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

Serial No. 12-369
LIC/MH/RO
Docket No.: 50-305
License No.: DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
SUMMARY OF FACILITY CHANGES, TESTS AND EXPERIMENTS AND SUMMARY
OF COMMITMENT CHANGES

Pursuant to 10 CFR 50.59(d)(2), enclosed is a summary description of Facility Changes, Tests and Experiments evaluated in accordance with 10 CFR 50.59(c) and implemented at the Kewaunee Power Station (KPS) during the last reporting period, which is defined as not to exceed 24 months.

A commitment change evaluation summary for those commitment changes that occurred during the last reporting period is also enclosed.

The enclosed summary encompasses all changes that occurred in both of the stated areas since our prior submittal dated June 1, 2011 (reference 1).

If you have any questions or require additional information, please feel free to contact Ms. Mary Jo Haese at 920-388-8277.

Very truly yours,

A handwritten signature in black ink that reads "Jeffrey T. Stafford".

Jeffrey T. Stafford
Director Safety and Licensing
Kewaunee Power Station

Commitments made by this letter: NONE

Reference:

1. Letter from Michael J. Wilson (Dominion Energy Kewaunee, Inc.) to Document Control Desk (NRC), "Summary of Facility Changes, Tests and Experiments and Summary of Commitment Changes," dated June 1, 2011.

TE47
MRK

cc: Regional Administrator, Region III
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ATTACHMENT 1

**SUMMARY OF FACILITY CHANGES, TESTS AND EXPERIMENTS
AND SUMMARY OF COMMITMENT CHANGES**

**KEWAUNEE POWER STATION
DOMINION ENERGY KEWAUNEE, INC.**

10 CFR 50.59 Evaluations

50.59 Evaluation #11-02-00

Activity Evaluated

Design Change (DC) KW-10-01101, Emergency Diesel Generator (EDG) Ventilation Air Supply Modification

Brief Description

DC KW-10-01101 provided the EDG ventilation damper actuators (air intake, exhaust, and recirculation dampers) with a safety related air supply separate from the EDG Air Start System. This was accomplished by removing the air supply to the EDG ventilation damper actuators from the EDG Air Start System and providing an air supply from the station Instrument Air System. Because the Instrument Air System is not safety related, an automatic safety related backup system was provided using compressed dry air bottles. The backup air supply provides a minimum seven days operation for the EDG ventilation dampers.

Reason for Change

This modification was performed as a result of Operability Determination (OD) 273 that addressed a Quality Assurance (QA) typing downgrade made to the EDG Air Start System in 1990. The QA typing downgrade included implementation of a manual operator action to valve into service the reserve air receivers in the event of a loss of compressed air supply for continued ventilation damper operation. OD 273 states that the proper design and licensing basis information to support the change was unable to be located.

The EDG Air Start System, one train each per EDG, provides a source of air to the EDG air start motors as well as the EDG Service Water control valve and previously, to the EDG room ventilation dampers. Each EDG Air Start train is comprised of four safety-related air receivers (two primary and two reserve), a safety related air compressor (with non-safety related components installed), an air dryer and cooler, and the tubing and valves to provide air pressure to the supported components. The air compressors are powered from safety related motor control centers.

The EDG ventilation dampers are safety related components and are vital for the operation of each EDG by providing combustion air to the diesel engines and regulating the temperature within each EDG room. Providing a safety-related air supply for damper operation from the EDG Air Start System could not be accomplished because the EDG Air Start air compressors could no longer be fully qualified as safety related.

DC KW-10-01101 was performed to provide a normal, unlimited air source to the EDG ventilation dampers from the non-safety related Instrument Air System. In addition, the modification provided an automatic seven day supply of safety related bottled air in the event of a loss of pressure in the Instrument Air System. This change also removed the manual action associated with use of the EDG air start system air receivers.

Summary

DC KW-10-01101 provided the EDG ventilation damper actuators (air intake, exhaust, and recirculation dampers) with a safety related air supply separate from the EDG Air Start System. This modification resolved OD 273, issued for a lack of proper documentation to support a QA typing downgrade of components in the EDG Air Start System and removed the manual action related to use of the reserve air receivers.

