

March 22, 2016

Mr. Christopher J. Wamser, Site VP
Entergy Nuclear Operations, Inc.
Vermont Yankee
320 Governor Hunt Road
Vernon, VT 05354

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RELATED TO 10 CFR 20.2002
ALTERNATE WASTE DISPOSAL REQUEST FOR VERMONT YANKEE
NUCLEAR POWER STATION (CAC NO. L53116)

Dear Mr. Wamser:

By letter dated January 14, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16029A071), Entergy Nuclear Operations, Inc. submitted a request for alternate disposal under 10 CFR 20.2002 of liquid low-activity radioactive waste from the Vermont Yankee Nuclear Power Station to the US Ecology hazardous waste facility in Idaho.

We have determined that additional information is necessary to complete our review of this request. The additional information requested is enclosed.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions regarding this action, please contact me at 301-415-6634 or via e-mail Jack.Parrott@nrc.gov.

Sincerely,

/RA/

Jack D. Parrott, Senior Project Manager
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety and Safeguards

Docket No.: 050-00271
License No.: DPR-28

Enclosure: Request for Additional Information

cc: Listserv

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DATE	3/22/16	3/22/16	3/22/16	3/22/16

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**REQUEST FOR ADDITIONAL INFORMATION
RELATED TO 10 CFR 20.2002 ALTERNATE WASTE DISPOSAL REQUEST
FOR VERMONT YANKEE NUCLEAR POWER STATION (CAC NO. L53116)**

Additional Information Required:

1. **Comment:** More information is needed on the inputs to the USEI Site-Specific Data Assessment (SSDA) workbook.

Basis: It is not clear what inputs and changes were made to the SSDA workbook other than those listed in Attachment 2 on the data input worksheet. For example, the number of trips for the long-haul direct truck drivers on the dose summary sheet appears to have been manually input instead of being calculated from the volume of the waste. This edit appears to be reasonable since the volume of water transported is less than the volume of waste ultimately disposed of. The NRC staff would like to understand if other edits were also made to the spreadsheet because the NRC staff would need to review any changes to the spreadsheet from the version the NRC previously reviewed.

Path forward: Provide a description of all inputs and changes made to the SSDA workbook other than those listed in Attachment 2 on the data input worksheet and the basis for those changes.

2. **Comment:** The potential doses to the excavator operator and the back-end truck drivers were not provided.

Basis: The description of the USEI Worker Dose Assessment in Section 4.2 states that the excavator operator removes the treated waste from the stabilization tank and places it into an on-site haul truck for transport to the disposal cell for burial. However, doses to the excavator operator and back-end truck drivers were not calculated by the SSDA workbook.

Path forward: Provide an evaluation of the doses to the excavator operator and the back-end truck drivers.

3. **Comment:** Clarification is needed on the internal dose to the landfill cell operators.

Basis: The description of the USEI Worker Dose Assessment in Section 4.2 states that the internal dose to personnel working in the disposal cells is estimated to be the bounding dose calculated for a stabilization operator. However, the internal dose to the landfill cell operators in Table 2 is not the same as the stabilization operator dose.

Path forward: Clarify the method used to calculate the internal dose to the landfill cell operators.

Enclosure

4. **Comment:** Additional information is needed on the time the truck drivers spend in the truck.

Basis: It is not clear if the truck drivers spend any other time in truck other than while driving, such as sleeping or taking breaks in the truck. It is unlikely that the driver would complete the 46.4 hour trip without stopping.

Path forward: Clarify whether the truck drivers spend any time in the truck other than while driving. If the total time spent in the truck exceeds the 46.4 hours included in the dose calculation, provide an estimate of the potential dose to the truck driver from the total time spent in the truck.

5. **Comment:** The basis for the assumed tritium concentration is unclear.

Basis: The analytical results for tritium have a qualifier that the value was estimated. The data exception report also notes that the sample container was preserved with nitric acid, which could cause the sample results to bias low.

Path forward: Provide a description of the method used to estimate the tritium concentration.

6. **Comment:** More information is needed on the characterization of the water and the uncertainty in the concentration of the radionuclides in the water.

Basis: The concentrations of the radionuclides in the water were based on data from a single sample. It is not clear if any other samples have been taken and, if so, what the range of concentrations observed was. Because the potential dose was estimated based only on one sample, the uncertainty in the concentrations, and therefore dose, may not have been adequately captured. Additionally, as noted in the previous comment, the reported concentration of tritium in the sample might not be representative of the actual tritium concentration.

Path forward: Provide information on any other samples taken of the water, including the range of concentrations observed for each of the radionuclides. Also, provide an assessment of the potential uncertainty in the concentrations, and therefore dose, as a result of basing the concentration on a single sample.