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DEC 0 9 2009

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

Serial No. 09-756
LIC/JG/RO
Docket No.: 50-305
License No.: DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
LICENSEE EVENT REPORT 2009-009-00

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

Report No. 50-305/2009-009-00

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 Mr. Jack Gadzala at (920) 388-8604.

Very truly yours,

Stephen E. Scace
Site Vice President, Kewaunee Power Station

Attachment(s)

Commitments made by this letter: NONE

IE22
NRR

cc: Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
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Mr. P. S. Tam
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NRC Senior Resident Inspector
Kewaunee Power Station

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORYCOMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

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.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Kewaunee Power Station	**05000305**	**1** OF **4**

4. TITLE

Automatic Start of Emergency Diesel Generator due to Safeguards Bus Power Supply Transformer Trip

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	15	2009	2009	-- 009 --	00	12	09	2009	FACILITY NAME	

9. OPERATING MODE

N

10. POWER LEVEL

0

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

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (*include Area Code*)
Alex House	**920-388-8639**

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*) ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

At 1204 on October 15, 2009, with the reactor in cold shutdown mode, power was lost to Safeguards Bus 5. Loss of power to the bus resulted in automatic actuation of emergency diesel generator (EDG) A to re-energize the bus. The power loss was caused by tripping and lockout of the Tertiary Auxiliary Transformer, which supplies the bus, due to an incorrectly set transformer relay input parameter.

The single operating residual heat removal (RHR) pump was being powered by Safeguards Bus 5 when it lost power. Operators restored RHR flow by starting the opposite train RHR pump, which had been in standby. The unaffected safeguards bus was being powered from an alternate power supply at the time of this event. Therefore, based on the unavailability of offsite power via the normally aligned electrical supply transformers, operators conservatively declared Technical Specification (TS) 3.1.a.2.B not met for both trains of RHR.

This event is being reported pursuant to 10 CFR 50.73 (a)(2)(iv)(A), any event or condition that resulted in manual or automatic actuation of the listed systems. It is also being conservatively reported pursuant to 10 CFR 50.73 (a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications.

NARRATIVE

Event Description:

During the fall 2009 refueling outage, the Kewaunee Power Station (KPS) Tertiary Auxiliary Transformer (TAT) [XFMR] was replaced with a new transformer. The TAT is normally aligned to provide offsite electrical power supply to one of the two 4160 VAC Safeguards Buses [BU], 1-5 or 1-6 (commonly called Buses 5 and 6). Normal offsite electrical power supply to 4160 VAC Safeguards Buses 5 and 6 is also provided by the Reserve Auxiliary Transformer (RAT) [XFMR]. Buses 5 and 6 are normally split and powered from separate transformers.

On October 15, 2009, the reactor [RCT] was in cold shutdown mode with the TAT supplying Safeguards Bus 5. The RAT was out of service for planned maintenance. As part of the planned maintenance period for the RAT, the main auxiliary transformer (MAT) [XFMR] had been realigned to supply normal offsite power to Bus 6. The MAT is sufficient to supply all necessary accident and post-accident load requirements from any one of the four available transmission lines [CBL].

At 1204, Safety Injection (SI) Pump [P] A, which is powered from Bus 5, was started to fill SI Accumulator [ACC] A. When the SI pump was started, a lockout of the TAT occurred due to differential relay 87-2/TAT1 actuating. This resulted in a loss of power to Bus 5. Bus 6 was unaffected by this condition and remained powered throughout the event.

Loss of power to Bus 5 resulted in automatic actuation of emergency diesel generator (EDG) [DG] A to re-energize the bus. The EDG started and restored power to the bus as designed.

The operating residual heat removal (RHR) pump [P] was being powered by Safeguards Bus 5 when it lost power. Operators restored RHR flow by starting the opposite train RHR pump, which had been in standby.

KPS Technical Specification (TS) 3.1.a.2.B, "Reactor Coolant System", states the following (in part).

A. Two residual heat removal trains shall be OPERABLE whenever the average reactor coolant temperature is ≤ 200°F and irradiated fuel is in the reactor, except when in the REFUELING MODE with the minimum water level above the top of the vessel flange ≥ 23 feet, one train may be inoperable for maintenance.

   1. Each residual heat removal train shall be comprised of…

   2. If one residual heat removal train is inoperable, then corrective action shall be taken immediately to return it to the OPERABLE status.