The 50.59 Evaluation performed for the modification addressed the new action to replace the compressed dry air bottle supply to provide EDG ventilation damper operation beyond seven days. The EDG ventilation dampers are designated as components in support of the EDG. If the EDG fails to operate, the EDG ventilation dampers will not operate. The seven day compressed air supply for the EDG ventilation dampers is consistent with the seven day supply of EDG fuel oil and EDG lube oil (ITS 3.8.3 and Bases). The new action to replenish the air bottle supply for the EDG ventilation dampers was determined not to result in more than a minimal increase in the likelihood of occurrence of a malfunction. Instructions for compressed air bottle replacement have been included in plant operating procedures and operator training has been provided on the procedures. The compressed air bottle system is designed to maintain air pressure to the ventilation dampers during the bottle replacement. Environmental conditions will not prohibit entry into the area to perform the air bottle replacement post-accident. Recovery from a credible human performance error can easily be remedied. Additional compressed air bottles are maintained onsite to support operation of one EDG for a minimum of 30 days to respond to any plant event. In addition, non-safety related local and remote Control Room alarms are provided as operator aids for advance warning of air supply depletion. Replacing the air bottles occurs approximately seven days after the start of the accident, during the recovery phase of the event, and has no impact on the consequence of an accident.

This change was determined not to result in more than a minimal increase in the likelihood of occurrence of a malfunction, and has no impact on the consequence of an accident.

50.59 Evaluation #11-06-00

Activity Evaluated

DC KW-11-01121, Main Feedwater Pump Trip on Fast Bus Transfer

Brief Description

DC KW-11-01121 provided an automatic trip of a selected main feedwater pump (MFP) during initiation of a fast bus transfer of non-safety related buses to the Reserve Auxiliary Transformer (RAT), provided the opposite MFP breaker is closed. This change was implemented to ensure that adequate voltage will remain at the RAT during a transfer due to a loss of power from the Main Auxiliary Transformer (MAT).

When both MFPs are running, the new trip feature will be used when the Reserve Supply Transformer (RST) Load Tap Changer (LTC) is operated in Manual; and is required when the LTC is operated in Automatic and the post-trip differential voltage (Delta-V) exceeds a minimum analyzed value. A new selector switch has been installed in the Control Room for the operator to select MFP A, MFP B, or no MFP, to trip during a fast bus transfer.

Reason for Change

When a fast bus transfer occurs as a result of energizing relays 86/T1A and 86/T1B (instantaneous generator lockout) or 86/T1C and 86/T1D (time delay turbine trip), a large amount of electrical load is rapidly applied to the RAT. The recent upgrades to the RAT/RST System increase the system voltage drop and make it more difficult for the RAT to support the added load during a fast bus transfer. A study was performed to review various solutions. The MFP trip during a fast bus transfer was selected as the means to shed unnecessary electrical load.

Summary

DC KW-11-01121 provided an automatic trip of a selected MFP during initiation of a fast bus transfer of non-safety related buses to the RAT. This change was implemented to ensure that adequate voltage will remain at the RAT during a transfer due to a loss of power from the MAT.

The 10 CFR 50.59 Screen concluded that a relay, control switch or control cable malfunction could result in an inadvertent trip of MFPs A and/or B, resulting in loss of Normal Feedwater, or could result in a failure to trip MFP A or B on a fast bus transfer, which could result in a degraded voltage condition on the RAT and 4.16 kV Supply Bus 1-6.

