

4731.2950 LOW-LEVEL RADIOACTIVE WASTE; TRANSFER AND DISPOSAL.**Subpart 1. Definitions.**

- A. The terms used in this part have the meanings given in this subpart and part 4731.0100.
- B. "Chemical description" means a description of the principal chemical characteristics of a low-level radioactive waste.
- C. "Computer-readable medium" means that the regulatory agency's computer can transfer the information from the medium into its memory.
- D. "Consignee" means the designated receiver of the shipment of low-level radioactive waste.
- E. "Decontamination facility" means a facility, operating under a license issued by the commissioner, the NRC, or an agreement state, whose principal purpose is decontamination of equipment or materials to accomplish recycle, reuse, or other waste management objectives, and which, for purposes of this part, is not considered to be a consignee for low-level radioactive waste shipments.
- F. "Disposal container" means a container principally used to confine low-level radioactive waste during disposal operations at a land disposal facility. For some shipments, the disposal container may be the transport package.
- G. "EPA identification number" means the number received by a transporter following application to the administrator of the Environmental Protection Agency as required under Code of Federal Regulations, title 40, part 263.
- H. "Generator" means a licensee, operating under a license issued by the commissioner, the NRC, or an agreement state, that:
- (1) is a waste generator; or
 - (2) is the licensee to whom waste, such as waste generated as a result of decontamination or recycle activities, can be attributed within the context of the Low-Level Radioactive Waste Policy Amendments Act of 1985, Public Law 99-240.
- I. "NRC Form 540," "NRC Form 540A," "NRC Form 541," "NRC Form 541A," "NRC Form 542," and "NRC Form 542A" are official NRC forms referenced in this part. Licensees need not use originals of the NRC forms as long as any substitute forms are equivalent to the original documentation in respect to content, clarity, size, and location of information. Upon agreement between the shipper and consignee, NRC Forms 541, 541A, 542, and 542A may be completed, transmitted, and stored in electronic media. The electronic media must have the capability for producing legible, accurate, and complete records in the format of the uniform manifest.
- J. "Package" means the assembly of components necessary to ensure compliance with the packaging requirements of DOT regulations, together with its radioactive contents, as presented for transport.

K. "Physical description" means the items called for on NRC Form 541 to describe a low-level radioactive waste.

L. "Residual waste" means low-level radioactive waste resulting from processing or decontamination activities that cannot be easily separated into distinct batches attributable to specific waste generators. Residual waste is attributable to the waste processor or decontamination facility, as applicable.

M. "Shipper" means the licensed waste generator, waste collector, or waste processor that offers low-level radioactive waste for transportation, typically consigning this type of waste to a licensed waste collector, waste processor, or land disposal facility operator.

N. "Shipping paper" means NRC Form 540 and, if required, NRC Form 540A, which includes the information required under Code of Federal Regulations, title 49, part 172.

O. "Uniform low-level radioactive waste manifest" or "uniform manifest" means the combination of NRC Forms 540, 541, and, if necessary, 542, and their respective continuation sheets as needed, or equivalent.

P. "Waste collector" means an entity, operating under a license issued by the commissioner, the NRC, or an agreement state, whose principal purpose is to collect and consolidate waste generated by others and to transfer the waste, without processing or repackaging the collected waste, to another licensed waste collector, licensed waste processor, or licensed land disposal facility.

Q. "Waste description" means the physical, chemical, and radiological description of a low-level radioactive waste as called for on NRC Form 541.

R. "Waste generator" means an entity, operating under a license issued by the commissioner, the NRC, or an agreement state, that:

(1) possesses any material or component that contains radioactivity or is radioactively contaminated for which the licensee foresees no further use; and

(2) transfers the material or component to a licensed land disposal facility or to a licensed waste collector or waste processor for handling or treatment prior to disposal.

A licensee performing processing or decontamination services may be a waste generator if the transfer of low-level radioactive waste from its facility is defined as residual waste.

S. "Waste processor" means an entity, operating under a license issued by the commissioner, the NRC, or an agreement state, whose principal purpose is to process, repackage, or otherwise treat low-level radioactive material or waste generated by others before eventual transfer of the waste to a licensed low-level radioactive waste land disposal facility.

