

STATE OF FLORIDA
BUREAU OF RADIATION CONTROL

**REQUIREMENTS FOR TRANSFERS OF
LOW-LEVEL RADIOACTIVE WASTE INTENDED
FOR DISPOSAL AT LICENSED LAND DISPOSAL
FACILITIES AND MANIFEST**

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REQUIREMENTS FOR TRANSFERS OF LOW-LEVEL RADIOACTIVE WASTE INTENDED FOR DISPOSAL AT LICENSED LAND DISPOSAL FACILITIES AND MANIFEST

I. Manifest

A waste generator, collector, or processor who transports or offers for transportation low-level radioactive waste intended for ultimate disposal at a licensed low-level radioactive waste land disposal facility shall prepare a manifest reflecting information requested on applicable NRC Form 540 (3-95), Uniform Low-Level Radioactive Waste Manifest - Shipping Paper and NRC Form 541 (11-96), Uniform Low-Level Radioactive Waste Manifest - Container and Waste Description and, if necessary, NRC Form 542 (3-95), Uniform Low-Level Radioactive Waste Manifest - Manifest Index and Regional Compact Tabulation, which are herein incorporated by reference and which are available from the department. NRC Form 540 (3-95) and NRC Form 540A (3-95) shall be completed and physically shall accompany the pertinent low-level waste shipment. Upon agreement between shipper and consignee, NRC Form 541 (11-96) and NRC Form 541A (3-95) and NRC Form 542 (3-95) and NRC Form 542A (3-95) can be completed, transmitted, and stored in electronic media able to produce legible, accurate, and complete records on the respective forms. Licensees are not required to comply with the manifesting requirements of this part when they ship:

- LLW for processing and expect its return for storage under their license before disposal at a licensed land disposal facility;
- LLW that is being returned to the licensee who is the waste generator or generator as defined in this part; or
- Radioactively contaminated material to a waste processor that becomes the processor's residual waste.

For guidance in completing these forms, refer to the instructions that accompany the forms. Copies of manifests required by this appendix can be legible carbon copies, photocopies, or computer printouts that reproduce the data in the format of the uniform manifest.

NRC Form 540 (3-95), NRC Form 540A (3-95), NRC Form 541 (11-96), NRC Form 541A (3-95), NRC Form 542 (3-95), and NRC Form 542A (3-95), and the accompanying instructions in hard copy can be obtained from the department.

This appendix includes information requirements of the Department of Transportation, as codified in 49 CFR Part 172. Information on hazardous, medical, or other waste required to meet Environmental Protection Agency regulations as codified in 40 CFR Parts 259, 261 or elsewhere is not addressed in this section and shall be provided on the required EPA forms. However, the required EPA forms shall accompany the Uniform Low-Level Radioactive Waste Manifest required by this rule.

As used in this appendix, the following definitions apply:

Chelating agent means amine polycarboxylic acids such as EDTA and DTPA, hydroxycarboxylic acids, and polycarboxylic acids such as citric acid, carboic acid, and glucinic acid.

Chemical description means a description of the principal chemical characteristics of a low-level radioactive waste.

Computer-readable medium means that the department's computer can transfer the information from the medium into its memory.

Consignee means the designated receiver of the shipment of low-level radioactive waste.

Decontamination facility means a facility operating under an NRC or Agreement State license whose principal purpose is decontamination of equipment or materials to accomplish recycle, reuse, or other waste management objectives, and, for purposes of this part, is not considered to be a consignee for LLW shipments.

Disposal container means a container principally used to confine low-level radioactive waste during disposal operations at a land disposal facility. (Also see "high integrity container".) Note that for some shipments the disposal container could be the transport package.

EPA identification number means the number received by a transporter following application to the Administrator of EPA as required by 40 CFR part 263.

Generator means a licensee operating under an NRC or Agreement State license who is a waste generator or is the licensee to whom waste can be attributed within the context of the Low-Level Radioactive Waste Policy Amendments Act of 1985, for example, waste generated as a result of decontamination or recycle activities.

