



LOW-LEVEL RADIOACTIVE WASTE  
WASTE ACCEPTANCE GUIDELINES

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For: Perma-Fix Northwest Richland, Inc.  
December 2007

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## 1.0 PFNW WASTE PROCESSING

- 1.1 PFNW accepts non-RCRA, low level, radioactive waste and materials for either non-thermal or thermal processing. PFNW also accepts mixed radioactive and hazardous wastes in Richland, Washington. Refer to the Mixed Hazardous Waste Acceptance Criteria for shipments of mixed waste.
- 1.2 By license, no wastes will be accepted by PFNW unless a properly executed contract or purchase order is on file, with an incorporated 'Return of Waste' clause such as indicated below:
- 1.3 With regards to the below clause, "Company" shall be the generator of the waste or company authorized by its license to receive the returned waste.

**Return of Waste** – Company understands and acknowledges that PFNW must, in accordance with its Radioactive Materials License, retain the right to return Radioactive Waste, whether processed or unprocessed, to the generator; provided, however, that a) any such return of Company waste that otherwise meets the PFNW Waste Acceptance Guidelines will occur only in the event the State exercises its regulatory authority under PFNW's Radioactive Material License, which requires such return, or b) any such return of Non-Conforming Company waste may be accomplished without regard to any such exercise of regulatory authority. Therefore, Company hereby represents, warrants, and promises that it has the legal right and ability to accept, and will accept, the return of radioactive waste, whether processed or unprocessed, back to the generating facility, in the event the exercise of regulatory authority by the State requires such return or in the event PFNW exercises its right to return non-conforming waste. In addition, Company represents, warrants, and promises a) the generating facility is located in a State or Compact that is a signatory to the Interregional Access Agreement for Waste Management, or b) that Company has written assurances from the appropriate State Governor's Office, State Radiation Control Program and Compact Official, if any, for such return of Company waste to be shipped to PFNW under this order.

\_\_\_\_\_  
'Company' Representative

\_\_\_\_\_  
Date

### 1.2 Non-thermal processing includes:

Pass Through (handling only)  
Storage for Decay  
Super Compaction  
Volume Reduction (Segregation, sorting)  
Stabilization/Encapsulation (e.g., sources)  
Decontamination (e.g., metals, concrete)

Storage

Metal Recycling

Survey for Release (metals, concrete, etc.,)

Other processes as may be developed or requested from time to time

1.3 Thermal processing at PFNW includes:

Batch Processing Units 1 and 2

Other thermal processes as may be developed or requested from time to time

**2.0 WASTE NOT ACCEPTED BY PFNW**

The following types of waste are currently not accepted by PFNW:

Gases (except gas, not exceeding an internal pressure of 1.5 atm, contained in or on instruments or other equipment).

Pyrophoric Metals (except with special approval)

Explosives

Listed Dioxins

**3.0 WASTE ACCEPTANCE GUIDELINES FOR NON-THERMALLY PROCESSED WASTE - (See Section 1.2)**

**In accordance with 10 CFR 30, licensees are required to verify the consignee's ability to receive radioactive materials. Contact Document Control at 509-375-5160 or 7014 for updated copies of the PFNW Low-Level Radioactive Materials License.**

3.1. Activity Limits Per Shipment For Non-Thermally Processed Waste

Shipments to PFNW will require prior approval of the Operations Department. The activity being shipped will be compared to both site possession limits (as stated in the current site radioactive materials license) and the pertinent air permit. Every effort will be made to accommodate the requested shipment.

**Activity limits in stated licenses and permits may at times be exceeded upon prior notification to PFNW and subsequent approval by the appropriate State Regulatory Agency. Contact the Operations Department in these situations for approvals. License and permit variances typically take 30 days for processing and approval so timely notification is necessary to minimize shipment delays.**

- 3.1.1 Activity conditions applicable to Atomic Numbers 84-103 are:
- 3.1.1.1 For any container in which the diffuse waste activity is greater than 10 mCi, PFNW will institute PFNW Low-Level Operating Procedure 104, Non-Routine Operational Planning.
  - 3.1.1.2 For any container in which the diffuse waste container is greater than 100 mCi, requires State Regulatory Agency approval prior to receipt of the waste.
  - 3.1.1.3 For any container in which the discrete source (sealed or otherwise) is greater than 10 mCi requires State Regulatory Agency approval prior to receipt.

### 3.2 Waste Forms And Restrictions For Non-Thermally Processed Waste

#### 3.2.1 Non-Thermally Processed Dry Active Waste (DAW)

DAW consists of plastics, paper, glass, wood, cloth, light gauge metals, air filters, and other contaminated materials determined to be DAW by PFNW.

DAW shipped for supercompaction prior to disposal should be packaged in standard 55-gallon drums no taller than 35 1/4 inches. DAW may also be received for supercompaction in bulk containers (i.e., B-25 boxes, Sea/land containers, overpack drums, etc.,).