T. "Waste type" means a waste within a disposal container having a unique physical description, such as a specific waste descriptor code or description or a waste sorbed on or solidified in a specifically defined media.

Subp. 2. **Manifest.**

A. A waste generator, waste collector, or waste processor that transports, or offers for transportation, low-level radioactive waste intended for ultimate disposal at a licensed low-level radioactive waste land disposal facility must prepare a manifest reflecting information requested on applicable NRC Forms 540 (Uniform Low-Level Radioactive Waste Manifest (Shipping Paper)) and 541 (Uniform Low-Level Radioactive Waste Manifest (Container and Waste Description)) and, if necessary, on an applicable NRC Form 542 (Uniform Low-Level Radioactive Waste Manifest (Manifest Index and Regional Compact Tabulation)).

B. NRC Forms 540 and 540A must be completed and must physically accompany the pertinent low-level waste shipment.

C. Upon agreement between shipper and consignee, NRC Forms 541, 541A, 542, and 542A may be completed, transmitted, and stored in electronic media with the capability for producing legible, accurate, and complete records on the respective forms.

D. Licensees are not required by the commissioner, the NRC, or an agreement state to comply with the manifesting requirements of this subpart when they ship:

(1) low-level radioactive waste for processing and expect its return, such as for storage under their license, prior to disposal at a licensed land disposal facility;

(2) low-level radioactive waste that is being returned to the licensee that is the waste generator or generator; or

(3) radioactively contaminated material to a waste processor that becomes the processor's residual waste.

E. For guidance in completing the forms required under item A, refer to the instructions that accompany the forms. Copies of manifests required by this subpart may be legible carbon copies, photocopies, or computer printouts that reproduce the data in the format of the uniform manifest.

F. NRC Forms 540, 540A, 541, 541A, 542, and 542A, and the accompanying instructions, in hard copy, may be obtained from the Information and Records Management Branch, Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 415-7232. The forms are available online at <http://www.nrc.gov/reading-rm/doc-collections/forms>.

Subp. 3. **Other federal law.** This part includes information requirements of the DOT, as codified in Code of Federal Regulations, title 49, part 172. Information on hazardous, medical, or other waste, required to meet Environmental Protection Agency (EPA) regulations, as codified in Code of Federal Regulations, title 40, part 261 or elsewhere, is not addressed in this part and must be provided on the required EPA forms. However, the required EPA forms must accompany the uniform low-level radioactive waste manifest required by this part.

Subp. 4. **General information.** The shipper of the radioactive waste must provide the following information on the uniform manifest:

- A. the name, facility address, and telephone number of the licensee shipping the waste;
- B. an explicit declaration indicating whether the shipper is acting as a waste generator, waste collector, waste processor, or a combination of these identifiers for purposes of the manifested shipment; and
- C. the name, address, and telephone number, or the name and EPA identification number for the carrier transporting the waste.

Subp. 5. **Shipment information.** The shipper of the radioactive waste must provide the following information regarding the waste shipment on the uniform manifest:

- A. the date of the waste shipment;
- B. the total number of packages or disposal containers;
- C. the total disposal volume and disposal weight in the shipment;
- D. the total radionuclide activity in the shipment;
- E. the activity of each of the radionuclides H-3, C-14, Tc-99, and I-129 contained in the shipment; and
- F. the total masses of U-233, U-235, and plutonium in special nuclear material and the total mass of uranium and thorium in source material.

Subp. 6. **Disposal container and waste information.** The shipper of the radioactive waste must provide the following information on the uniform manifest regarding the waste and each disposal container of waste in the shipment:

- A. an alphabetic or numeric identification that uniquely identifies each disposal container in the shipment;
- B. a physical description of the disposal container, including the manufacturer and model of any high integrity container;
- C. the volume displaced by the disposal container;
- D. the gross weight of the disposal container, including the waste;
- E. for waste consigned to a disposal facility, the maximum radiation level at the surface of each disposal container;
- F. a physical and chemical description of the waste;
- G. the total weight percentage of chelating agent for any waste containing more than 0.1 percent chelating agent by weight, plus the identity of the principal chelating agent;
- H. the approximate volume of waste within a container;