A 50.59 Evaluation was performed that indicates the new relays and control switch are the same types used at Kewaunee for other safety related applications. The new relays, control switch and control cables meet applicable design, seismic, material and construction standards. Preventive maintenance for the new components will be implemented. Consequently, the new components will be at least as reliable as other Main Feedwater and Alternating Current power components. The 50.59 Evaluation concluded the activity will not result in more than a minimal increase in the likelihood of occurrence of a malfunction of a system/structure/component (SSC) important to safety previously evaluated in the Updated Safety Analysis Report (USAR). A degraded voltage condition on the RAT resulting from a fast bus transfer is not an accident evaluated in the USAR, but has been considered in the existing Kewaunee design and is bounded by the evaluated Loss of Offsite Power event. This change does not result in a more than minimal increase in the frequency of a Loss of Normal Feedwater event. Additionally, a failure of the modified circuits will not result in an accident of a different type than previously analyzed in the USAR.

This change does not introduce a new failure mode, it did not create a possibility for a malfunction of an SSC important to safety with a different result than any previously evaluated, and the potential malfunctions are bounded by events previously analyzed in the USAR.

50.59 Evaluation #12-02-00

Activity Evaluated

Engineering Technical Evaluation (ETE), ETE-KW-2012-0020, Revision 0, Implement Calculation C10440, Revision 3, Battery Room Heat Up Following a Station Blackout

Brief Description

The licensing basis for Kewaunee Station Blackout (SBO) heat up calculations was based on NUMARC 87-00, Revision 0. The Kewaunee USAR did not specifically call out the use of the NUMARC 87-00 as the methodology for determining the Battery Room heat up following a SBO event, however, correspondence between the licensee (WPSC) and the Nuclear Regulatory Commission (NRC) at the time the SBO Rule was implemented clearly states that the NUMARC 87-00 method was used to determine Battery Room heat up. A new evaluation of the Battery Room heat up following a SBO event was performed using a different methodology, GOTHIC, Version 7.2a. Therefore, a 50.59 Evaluation was performed to assess the methodology change.

Reason for Change

Calculation C10440, Battery Room Heat Up Following Station Blackout, Revision 3, was performed and includes recent changes to the Battery Room heat loads. This revision

was performed using a new methodology, GOTHIC, Version 7.2a, instead of the NUMARC 87-00 methodology used in calculation Revisions 0 through 2. With the recent heat loads added to the Battery rooms and the conservatisms in the NUMARC methodology, the potential existed for the calculated air temperature to exceed acceptable limits. Consequently, the calculation methodology was changed to a more realistic and accepted method, GOTHIC, Version 7.2a.

Summary

A new evaluation of the Battery Room heat up following a SBO event was performed using a different methodology, GOTHIC, Version 7.2a. The Kewaunee USAR did not specifically call out the use of the NUMARC 87-00 as the methodology for determining the Battery Room heat up following a SBO event, however, the use of NUMARC 87-00 methodology was stated in earlier correspondence with the NRC.

GOTHIC version 7.2a is used for similar evaluations, such as Kewaunee's post-accident room heat up determinations for the Control Room Exclusion Zone, the Emergency Diesel Generator Rooms, and the Auxiliary Building Special Ventilation Zone. GOTHIC is also approved at Kewaunee by the NRC for modeling Containment and the Auxiliary Building for High Energy Line Break analysis. GOTHIC was used at Surry Power Station for evaluating Main Control Room heat up following a loss of heat removal. The Safety Evaluation Report (SER) issued for the associated Surry License Amendments states that the use of the GOTHIC computer code for the room heat up analysis without chilled water was acceptable to provide reasonable assurance that the room ambient temperature would not affect required equipment in the room. The use of GOTHIC for the Battery Room heat up following a SBO event is also consistent with Regulatory Guide 1.155, Station Blackout, issued June 1988, as revised August 1988, that states equipment will be considered acceptable for SBO temperature environments if an assessment has been performed that provides reasonable assurance the required equipment will remain operable. Consequently, the Kewaunee Battery Room heat up calculation provides reasonable assurance that the Battery Room temperature will remain less than 120 °F so that required equipment will not be adversely affected.

The 50.59 Evaluation for the methodology change for the Battery Room evaluation concluded that the use of GOTHIC, a methodology approved by NRC for similar applications and used within the limits of the applicable SER, is not considered a departure from a method of evaluation described in the USAR.

Commitment Change Evaluation Summary

There are no commitment change evaluations to report for this period.