

SUNSI Review Complete  
Template = ADM-013  
E-RIDS=ADM-03  
ADD= Lloyd Desotell,

**As of:** 1/31/19 2:18 PM  
**Received:** January 31, 2019  
**Status:** Pending\_Post  
**Tracking No.** 1k3-97zr-r75v  
**Comments Due:** January 31, 2019  
**Submission Type:** Web

# PUBLIC SUBMISSION

COMMENT (3)  
**PUBLICATION DATE:**  
12/21/2018  
**CITATION #** 83 FR 65759

**Docket:** NRC-2018-0155

Instructions for Completing NRC's Uniform Low-Level Radioactive Waste Manifest

**Comment On:** NRC-2018-0155-0003

Instructions for Completing NRC's Uniform Low-Level Radioactive Waste Manifest

**Document:** NRC-2018-0155-DRAFT-0005

Comment on FR Doc # 2018-27630

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## Submitter Information

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## General Comment

Please see uploaded file letter

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## Attachments

NUREG BR0204 Rev 3 comments

January 31, 2019

Ms. May Ma  
Office of Administration  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Subject:** Industry Comments on Draft Revision 3 NUREG/BR-0204, "Instructions for Completing NRC's Uniform Low Level Radioactive Waste Manifest" [83FR54620; Docket ID NRC-2018-0155]

**Reference No: 689**

Dear Ms. Ma:

Below are my comments on Draft Revision 3 of NUREG/BR-0204, "Instructions for Completing NRC's Uniform Low Level Radioactive Waste Manifest issued in the Federal Register on October 30, 2018 for comment by December 31, 2018.

**General Comments:**

**1. Certification Statement**

Thank you for revising the Certification Statement in Block 10 of the 540 Form. The current statement requires shippers to certify the material sent to waste processors is properly packaged and classified for disposal. This not the case because the materials are not shipped in their final disposal container and the final waste disposal volume is unknown. Forcing shippers to sign the current certification statement has put them at risk for a false material statement. Revising certification statement to correct this problem is appreciated and aligns the guidance in this NUREG to match the manifesting requirements in Part 20.

**2. Guidance on the use of Lower Limit of Detection (LLD) values**

Recommend the following changes to the guidance on pages 10-11, block 1 "Manifest Totals" on Form 541 as noted by *italics* below:

"In 10 CFR Part 20, Appendix G (I)(B)(4), NRC requires the reporting of the total radionuclide activity in the shipment. The reported total radionuclide activity should represent the best estimate of the total activity and should consider the activity based on lower limit of detection (LLD) values or indirect methods, as applicable. In 10 CFR Part 20, Appendix G (I)(B)(5), the NRC requires separate manifest totals for tritium (H-3), carbon-14 (C-14), technetium (Tc-99), iodine-129 (I-129), U-233, U-235, and Pu, as well as U and thorium (Th) in source material. For H-3, C-14, Tc-99, and I-129, enter the totals in megabecquerels (MBq) in the appropriate boxes. If the radionuclides are known to be absent based on process knowledge or lab analysis, place a "NP" (Not Present) in the appropriate space. If the radionuclides are present in the waste in detectable quantities, report the total activity based on the measured activity. If the radionuclides could be present in the waste, and the measure activity is less than the LLD in any portion of the shipment, the shipper can used indirect methods to determine the activity to report. Indirect methods can be used to determine the activity of the radionuclides present at less than the LLD values if there is reasonable assurance that the indirect method can be correlated with actual measurements. Regulatory Issue Summary 2015-02, "Reporting of H-3, C-14, Tc-99, and I-129 on the Uniform Waste Manifest," dated February 18, 2015, provides more information on the use of indirect methods to report the activity of H-3, C-14, Tc-99, and I-129. Alternatively the shipper can enter on the manifest in parenthesis the activity for H-3 or C-14 based on the laboratory reported value below the MDA and the amount of waste."

### 3. Bulk Shipment Manifests

Current industry practice for shipments of low-level waste (LLW) to Bulk disposal facilities is to manifest bulk shipping volumes as disposal volumes on the 541 form. Manifesting a bulk shipping volume for compactible waste as a disposal volume greatly over estimates the true disposal volume. The inaccurate disposal volumes auto-populate the U.S. Department of Energy's National Manifest Information Management System (MIMS). Suggest that revising the manifest guidance for such bulk shipments exempt the shipper from reporting the volume on the 541 Form. In these cases the disposal site should input accurate disposal volumes in MIMS. It is highly desirable and technically feasible to improve the accuracy of MIMS, provide transparency and prolong actual LLW disposal site capacity.

#### Edits to Forms 540, 541 and 542: NRC Form 540

1. **Page 9, block 17.** Current practice is to enter only the shipping package weight and not the volume. For shipments to Bulk facilities the volume needs to be entered in addition to the weight so the receiving facility can verify the quantity received to prove nothing was lost in transport. Therefore, please add the following sentence: *"When shipping to a bulk disposal facility, the shipping container volume AND the weight shall be entered."*

#### NRC Form 541

1. **Page 10, paragraph 3:** Note that Form 541 is for disposal. The disposal volume of bulk waste may not be known at the time of shipment (e.g. compactible trash). Bulk waste is compacted during the disposal process. The bulk shipping volume is noted on Form 540. There is no disposal container. Therefore, the following changes are needed.
  - Add *"bulk"* after uncontainerized.
  - Change *"Items 5, 6, 11 and 13 are not applicable"* to *"Blocks 5, 7, 11 and 13 are not applicable; enter NA for the volume in Blocks 1 and 7 for compactable bulk waste. If known, report the post disposal displacement volume of the waste in Blocks 1 and 7,"*
  - Add *"Enter 11- Bulk Unpackaged Waste in Block 6 for container description"*
2. **Page 11, paragraph 1, line 4:** Actual measurements for Tc-99 and I-129 are not available from commercial radiological laboratories. Any reported LLD value would grossly overestimate the trace quantities of these nuclides. Only certain DOE R&D facilities can identify these nuclides in LLW and those results have been used to derive industry scaling factors. Therefore, we suggest that line 4 be changed to read: *"The shipper can report the activity of H-3 and/or C-14 based on the LLD value and the amount of waste. The use of scaling factors or the use of activation, migration and partitioning calculations may be used for Tc-99 and I-129."*
3. **Page 12, paragraph 2, line 6:** Please reference the *"2015 Branch Technical Position on Concentration Averaging and Encapsulation."* The same comment applies to page 15, footnote 6.
4. **Page 17, block 17, line 6:** Add *"and should enter NA in this block."*
5. **Page 18, block 5:** Insert a new second sentence to read: *"This should be the facility where the radioactivity originated."*

**NRC Form 542:**

1. **Page 19, block 10:** Insert a new sentence to read: *"In addition, Compact Export Permit numbers, if applicable, shall be noted in this block."*

**Page 19, block 11:** Reword "As Processed/Collected Total" to "*Post Processed/Collected Total*". Also, add- "*For bulk waste shipments, the processor should enter the post disposal displacement volume achieved by the disposal facility for that waste type if known.*" These changes will provide a more accurate disposal volume to the national MIMS data base.

Cordially,

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