KPS TS 3.7, "Auxiliary Electrical Systems", states the following (in part).

a. The reactor shall not be made critical unless all of the following requirements are satisfied:

   1. The reserve auxiliary transformer is fully operational and energized to supply power to the 4160-V buses.

   2. A second external source of power is fully operational and energized to supply power to emergency buses 1-5 and 1-6.

3. The 4160-V buses 1-5 and 1-6 are both energized.

b. During power operation or recovery from inadvertent trip, any of the following conditions of inoperability may exist during the time intervals specified. If OPERABILITY is not restored within the time specified, then within 1 hour action shall be initiated to achieve HOT STANDBY within the next 6 hours.

1. Either auxiliary transformer may be out of service for a period not exceeding 7 days provided the other auxiliary transformer and both diesel generators are OPERABLE.

c. When its normal or emergency power source is inoperable, a system, train or component may be considered OPERABLE for the purpose of satisfying the requirements of its applicable LIMITING CONDITION FOR OPERATION, provided:

1. Its corresponding normal or emergency power source is OPERABLE; and

2. Its redundant system, train, or component is OPERABLE.

4160 VAC Safeguards buses 5 and 6 support the RHR pumps at all times when the pumps are required to be operable.

Although the MAT was fully operational and powering Bus 6 at the time of the event, it is not one of the two auxiliary transformers that are normally aligned to power the two safeguards buses. Neither of the other two auxiliary transformers (RAT or TAT) were available to either Bus 5 or Bus 6. Therefore, as a conservative measure, the requirements of TS 3.1.a.2.B were deemed not met and both RHR trains were declared inoperable per TS 3.7.c until the RAT was returned to service and aligned to Bus 5 in place of the locked out TAT. Consequently, this condition was conservatively considered to have been prohibited by the plant's TS. The MAT continued to supply Bus 6 with normal offsite power throughout this event.

This event is being reported pursuant to 10 CFR 50.73 (a)(2)(iv)(A), any event or condition that resulted in manual or automatic actuation of the listed systems. It is also being conservatively reported pursuant to 10 CFR 50.73 (a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications.

This event was initially reported to the NRC via the Emergency Notification System (ENS) on October 15, 2009 (EN 45438).

Event and Safety Consequence Analysis:

The standby EDG started and powered Bus 5 as designed. The standby RHR pump was started per plant procedures to restore RHR flow through the core. The reactor was not in a reduced inventory condition and alternate cooling was available with SI Pump B. The calculated time to boiling in the core at the time of this event was about 2 ½ hours. Therefore, this event had minimal risk significance.

Cause:

The tripping and lockout of the Tertiary Auxiliary Transformer, which supplies Safeguards Bus 5, was caused

by an incorrectly set transformer relay input parameter. The primary cause of the incorrectly set transformer relay input parameter was the lack of clear written requirements in the design control documentation for adding relay input parameters to programmable digital devices (Basler relays).

Design change documentation and supporting calculation documentation should have provided sufficient details to allow a qualified relay technician to insert the correct Basler relay settings and relay input parameters. The new Basler relay (microprocessor) was replacing an existing electro-mechanical relay. The new Basler relay required calculated setpoints and relay input parameters whereas the existing relay only required setpoints.

For this condition, the design change calculation contained data associated with Basler relay settings, but did not contain the data specifically associated with relay input parameters (required for a microprocessor type relay). The section of the design change documentation that identified the Basler relay as a "programmable device" identified who would program the relay but did not contain the specific programming required. This lack of clear written requirements in the design change process created an open (unfilled) specification step (identifying relay input parameters) that was not provided prior to the relay technician programming the Basler relay.

Corrective Actions:

As immediate corrective action, operators verified proper operation of EDG A powering Bus 5. Operators restored RHR flow by starting the opposite train RHR pump, which had been in standby.

Normal power was restored to Bus 5 from the Reserve Auxiliary Transformer and EDG A was restored to normal standby condition.

To prevent recurrence, actions were initiated to modify the design change and calculation processes. If a modification adds or modifies a programmable digital device; or, if the output of a calculation is to be used in support of a programmable digital device, then the revised processes would ensure that controlled documentation is developed and provided that identifies device inputs/settings (programming, settings, input parameters, etc.) that are needed for the installed configuration and required interactions.

Similar Events:

A review of Licensee Event Reports covering the past three years did not identify any similar events.