APPENDIX A

Requirements for transfer of radioactive waste for disposal at land disposal facilities and manifests

I. Manifest

A waste generator, collector, or processor who transports, or offers for transportation, radioactive waste intended for ultimate disposal at a licensed radioactive waste land disposal facility must prepare a Shipment Manifest. Licensees are not required to comply with the manifesting requirements of this part when they ship:

(A) Radioactive waste for processing and expect its return for storage under their license prior to disposal at a licensed land disposal facility;

(B) Radioactive waste that is being returned to the licensee who is the "waste generator" or "generator," as defined in this part; or

(C) 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 may be legible carbon copies, photocopies, or computer printouts that reproduce the data in the format of the shipment manifest.

This appendix includes information requirements of the United StatesDepartment of Transportation (DOT), as codified in 49 C.F.R. 172. Information on hazardous, medical, or other waste, required to meet United States Environmental Protection Agency (EPA) regulations, as codified in 40 C.F.R. Parts 259, 261 or elsewhere, is not addressed in this section, and must be provided on the required EPA forms. However, the required EPA forms must accompany the Radioactive Waste Shipment Manifest required by this rule.

As used in this appendix, the following definitions apply:

Chelating agent means amine polycarboxylic acids (including but not limited to EDTA and DTPA), hydroxy-carboxylic acids, and polycarboxylic acids (including but not limited to citric acid, carbolic acid, and glucinic acid).

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

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

Consignee means the designated receiver of the shipment of radioactive waste.

Decontamination facility means a facility operating under a United States Nuclear Regulatory Commission (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 radioactive waste shipments.

Disposal container means a container principally used to confine radioactive waste during disposal operations at a land disposal facility (also see "high integrity container"). Note that for some shipments, the disposal container may 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 C.F.R. 263.

Generator means a licensee operating under a nuclear regulatory commission or agreement state license who (1) is a waste generator as defined in this part, or (2) is the licensee to whom waste can be attributed to.

High integrity container (HIC) means a container commonly designed to meet the structural stability requirements of rule 3701:1-54-10 of the Administrative Code, and to meet DOT requirements for a Type A package.

Land disposal facility means the land, buildings and structures, and equipment that are intended to be used for the disposal of radioactive waste.

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.

Physical description means the items called for on Radioactive Waste Shipment Manifest form “Container and Waste Description” to describe the radioactive waste.

Radioactive Waste Shipment Manifest means forms consistent with NRC Forms 540 & 540A (Shipping Papers), 541 & 541A (Container and Waste Description), and 542 & 542A (Manifest Index and Regional Compact Tabulation). Licensees need not use originals of these 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, Shipment Manifest forms “Container and Waste Description” and “Manifest Index and Regional Compact Tabulation” 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 shipment manifest.

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

Shipment manifest - see Radioactive Waste Shipment Manifest

Shipper means the licensed entity including, but not limited to, the waste generator, waste collector, or waste processor, who offers 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 the Radioactive Waste Shipping Manifest form “Shipping Papers” which includes the information required by the DOT in 49 C.F.R. Part 172.

Source material has the same meaning as that given in rule 3701:1-38-01 of the Administrative Code.

Special nuclear material has the same meaning as that given in rule 3701:1-38-01 of the Administrative Code.

Waste collector means an entity, operating under a nuclear regulatory commission 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 radioactive waste as called for on Shipment Manifest form “Container and Waste Description”.

Waste generator means an entity, operating under a nuclear regulatory commission or agreement state license, who (1) possesses any material or component that contains radioactivity or is radioactively contaminated for which the licensee foresees no further use, and (2) 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 may be a "waste generator" if the transfer of radioactive waste from its facility is defined as "residual waste."

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

Waste type means a waste within a disposal container having a unique physical description (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 Shipment 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 purposes of 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 Shipment Manifest:

1. The date of the waste shipment;

2. The total number of packages/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 Shipment 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 any 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 (including but not limited to activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/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 rule 3701:1-54-10 of the Administrative Code. Waste not meeting the structural stability requirements of paragraph (B)(9) of rule 3701:1-54-10 of the Administrative Code must be identified.