I. the sorbing or solidification media, if any, and the identity of the solidification media vendor and brand name;

J. the identities and activities of individual radionuclides contained in each container, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material. For discrete waste types, such as activated materials, contaminated equipment, mechanical filters, sealed source or devices, and wastes in solidification or stabilization media, the identities and activities of individual radionuclides associated with or contained on these waste types within a disposal container must be reported; and

K. the total radioactivity within each container.

Subp. 7. Uncontainerized waste information. The shipper of the radioactive waste must provide the following information on the uniform manifest regarding a waste shipment delivered without a disposal container:

A. the approximate volume and weight of the waste;

B. a physical and chemical description of the waste;

C. the total weight percentage of chelating agent if the chelating agent exceeds 0.1 percent by weight, plus the identity of the principal chelating agent;

D. for waste consigned to a disposal facility, the classification of the waste according to Code of Federal Regulations, title 10, section 61.55. Waste not meeting the structural stability requirements of Code of Federal Regulations, title 10, section 61.56, paragraph (b), must be identified;

E. the identities and activities of individual radionuclides contained in the waste, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material; and

F. for wastes consigned to a disposal facility, the maximum radiation levels at the surface of the waste.

Subp. 8. Multigenerator disposal container information.

A. This subpart applies to disposal containers enclosing mixtures of waste originating from different generators. The origin of the low-level radioactive waste resulting from a waste processor's activities may be attributable to one or more generators, including waste generators. This subpart also applies to mixtures of wastes shipped in an uncontainerized form, for which portions of the mixture within the shipment originate from different generators.

B. For homogeneous mixtures of waste, such as incinerator ash, the shipper must provide the waste description applicable to the mixture and the volume of the waste attributed to each generator.

C. For heterogeneous mixtures of waste, such as the combined products from a large compactor, the shipper must identify each generator contributing waste to the disposal container

and for discrete waste types, such as activated materials, contaminated equipment, mechanical filters, sealed source or devices, and wastes in solidification or stabilization media, the identities and activities of individual radionuclides contained on these waste types within the disposal container. For each generator, the shipper must provide the following:

- (1) the volume of waste within the disposal container;
- (2) a physical and chemical description of the waste, including the solidification agent, if any;
- (3) the total weight percentage of chelating agents for any disposal container containing more than 0.1 percent chelating agent by weight, plus the identity of the principal chelating agent;
- (4) the sorbing or solidification media, if any, and the identity of the solidification media vendor and brand name if the media is claimed to meet stability requirements under Code of Federal Regulations, title 10, section 61.56, paragraph (b); and
- (5) radionuclide identities and activities contained in the waste, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material, if contained in the waste.

Subp. 9. **Certification.** An authorized representative of the waste generator, waste processor, or waste collector must certify by signing and dating the shipment manifest that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the DOT and the NRC, the commissioner, or an agreement state. A waste collector, in signing the certification, is certifying that nothing has been done to the collected waste that would invalidate the waste generator's certification.

Subp. 10. **Control and tracking; transfers.** A licensee that transfers radioactive waste to a land disposal facility or a licensed waste collector must comply with this subpart. A licensee that transfers waste to a licensed waste processor for waste treatment or repackaging must comply with items D to I. A licensee must:

A. prepare all wastes so that the waste is classified according to Code of Federal Regulations, title 10, section 61.55, and meets the waste characteristics requirements under Code of Federal Regulations, title 10, section 61.56;

B. label each disposal container of waste, or transport package if potential radiation hazards preclude labeling of the individual disposal container, to identify whether it is Class A waste, Class B waste, Class C waste, or greater than Class C waste, according to Code of Federal Regulations, title 10, section 61.55;

C. conduct a quality assurance program to ensure compliance with Code of Federal Regulations, title 10, sections 61.55 and 61.56. The program must include management evaluation of audits;

D. prepare the uniform low-level radioactive waste manifest as required by this part;

E. forward a copy or electronically transfer the uniform low-level radioactive waste manifest to the intended consignee so that receipt of the manifest precedes the low-level radioactive waste shipment or the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or both;

F. include NRC Form 540, and Form 540A if required, with the shipment regardless of the option chosen in item E;

G. receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540;

H. retain a copy of or electronically store the uniform low-level radioactive waste manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required under parts 4731.0525 to 4731.0840 and 4731.3000 to 4731.3175; and

I. for any shipment or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this part, conduct an investigation according to subpart 14.

