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

Serial No. 22-148
LIC/RR/R0
Docket Nos.: 50-305, 72-64
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) and 10 CFR 72.48(d)(2), a report containing a brief description of any changes, tests, and experiments, including a summary of the evaluation of each, must be submitted to the NRC at intervals not to exceed 24 months.

There were no 10 CFR 50.59 Evaluations completed and implemented during the period since our prior submittal dated May 11, 2020 (Reference 1). Attachment 1 provides a summary description of Facility Changes, Tests and Experiments identified in 10 CFR 72.48 evaluations performed for the Kewaunee Power Station (KPS) during the last 24 months.

No commitment changes occurred during the last 24 months.

If you have any questions or require additional information, please contact Mr. William Zipp at 920-304-9729.

Sincerely,

A handwritten signature in black ink that reads "Bradly J. McMahon".

Bradly. J. McMahon
Director Kewaunee Site

Commitments made by this letter: NONE

Reference:

1. Letter from Bradly J. McMahon (Dominion Energy Kewaunee, Inc.) to Document Control Desk (NRC), "Summary of Facility Changes, Tests and Experiments and Summary of Commitment Changes," dated May 11, 2020.

IE47
NMSS26
NMSS
NRR

ATTACHMENT 1

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

KEWAUNEE POWER STATION
DOMINION ENERGY KEWAUNEE, INC.

72.48 Evaluation – NAC International CAR 21-02

Activity Evaluated

NAC International, MAGNASTOR Final Safety Analysis Report, per licensing design change request DCR(L) 71160-FSAR-11A and 72.48 evaluation number NAC-21-MAG-029.

Brief Description of Change

MAGNASTOR FSAR Section 4, Thermal Evaluation, subsections 4.4, 4.9, 4.10, 4.11 and various Tables in subsection 4.4 were revised to reflect corrections made to thermal models. Specifically, the value used for fuel pellet size as an input to the thermal modeling was corrected, and this affected thermal evaluations and their results.

Reason for Change

In NAC thermal modeling used to determine the effective thermal properties for PWR fuel assemblies in NAC dry fuel storage systems including the MAGNASTOR system in use at Kewaunee Power Station, incorrect fuel rod dimensions were used. Fuel rod cladding outside diameter was used in error as fuel pellet diameter. This produces non-conservative thermal results (e.g., higher peak cladding temperatures) for transient conditions such as vacuum drying and Transportable Storage Canister transfer conditions. Revisions were made in several areas of FSAR Section 4 to correct the modeling error. For the NAC MAGNASTOR system the reanalyzed results remained within the established limits for maximum fuel cladding temperature in the current KPS FSAR Rev. 8 Table 2.1-1 of 752 deg.F. for normal and transfer conditions; and 1058 deg.F. for off-normal and accident conditions.

Summary of the Evaluation

The effective thermal properties were updated and the effective properties for PWR 14x14 fuel are shown in Table 4.4-1. Thermal analysis were re-performed. The updated system temperatures remain less than the applicable temperature limits for normal, off-normal and accident conditions as described in the FSAR (as updated) and cask CoC. The updated system temperatures do not have any impact on the operating procedures and the system meets the applicable NRC requirements and design standards as detailed in the FSAR (as updated). Therefore, the change in system temperatures is considered a minimal increase and does not affect the frequency of occurrence of an accident previously evaluated in the FSAR (as updated).

The changes do not involve a revision to the design, fabrication, construction, testing and performance standards previously used for the MAGNASTOR storage system. The temperatures remain below the allowable temperatures and do not affect the functional requirement of the MTC / PMTC for transfer operation or the concrete cask for the storage condition. The updated temperatures do not require changes of the operational time limits for the system (such as LCO 3.1.1) or thermal contingency events (potential malfunction) as described in the FSAR (as updated). The changes do not reduce the system / equipment redundancy, diversity, separation, or independence, nor substitute any manual actions for an automatic action for performing design functions described in the FSAR (as updated).

The radiological consequences of accidents or malfunctions previously evaluation in the FSAR (as update) are not impacted by the updated fuel cladding temperatures for the transfer operation or storage condition.

Thermal evaluations for storage and transfer conditions were reperformed. Updated fuel clad temperatures remain below the allowable temperatures, though the updated temperatures are in some cases higher than those presented in the existing FSAR sections, tables, and figures. The modeling method used is consistent with the thermal models used for the concrete cask, TSC, and transfer cask as described in the FSAR. Only the effective properties used as input

were changed. Also, the methodology for how the effective thermal property is calculated is not revised or replaced. Only the input parameters into the method are changed (i.e., fuel rod physical dimensions). Therefore, the change does not result in a departure from a method of evaluation described in the FSAR (as updated).