High integrity container (HIC) means a container commonly designed to meet the structural stability requirements of 64E-5.333(9), F.A.C., and to meet Department of Transportation requirements for a Type A package.

Land disposal facility means the land, buildings and structures, and equipment which are intended to be used for the disposal of radioactive wastes. For the purposes of these regulations, a geologic repository as defined in 10 CFR Part 60 is not considered a land disposal facility.

NRC Form 540 (3-95), NRC Form 540A (3-95), NRC Form 541 (11-96), NRC Form 541A (3-95), NRC Form 542 (3-95), and NRC Form 542A (3-95) are official department forms referenced in this appendix. Licensees need not use originals of these department 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 Form 540 (3-95), NRC Form 540A (3-95), NRC Form 541 (11-96), and NRC Form 541A (3-95), can be completed, transmitted, and stored in electronic media. The electronic media shall be able to produce legible, accurate, and complete records in the format of the uniform manifest.

Package means the assembly of components necessary to ensure compliance with the packaging requirements of DOT regulations with its radioactive contents as presented for transport.

Physical description means the items called for on NRC Form 541 (11-96) to describe a low-level radioactive waste.

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

Shipper means the waste generator, waste collector, or waste processor who 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.

Shipping paper means NRC Form 540 (3-95) and, if required, NRC Form 540A (3-95), which includes the information required by DOT in 49 CFR part 172.

Source material has the same meaning as that given in 64E-5.101, F.A.C.

Special nuclear material has the same meaning as that given in 64E-5.101, F.A.C.

Uniform Low-Level Radioactive Waste Manifest or uniform manifest means the combination of NRC Form 540 (3-95), NRC Form 541 (11-96), and, if necessary, NRC Form 542 (3-95), and their respective continuation sheets as needed, or equivalent.

Waste collector means an entity operating under an NRC or Agreement State license whose principal purpose is to collect and consolidate waste generated by others and to transfer this waste without processing or repackaging the collected waste to another licensed waste collector, licensed waste processor, or licensed land disposal facility.

Waste description means the physical, chemical and radiological description of a low-level radioactive waste as called for on NRC Form 541 (11-96).

Waste generator means an entity operating under an NRC or Agreement State license who possesses any material or component that contains radioactivity or is radioactively contaminated for which the licensee foresees no further use and transfers this material or component to a licensed land disposal facility or to a licensed waste collector or processor for handling or treatment prior to disposal. A licensee performing processing or decontamination services can be a waste generator if the transfer of low-level radioactive waste from its facility is defined as residual waste.

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

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.

Information Requirements

A. General Information

The shipper of the radioactive waste shall provide the following information on the uniform manifest:

1. The name, facility address, and telephone number of the licensee shipping the waste;
2. An explicit declaration indicating whether the shipper is acting as a waste generator, collector, processor, or a combination of these identifiers for the manifested shipment; and
3. The name, address, and telephone number or the name and EPA identification number for the carrier transporting the waste.

B. Shipment Information

The shipper of the radioactive waste shall provide the following information regarding the waste shipment on the uniform manifest:

1. The date of the waste shipment;
2. The total number of packages and disposal containers;
3. The total disposal volume and disposal weight in the shipment;
4. The total radionuclide activity in the shipment;
5. The activity of each of the radionuclides H-3, C-14, Tc-99, and I-129 contained in the shipment; and
6. 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.

C. Disposal Container and Waste Information

The shipper of the radioactive waste shall provide the following information on the uniform manifest regarding the waste and each disposal container of waste in the shipment:

1. An alphabetic or numeric identification that uniquely identifies each disposal container in the shipment;
2. A physical description of the disposal container, including the manufacturer and model of high integrity container;
3. The volume displaced by the disposal container;
4. The gross weight of the disposal container, including the waste;
5. For waste consigned to a disposal facility, the maximum radiation level at the surface of each disposal container;
6. A physical and chemical description of the waste;
7. The total weight percentage of chelating agent for any waste containing more than 0.1% chelating agent by weight plus the identity of the principal chelating agent;
8. The approximate volume of waste within a container;
9. The sorbing or solidification media if any and the identity of the solidification media vendor and brand name;
10. 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 sources 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 shall be reported;

11. The total radioactivity within each container; and
12. For wastes consigned to a disposal facility, the classification of the waste pursuant to 64E-5.333(1)-(8), F.A.C. Waste not meeting the structural stability requirements of 64E-5.333(9)(b), F.A.C. shall be identified.

