

From: [Silko, Tom](#)
To: [Parrott, Jack](#)
Subject: [External_Sender] VY Alternate Disposal Request - Rail Shipments
Date: Thursday, June 20, 2019 12:37:51 PM
Attachments: [USEI SSSA Workbook Master R3 VYWater-V2_050919_200k-Rail.pdf](#)

Jack,

On May 22, 2019, during a telecom between:

- Jack Parrott, Senior Project Manager, NRC and other members of the NRC Staff;
- Tom Silko, Licensing Manager, NorthStar Vermont Yankee and other members of the NorthStar Vermont Yankee staff; and
- Joe Weismann, Vice president, Government and Radiological Affairs, US Ecology Idaho (USEI) –

A discussion was held in which an improved method for transporting waste water has been identified and made available. This improvement involves shipping via rail rather than via road (tanker trucks) as originally detailed in an Alternate Disposal Request previously approved by the NRC on June 20TH, 2017. The improved method entails shipping the water from the Vermont Yankee (VY) facility to the USEI rail transfer facility located in Mayfield, Idaho. Following receipt of the water at the USEI rail transfer facility, the water would be transferred into tanker trucks for the final ~35 mile drive to the USEI disposal facility (referred to as 'Back-End Dray'). The Back-End Dray utilizes a standard tanker truck as described in VY's existing safety assessment. Furthermore, processing of the water at the disposal facility remains unchanged from the original request.

During the call, it was discussed and confirmed that via the use of USEI's NRC approved Site Specific Dose Assessment (SSDA) that the transportation of the waste water via rail would result in a substantial dose savings. With the assistance of USEI, a revised dose assessment for transportation of the existing 200,000 gallons by rail has been completed and is attached. During the call, it was determined that following confirmation by the NRC Staff of the dose assessment for the revised method of transportation, NorthStar Vermont Yankee would be approved to transport the material via rail under the existing Alternate Disposal Request.

This email also confirms that the following commitments as documented in the SER are not being revised or modified in any way:

- The amount or quantity of water to be transported (200,000 gallons) remains unchanged. Additionally,
- NorthStar VY continues to commit "to performing a representative sample prior to each shipment of water and confirming that the radionuclide concentrations result in doses that are equal to or less than the doses delineated within the Summary of Project Alternative Disposal Dose Results in the RAI responses submitted on June 28, 2016. This confirmation could be performed by verifying that the radionuclide concentrations are equal to or less than the concentrations assumed in the analysis submitted on June 28, 2016 (i.e., the concentrations in Table 1). Alternatively, the confirmation could be performed by inputting the sample radionuclide concentrations

into the Site Specific Dose Assessment Methodology (SSDA) used in the June 28, 2016 submittal and verifying that the dose consequences are equal to or less than the doses delineated within the Summary of Project Alternative Disposal Dose Results included in the RAI responses submitted on June 28, 2016.”

- NorthStar VY continues to commit that “These dose assessment calculations would be documented and maintained on site under the records retention requirements of 10 CFR 20.2108 and be available for inspection by NRC.”
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- This revised method of transporting the water from VY to the USEI location does not negatively impact the evaluations or assumptions performed for the USEI facility since the radionuclide concentrations for the water to be disposed are equal to or less than the concentrations used as the basis for concluding that the projected annual dose for the USEI workers was much less than 1mrem/yr for each of the job functions evaluated in Table 3 of the SER.
- Since the method of transporting the water to the disposal facility follows acceptable means and results in less dose to the public, and since the disposal of the water including the processing, handling and location remain unchanged, the subject means of transporting the water to USEI does not affect the NRC’s Finding of No Significant Impact as documented in 82 FR 16239.

For background and reference:

On June 20, 2017, the U.S. Nuclear Regulatory Commission (NRC) provided approval to Vermont Yankee Nuclear Power Station (VY) for alternate disposal of low-activity radioactive waste water containing byproduct material from the VY Station (Reference ADAMS Accession No. ML17087A147). In a concurrent action the NRC approved on June 20, 2017, the granting of an exemption to US Ecology Idaho (USEI) from the licensing requirements of section 30.3 of title 10 of the *Code of Federal Regulations* (10 CFR), to allow USEI to receive and possess the byproduct radioactive materials from VY without an NRC license (Reference ADAMS Accession No. ML17082A310).

The alternate disposal request involved approximately 200,000 gallons of waste water. The water is associated with the decommissioning of VY and contains low concentrations of fission and activation products.

The NRC determined in the Safety Evaluation that both VY and USEI:

“provided an adequate description of the waste to be disposed of and the proposed manner and conditions of waste disposal. ENO further committed to performing a representative sample prior to each shipment of water and confirming that the radionuclide concentrations result in doses that are equal to or less than the doses delineated within the Summary of Project Alternative Disposal Dose Results in the RAI responses submitted on June 28, 2016.

The NRC staff concludes that the use of the SSDA [Site Specific Dose Assessment] methodology to evaluate the projected dose from the disposal of the waste included in this request is acceptable. The NRC staff reviewed the input parameters included

in this modeling and found that they are appropriate for the scenarios considered. The NRC staff has evaluated the potential doses associated with transportation, waste handling and disposal as a part of the review of this 10 CFR 20.2002 request. As described above, NRC staff found that the projected doses to individual transportation and USEI workers have been appropriately estimated and are demonstrated to meet the NRC's alternate disposal requirement of contributing a dose of not more than "a few millirem per year" to any member of the public and are ALARA."

The dose evaluation for the subject 10 CFR 20.2002 request and corresponding 10 CFR 30.3 exemption was performed using USEI's SSDA. The SSDA was previously reviewed and was approved by the NRC on August 24, 2015 (ADAMS Accession Nos. ML15125A364 and ML15125A466). In the review of the SSDA, the NRC staff concluded that the use of USEI's SSDA methodology was an appropriate method for evaluating future proposed disposals of waste at USEI.

NorthStar VY looks forward to the confirmatory review by the Staff, utilizing the NRC approved USEI SSDA, that the revised method of transportation remains within the scope of the approved Alternate Disposal and offers an ALARA alternative to that originally described.

NorthStar VY as well as the members of the USEI staff remains available for any further discussions should they be warranted.

Thank you for the NRC Staffs time on this matter.

Thomas B. Silko

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