformers. The loads connected to these circuits may not have actuated when required during a postulated accident with safety injection (SI) loads operating and off-site power still connected, at it's minimum voltage limit. The affected loads were:

- Train A Containment Dome Ventilation Fan
- Train A Zone Special Ventilation Exhaust Fan
- Train A Shield Building Ventilation Recirculation Fan
- Train A and B Safety Injection Accumulator Discharge Isolation Valves

When their accident mitigation function was required, the SI accumulator discharge isolation valves were aligned in their required accident positions and de-powered. However there were periods when both trains of the affected fans were unavailable for accident mitigation.

Event Analysis:

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications", and 10 CFR 50.73(a)(2)(v)(D), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident."

While evaluating Motor Control Circuit (MCC) control voltage design limits, it was discovered that the control power transformer (CPT) for the Train A Zone Special Ventilation Exhaust Fan was incorrectly sized (100VA instead of the required 150VA). If SI initiated and the substation was at minimum allowed voltage, the fan might not have started due to insufficient voltage at the motor starter. This condition rendered Train A of the Auxiliary Building Zone Special Ventilation inoperable.

On 3/4/07, the Extent of Condition inspection identified four additional safety related loads with undersized CPTs (Train A Containment Dome Ventilation Fan, Train A Shield Building Ventilation Recirculation Fan, and Train A and B Safety Injection Accumulator Discharge Isolation Valves). These four circuits were also determined to have 100VA CPTs installed instead of the specified 150VA for Size 2 General Electric starters. Evaluations of the four additional circuits indicated that they too may not have actuated on an SI initiation with the substation at minimum allowed voltage.

Technical Specification 3.6.c states:

c. All of the following conditions shall be satisfied whenever CONTAINMENT SYSTEM INTEGRITY, as defined by TS 1.0.g, is required:

   1. Both trains of the Shield Building Ventilation System, including filters and heaters shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains

of the Shield Building Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

2. Both trains of the Auxiliary Building Special Ventilation System including filters and heaters shall be OPERABLE or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Auxiliary Building Special Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days.

TS Section 1.0.g states:

g. CONTAINMENT SYSTEM INTEGRITY

CONTAINMENT SYSTEM INTEGRITY is defined to exist when:

1. The non-automatic Containment System isolation valves and blind flanges are closed, except as provided in TS 3.6.b.
2. The reactor containment vessel and shield building equipment hatches are properly closed.
3. At least one door in both the personnel and the emergency airlocks is properly closed.
4. The required automatic Containment System isolation valves are OPERABLE, except as provided in TS 3.6.b.
5. All requirements of TS 4.4 with regard to Containment System leakage and test frequency are satisfied.
6. The Shield Building Ventilation System and the Auxiliary Building Special Ventilation System satisfy the requirements of TS 3.6.c.

TS Section 3.0.c states:

c. Standard Shutdown Sequence

When a LIMITING CONDITION FOR OPERATION is not met, and a plant shutdown is required except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 36 hours.

Thus, with Train A Zone Special Ventilation Exhaust Fan and Train A Shield Building Ventilation Recirculation Fan inoperable whenever CONTAINMENT SYSTEM INTEGRITY was required, Technical Specification 3.6.c was not met. This condition exceeded the allowable times specified in Technical Specification 3.6.c and 3.0.c.

Technical Requirements Manual (TRM) section 3.5.1.a.1 states:

APPLICABILITY

During OPERATING or HOT STANDBY Modes.

OBJECTIVE

To monitor the beyond design-basis accident containment air and provide a continuous indication of hydrogen concentration.

TECHNICAL REQUIREMENTS

Administrative Limiting Conditions for Operation (ALCOs)

a. Two trains of the Containment Hydrogen Monitoring System shall be OPERABLE except as allowed below:
   1. One train may be inoperable for 30 days.
   2. Two trains may be inoperable for 72 hours.

b. If operability is not restored in the timeframes above, then immediately initiate a Corrective Action to assure prompt attention and adequate management oversight.

When a Containment Dome Fan is inoperable, it renders the Containment Hydrogen Monitoring Train inoperable. Thus, Train A Containment Hydrogen Monitoring was also inoperable. There were times when both trains of Containment Dome Fans (and thus both trains of Containment Hydrogen Monitoring) were inoperable.

During this condition, each time the plant was in the OPERATING or HOT STANDBY modes, the requirements of TRM 3.5.1 were not met for a duration greater than that allowed by the TRM.

Safety Significance:

The Shield Building Ventilation (SBV) system is a system of fans and ducts for collecting the leakage from the Reactor Containment Vessel penetrations into the annulus of the Shield Building and discharging it through filters (particulate-absolute-charcoal) to the monitored Containment System Vent. The SBV System is designed to provide three functions; to produce a negative pressure within the annulus immediately following the loss-of coolant accident, to ensure the mixing of any Reactor Containment Vessel penetration leakage into a large portion of the Shield Building annulus, thereby avoiding potential direct streaming of the radioisotopes to the exhaust duct and hence increasing holdup within the annulus, and to provide long-term cleanup of fission products from the annulus air by recirculation after the loss-of-coolant accident.

The Auxiliary Building Special Ventilation System (Zone SV) is designed to reliably collect any potential Containment System leakage that might bypass the Shield Building annulus and to cause it to pass through charcoal filters before reaching the environment.

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

With the conditions that existed, the calculated doses from a design basis accident could have exceeded the guidelines stated in 10 CFR Part 100.

The Containment Dome Ventilation Fan, Zone Special Ventilation (SV) Exhaust Fan and Shield Building Ventilation Recirculation Fan do not have any effect on core damage. Furthermore, they do not contribute to a large early release, since this magnitude of release requires either containment failure or bypass.

- A containment overpressurization failure is the most likely type of failure. In this case, with a direct opening to the atmosphere, Containment Dome Ventilation Fans and Shield Building Ventilation Recirculation Fans are not effective.
- In a containment bypass scenario, specifically an Interfacing Systems LOCA, the Zone SV System provides some dose attenuation, but since the system is not designed for post-core damage doses, it is not credited in the probabilistic risk assessment model.

Therefore this event does not affect the probabilistic risk assessment for core damage frequency.

The Safety Injection Accumulator Discharge Isolation Valve power supplies had no effect on risk, since these valves were aligned in their required accident positions and de-powered.

Cause:

This condition has existed for at least the last fourteen years and possibly since initial construction. No definitive cause has been determined.

Corrective Actions:

An extent of condition review was performed and all identified deficiencies were corrected. The control power transformers for the five affected circuits have been replaced with properly sized transformers.

Similar Events:

None