D. Uncontainerized Waste Information

The shipper of radioactive waste shall provide the following information on the uniform manifest regarding a waste shipment delivered without a disposal container:

1. The approximate volume and weight of the waste;
2. A physical and chemical description of the waste;
3. The total weight percentage of chelating agent if the chelating agent exceeds 0.1% by weight plus the identity of the principal chelating agent;
4. For waste consigned to a disposal facility, the classification of the waste pursuant to 64E-5.333(1)-(8), F.A.C. Waste not meeting the structural stability requirements of 64E-5.333(9)(b), F.A.C. shall be identified;
5. 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
6. For wastes consigned to a disposal facility, the maximum radiation levels at the surface of the waste.

E. Multi-Generator Disposal Container Information

This section applies to disposal containers enclosing mixtures of waste originating from different generators. The origin of the LLW resulting from a processor's activities can be attributable to one or more generators including "waste generators as defined in this part. It also applies to mixtures of wastes shipped in an uncontainerized form for which portions of the mixture within the shipment originate from different generators.

1. For homogeneous mixtures of waste, such as incinerator ash, provide the waste description applicable to the mixture and the volume of the waste attributed to each generator.
2. For heterogeneous mixtures of waste such as the combined products from a large compactor, 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, provide the following:
 - (a) The volume of waste within the disposal container;
 - (b) A physical and chemical description of the waste including the solidification agent, if any;
 - (c) The total weight percentage of chelating agents for any disposal container containing more than 0.1% chelating agent by weight plus the identity of the principal chelating agent;

(d) 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 in 64E-5.333(9)(b); and

(e) 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.

II. Certification

An authorized representative of the waste generator, processor, or collector shall certify by signing and dating the shipment manifest that the transported materials are classified, described, packaged, marked, and labeled properly and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the department. By signing the certification, a collector is certifying that nothing has been done to the collected waste that would invalidate the waste generator's certification.

III. Control and Tracking

A. Any licensee who transfers radioactive waste to a land disposal facility or a licensed waste collector shall comply with the requirements in paragraphs A.1 through 9 of this section. Any licensee who transfers waste to a licensed waste processor for waste treatment or repackaging shall comply with the requirements of paragraphs A.4 through 9 of this section. A licensee shall:

1. Prepare all wastes so that the waste is classified according to 64E-5.333(1)-(8), F.A.C. and meets the waste characteristics requirements in 64E-5.333(9), F.A.C.;
2. Label each disposal container or transport package if potential radiation hazards preclude labeling of the individual disposal container of waste to identify whether it is Class A waste, Class B waste, Class C waste, or greater than Class C waste, in accordance with 64E-5.333(1)-(8), F.A.C.;
3. Conduct a quality assurance program to assure compliance with 64E-5.333(1)-(8), F.A.C. and 64E-5.333(9), F.A.C. The program shall include management evaluation of audits;
4. Prepare the manifest as required by this appendix;
5. Forward a copy or electronically transfer the manifest to the intended consignee so that receipt of the manifest precedes the LLW shipment or the manifests delivered to the consignee with the waste at the time the waste is transferred to the consignee;
6. Include NRC Form 540 (3-95) and NRC Form 540A (3-95) if required with the shipment regardless of the option chosen in paragraph A.5 of this section;
7. Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 (3-95);
8. Retain a copy of or electronically store the manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required by 64E-5, F.A.C.; and
9. Conduct an investigation in accordance with paragraph E of this appendix for any shipments or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this appendix.