Subp. 11. Control and tracking; prepackaged waste. A waste collector licensee that handles only prepackaged waste must:

A. acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of NRC Form 540;

B. prepare a new manifest to reflect consolidated shipments that meet the requirements of this part. The waste collector must ensure that, for each container of waste in the shipment, the manifest identifies the generator of that container of waste;

C. forward a copy or electronically transfer the uniform low-level radioactive waste manifest to the intended consignee so that receipt of the manifest precedes the low-level radioactive waste shipment or the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or both;

D. include NRC Form 540, and 540A if required, with the shipment regardless of the option chosen in item C;

E. receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540;

F. retain a copy of or electronically store the uniform low-level radioactive waste manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required under parts 4731.0525 to 4731.0840 and 4731.3000 to 4731.3120;

G. for any shipment or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this part, conduct an investigation according to subpart 14; and

H. notify the shipper and the commissioner, the administrator of the nearest NRC regional office, or an agreement state licensing agency when any shipment, or part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

Subp. 12. **Control and tracking; treatment or repackaging.** A licensed waste processor that treats or repackages waste must:

A. acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of NRC Form 540;

B. prepare a new manifest that meets the requirements of this part. Preparation of the new manifest reflects that the waste processor is responsible for meeting these requirements. For each container of waste in the shipment, the manifest must identify the waste generators, the preprocessed waste volume, and the other information as required under subpart 8;

C. prepare all wastes so that the waste is classified according to Code of Federal Regulations, title 10, section 61.55, and meets the waste characteristics requirements under Code of Federal Regulations, title 10, section 61.56;

D. label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, according to Code of Federal Regulations, title 10, sections 61.55 and 61.57;

E. conduct a quality assurance program to ensure compliance with Code of Federal Regulations, title 10, sections 61.55 and 61.56. The program must include management evaluation of audits;

F. forward a copy or electronically transfer the uniform low-level radioactive waste manifest to the intended consignee so that receipt of the manifest precedes the low-level radioactive waste shipment or the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or both;

G. include NRC Form 540, and Form 540A if required, with the shipment regardless of the option chosen in item F;

H. receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540;

I. retain a copy of or electronically store the uniform low-level radioactive waste manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required under parts 4731.0525 to 4731.0840 and 4731.3000 to 4731.3120;

J. for any shipment or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this part, conduct an investigation according to subpart 14; and

K. notify the shipper and the commissioner, the administrator of the nearest NRC regional office, or an agreement state licensing agency when any shipment, or part of a shipment, has not

arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

Subp. 13. **Control and tracking; land disposal facility.** A land disposal facility operator must:

A. acknowledge receipt of the waste within one week of receipt by returning, as a minimum, a signed copy of NRC Form 540 to the shipper. The shipper to be notified is the licensee that last possessed the waste and transferred the waste to the operator. If any discrepancy exists between materials listed on the uniform low-level radioactive waste manifest and materials received, copies or electronic transfer of the affected forms must be returned indicating the discrepancy;

B. maintain copies of all completed manifests and electronically store the information required under Code of Federal Regulations, title 10, section 61.80, paragraph (l), until the commissioner or the NRC terminates the license; and

C. notify the shipper and the commissioner, the administrator of the nearest NRC regional office, or an agreement state licensing agency when any shipment, or part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

Subp. 14. **Investigation.** A shipment or part of a shipment for which acknowledgment is not received within the times set forth in this part must:

A. be investigated by the shipper if the shipper has not received notification or receipt within 20 days after transfer; and

B. be traced and reported. The investigation must include tracing the shipment and filing a report with the commissioner, the administrator of the nearest NRC regional office, or an agreement state licensing agency. A licensee that conducts a trace investigation must file a written report with the commissioner within two weeks of completing the investigation.

Statutory Authority: *MS s 144.1202; 144.1203*

History: *29 SR 755; 44 SR 239*

Published Electronically: *September 13, 2019*