D. Uncontainerized Waste information

The shipper of the radioactive waste shall provide the following information on the Shipment 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 rule 3701:1-54-10 of the Administrative Code. Waste not meeting the structural stability requirements of paragraph (B)(9) of rule 3701:1-54-10 of the Administrative Code must 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. (Note: The origin of the radioactive waste resulting from a processor's activities may be attributable to one or more "generators" (including "waste generators") as defined in this appendix). 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 (including but not limited to, activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/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 paragraph (B)(9) of rule 3701:1-54-10 of the Administrative Code; 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 properly classified, described, packaged, marked, and labeled and are in proper condition for transportation <u>according to the applicable regulations of the DOT, theNRC, and the department</u>. A collector in signing the certification is certifying that nothing has been done to the collected waste, which 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 rule 3701:1-54-10 of the Administrative Code, and meets the waste characteristics requirements in rule 3701:1-54-10 of the Administrative Code;

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 then Class C waste, in accordance with rule 3701:1-54-10 of the Administrative Code;

3. Conduct a quality assurance program to assure compliance with rule 3701:1-54-10 of the Administrative Code (The program must include management evaluation of audits);

4. Prepare the Radioactive Waste Shipment Manifest as required by this appendix;

5. Forward a copy or electronically transfer the Radioactive Waste Shipment Manifest to the intended consignee so that either (I) receipt of the manifest precedes the radioactive waste shipment or (II) the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both (I) and (II) is also acceptable;

6. Include Shipment Manifest form “Shipping Paper” with the shipment regardless of the option chosen in paragraph A.5 of this section;

7. Receive acknowledgement of the receipt of the shipment in the form of a signed copy of Shipment Manifest form “Shipping Paper”;

8. Retain a copy of or electronically store the Radioactive Waste Shipment manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by rules 3701:1-40-21, 3701:1-44-23, and 3701:1-56-10 of the Administrative Code; and

9. For any shipments or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this appendix, conduct an investigation in accordance with paragraph E of this appendix.

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

1. Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of Shipment Manifest form “Shipping Paper”;

2. Prepare a new manifest to reflect consolidated shipments that meet the requirements of this appendix. The waste collector shall ensure that, for each container of waste in the shipment, the manifest identifies the generator of that container of waste;

3. Forward a copy or electronically transfer the Radioactive Waste Shipment Manifest to the intended consignee so that either: (I) receipt of the manifest precedes the radioactive waste shipment or (II) the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both (I) and (II) is also acceptable;

4. Include Shipment Manifest form “Shipping Paper” with the shipment regardless of the option chosen in paragraph B.3 of this section;

5. Receive acknowledgement of the receipt of the shipment in the form of a signed copy of Shipment Manifest form “Shipping Paper”;

6. Retain a copy of or electronically store the Radioactive Waste Shipment Manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by rules 3701:1-40-21, 3701:1-44-23, and 3701:1-56-10 of the Administrative Code;

7. For any shipments or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this appendix, conduct an investigation in accordance with paragraph E of this appendix; and

8. Notify the shipper and the department (phone 614-644-2727) 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 cancelled.

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

1. Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of Shipment Manifest form “Shipping Paper”;

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. For each container of waste in the shipment, the manifest shall identify the waste generators, the preprocessed waste volume, and the other information as required in paragraph i.e. of this appendix;

3. Prepare all wastes so that the waste is classified according to rule 3701:1-54-10 of the Administrative Code and meets the waste characteristics requirements in 3701:1-54-10 of the Administrative Code;

4. Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with 3701:1-54-10 of the Administrative Code;

5. Conduct a quality assurance program to assure compliance with 3701:1-54-10 of the Administrative Code (The program shall include management evaluation of audits);

6. Forward a copy or electronically transfer the Radioactive Waste Shipment Manifest to the intended consignee so that either: (I) receipt of the manifest precedes the radioactive waste shipment or (II) the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both (I) and (II) is also acceptable;

7. Include Shipment Manifest form “Shipping Paper” with the shipment regardless of the option chosen in paragraph C.6 of this section;

8. Receive acknowledgement of the receipt of the shipment in the form of a signed copy of Shipment Manifest form “Shipping Paper”;

9. Retain a copy of or electronically store the Radioactive Waste Shipment Manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by rules 3701:1-40-21, 3701:1-44-23, and 3701:1-56-10 of the Administrative Code;

10. For any shipment or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this appendix, conduct an investigation in accordance with paragraph E of this appendix; and

11. Notify the shipper and the department (phone 614-644-2727) 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 cancelled.

D. The land disposal facility operator shall:

1. Acknowledge receipt of the waste within one week of receipt by returning, as a minimum, a signed copy of Shipment Manifest form “Shipping Paper” 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 Radioactive Waste Shipment Manifest and materials received, copies or electronic transfer of the affected forms must be returned indicating the discrepancy;

2. Maintain copies of all completed manifests and electronically store the information required by 3701:1-54-12 of the Administrative Code until the department terminates the license; and

3. Notify the shipper and the department (phone 614-644-2727) when any shipment, or part of a shipment, has not arrived within sixty days after receipt of an advance manifest, unless notified by the shipper that the shipment has been cancelled.

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

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

2. Be traced and reported. The investigation shall include tracing the shipment and filing a report with the department of health, bureau of radiation protection (phone 614-644-2727). Each licensee who conducts a trace investigation shall file a written report with the department within two weeks of completion of the investigation.