B. Any waste collector licensee who handles only prepackaged waste shall:

1. Acknowledge receipt of the waste from the shipper within 1 week of receipt by returning a signed copy of NRC Form 540 (3-95);
2. Prepare a new manifest to reflect consolidated shipments that meet the requirements of this appendix. The waste collector shall ensure that the manifest identifies the generator of that container of waste for each container of waste in the shipment;
3. Forward a copy or electronically transfer the manifest to the intended consignee so that either receipt of the manifest precedes the LLW shipment or the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee;
4. Include NRC Form 540 (3-95) and NRC Form 540A (3-95) if required with the shipment regardless of the option chosen in paragraph B.3 of this section;
5. Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 (3-95);
6. Retain a copy of or electronically store the manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required by 64E-5, F.A.C.;
7. Conduct an investigation for any shipments or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this appendix as specified in paragraph E of this appendix; and
8. Notify the shipper and the department 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.

C. Any licensed waste processor who treats or repackages waste shall:

1. Acknowledge receipt of the waste from the shipper within 1 week of receipt by returning a signed copy of NRC Form 540 (3-95);
2. Prepare a new manifest that meets the requirements of this appendix. Preparation of the new manifest reflects that the processor is responsible for meeting these requirements. The manifest shall identify the waste generators, the preprocessed waste volume, and the other information required in paragraph I.E. of this appendix for each container of waste in the shipment;
3. Prepare all wastes so that the waste is classified according to 64E-5.333(1)-(8), F.A.C., and meets the waste characteristics requirements in 64E-5.333(9), F.A.C.;
4. Label each package of waste to identify whether it is Class A waste, Class B waste or Class C waste as specified in 64E-5.333(1)-(8), F.A.C., and 64E-5.333(10), F.A.C.;
5. Conduct a quality assurance program to assure compliance with 64E-5.333(1)-(9), F.A.C. The program shall include management evaluation of audits;
6. Forward a copy or electronically transfer the manifest to the intended consignee so that either receipt of the manifest precedes the LLW shipment or the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee;
7. Include NRC Form 540 (3-95) and NRC Form 540A (3-95) if required with the shipment regardless of the option chosen in paragraph C.6 of this section;

8. Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 (3-95);

9. Retain a copy of or electronically store the manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required by 64E-5, F.A.C.;

10. Conduct an investigation in accordance with paragraph E of this appendix 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 appendix; and

11. Notify the shipper and the department 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.

D. The land disposal facility operator shall:

1. Acknowledge receipt of the waste within 1 week of receipt by returning as a minimum a signed copy of NRC Form 540 (3-95) to the shipper. The shipper to be notified is the licensee who last possessed the waste and transferred the waste to the operator. If any discrepancy exists between materials listed on the manifest and materials received, copies or electronic transfer of affected forms shall be returned indicating the discrepancy.

2. Maintain copies of all completed manifests and electronically store the information required by (a) and (b) below until the department terminates the license:

(a) All information required in this appendix except shipper and carrier telephone numbers and shipper and consignee certifications; and

(b) Following receipt and acceptance of a shipment of radioactive waste, the date that the shipment is received at the disposal facility, the date of disposal of the waste, a traceable shipment manifest number, a description of any engineered barrier or structural overpack provided for disposal of the waste, the location of disposal at the disposal site, the containment integrity of the waste disposal containers as received, any discrepancies between materials listed on the manifest and those received, the volume of any pallets, bracing, or other shipping or onsite generated materials that are contaminated and are disposed of as contaminated or suspect materials, any evidence of leaking or damaged disposal containers or radiation or contamination levels in excess of limits specified in DOT and department regulations, brief description of any repackaging operations of any of the disposal containers included in the shipment, and any other information required by the department as a license condition.

3. Notify the shipper and the department 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.

E. Any shipment or part of a shipment for which acknowledgment is not received within the times set forth in this section shall:

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

2. Be traced and reported. The investigation shall include tracing the shipment and filing a report with the department. Each licensee who conducts a trace investigation shall file a written report with the department within 2 weeks of completion of the investigation.