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10 CFR 72.7

BVY 17-041

December 7, 2017

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

SUBJECT: Supplement to Exemption Request from Certain Requirements of 10 CFR 72.212 and 10 CFR 72.214 to Support the Dry Fuel Loading Campaign (EPID No. L-2017-LLE-0005)
Vermont Yankee Nuclear Power Station
License No. DPR-28
Docket Nos. 50-271, 72-59 and 72-1014

- REFERENCES:**
1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Exemption Request from Certain Requirements of 10 CFR 72.212 and 10 CFR 72.214 to Support the Dry Fuel Loading Campaign," BVY 17-006, dated May 16, 2017 (ML17142A358)
 2. Letter, USNRC to Holtec International, "Certificate of Compliance No. 1014, Amendment No. 10 for the HI-STORM 100 Cask System (CAC No. L24979)," dated May 25, 2016 (ML16144A177)
 3. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Response to Request for Additional Information Related to Exemption Request from Certain Requirements of 10 CFR 72.212 and 10 CFR 72.214 to Support the Dry Fuel Loading Campaign (CAC No. L25219)," BVY 17-031, dated September 7, 2017 (ML17255A236)

Dear Sir or Madam:

By letter dated May 16, 2017 (Reference 1), Entergy Nuclear Operations, Inc. (ENO) submitted a request for exemption from certain requirements of 10 CFR 72.212 and 72.214 for Vermont Yankee Nuclear Power Station (VY). These regulations require, in part, compliance with the terms and conditions of the Holtec International (Holtec) Cask System Certificate of Compliance (CoC) for spent fuel storage at the VY's independent spent fuel storage installation. Specifically, the requested exemption would allow the loading of selected fuel assemblies with shorter cooling times and higher heat loads than those specified in CoC Amendment 10 (Reference 2) into MPC-68M multi-purpose canisters (MPCs), as well as an optional loading pattern for the MPC-68M.

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In Reference 3, VY provided a response to a Request for Additional Information (RAI) from the U.S. Nuclear Regulatory Commission (NRC), supplementing the information in Reference 1.

Subsequently, it has been identified that an additional supplement to Reference 1 is warranted. Specifically, ENO has determined that the proposed peak "Fuel Cladding" temperature (PCT) in the revised Table 4.III.7, as provided in Attachment 2 of Reference 1, should be revised based upon the following:

The analysis of record in CoC Amendment 10 is based on a total canister heat load of 36.9 kW and a maximum per storage location decay heat of 710 watts (reference Table 2.1.30 of the Cask Final Safety Analysis Report). In comparison, for VY's site specific cask loading plan, the highest heat load cask planned for loading is approximately 24.5 kW and the highest decay heat in any cell location is 912 watts. Although the planned per assembly decay heat is slightly higher than that in the approved Amendment 10 pattern, the total canister heat load, which has a first order effect on the PCT rise during a postulated duct blockage event, is substantially lower. Based on this comparison, it is concluded that the PCT for canisters with VY's site specific heat loads will be lower than the temperature of 722°F in Amendment 10, providing reasonable assurance that the PCT will remain less than 752°F.

Accordingly, the proposed changes to Table 4.III.7 as provided in VY's exemption request (Reference 1) is revised as shown below, reverting the Fuel Cladding temperature to the 722°F value reported in CoC Amendment 10 and adding a new Note 2 (all other previously proposed changes to this table are not affected by this supplement):

Table 4.III.7: Maximum Temperatures and Pressures Under 32-Hour 100% Air Inlets Blockage Accident

Component	Temperature (°F)
Fuel Cladding	722 ^{Note 2}
Fuel Basket	818709
Basket Shims	702626
MPC Shell	639571
MPC Lid ^{Note 1}	599543
Overpack Inner Shell	531462
Body Concrete (Local Temperature)	525456
Lid Concrete (Local Temperature)	447375
Pressure (psig)	
MPC	111.6116.3
<p>Note 1: Maximum thru thickness section average temperature reported.</p> <p>Note 2: The fuel cladding maximum temperature reported in this table is from calculations based on a canister heat load limit of 36.9 kW and a maximum per storage decay heat of 710 watts. Figure 2.III.1 optional loading pattern for the MPC-68M allows for higher canister and per cell allowable heat loads, which could result in a higher maximum cladding temperature. However, for any cask planned for loading at VY, the highest heat load is approximately 24.5 kW and the highest decay heat in any cell location is 912 watts. Although this highest per assembly decay heat is higher than the maximum used in the previous calculation, the total canister heat load, which has a first order effect on the cladding temperature rise during this accident, is substantially lower. Based upon this comparison, it is concluded that the maximum fuel cladding temperature for any cask planned for loading at VY is lower than 722°F.</p>	

This letter contains no new regulatory commitments.

Should you have any questions concerning this letter, please contact me at (802) 451-3374.

Sincerely,



CCC/tbs

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