DAW sent for volume reduction prior to super compaction should be placed in transparent sealed plastic bags (55 gallon or less) inside the shipping container. Warning note(s) on the container must be provided if the material consists of sharps or other materials for which handling may present health and safety issues.

Prior approval from PFNW must be made if removable contamination levels exist on the outside of plastic bags in excess of 10,000 dpm/100 cm<sup>2</sup> beta-gamma and/or 1,000 dpm/100 cm<sup>2</sup> alpha. Additional charges may be incurred.

DAW for volume reduction and metal for decontamination, when sent in the same package, is acceptable only if both waste types net weight and radionuclide distribution are documented separately on the manifest or RSR.

DAW must be packaged for transport in accordance with the requirements cited in Section 8, paragraph c. DAW destined for pass through must be classified for disposal in accordance with the requirements cited in Section 8, paragraphs d, e, f or g, as appropriate.

**DAW for thermal processing has additional restrictions (See Section 4.2.1)**

3.2.2 Metals/Concrete for Decontamination/Recycling

Metal/concrete may be acceptable for decontamination dependent on isotopes of concern and provided it has no pyrophoric properties and the level of removable contamination is less than 10,000 dpm/100 cm<sup>2</sup> beta-gamma and 1,000 dpm/100 cm<sup>2</sup> alpha. Removable contamination levels in excess of these limits must have prior approval from PFNW. Additional charges may be incurred.

Verification must be provided that the metal/concrete has not been in a neutron field and is not activated.

3.2.3 Sealed Sources and Other Discrete Sources

Sealed sources or other discrete sources sent for stabilization or encapsulation shall be documented individually on the manifest. If special pricing has been quoted, that quote must be referenced on the PFNW Pre-Shipment Notification Form or otherwise forwarded with the shipment.

Sealed sources may qualify for thermal treatment and disposal as dry active waste provided the individual source is:

- 3.2.3.1 liquid, or
- 3.2.3.2 has a melting point below 1800°F, or
- 3.2.3.3 is in the form of a coating on the external surface only of a solid material.

For any container in which the discrete source (sealed or otherwise) is greater than 10 mCi, State Regulatory Agency approval is required prior to receipt.

Activity restrictions may apply.

3.2.4 Absorbed and Free Liquids

Liquids that have been absorbed shall be packaged in accordance with the applicable disposal site requirements or designated for thermal processing. If designated for thermal processing, organic absorbents are preferred over inorganic. (See Section 8, paragraph e). It is even more preferable that liquids not be absorbed and solids content is less than 5% by volume.

Free liquids sent for processing must have secondary containment or be packaged with an approved sorbent placed in the void space between the inner

and outer container. The sorbent must be of sufficient volume to absorb all the liquid.

The volume of liquid present must be noted on the manifest. Special arrangements must be made for PFNW to receive liquids in a manner other than listed above.

### 3.2.5 Solidified Liquid

Solidified liquids are acceptable provided that they have been solidified and packaged in accordance with applicable disposal criteria (see Section 8, paragraphs e, f and g). Other packaging methods may be acceptable with prior approval of PFNW.

### 3.2.6 Radioactively Contaminated Asbestos

Radioactive, asbestos-containing material is acceptable provided it has been treated (abated) in accordance with 40 CFR 61.150

### 3.2.7 Radioactive Gases Contained in Instruments/Devices

Gases, not exceeding an internal pressure of 1.5 atm, that are an integral part of instruments and devices are acceptable. The devices must be packaged in accordance with the requirements cited in Section 8, paragraphs e and f.

### 3.2.8 Non-Thermally Processed Biological/Animal Waste

All biological and animal waste sent for non-thermal processing must be packaged in accordance with the disposal site requirements (see Section 8, paragraphs e and f).

### 3.2.9 Storage for decay materials containing short-lived radionuclides may be acceptable for storage for decay. Storage by license is limited to isotopes with 170-day T1/2 or less.

Radionuclides with T1/2, not exceeding 60 days, are limited to 25 curies per incoming package, without special approval.

S35 may not exceed 460 mCi per incoming package without special approval.

Ca45 may not exceed 2 mCi per incoming package without special approval.

All other radionuclides with T1/2 exceeding 60 days will require special approval.

Single containers with radionuclides that will not decay to <4.2 mCi and 1% of the original incoming activity, in that 5-year period, will not be acceptable for storage for decay.

#### 4.0 WASTE ACCEPTANCE GUIDELINES FOR THERMAL PROCESS WASTE (See Section 1.3)

**In accordance with 10 CFR 30, licensees are required to verify the consignee's ability to receive radioactive materials. Contact Document control at 509-375-5160 for updated copies of the PFNW Low-Level Radioactive Materials License.**

##### 4.1 Activity Limits For Thermal Process Waste

Shipments to PFNW will require prior approval of the Operations Department. The activity being shipped will be compared to both site possession limits (as stated in the current site radioactive materials license) and the thermal air permit. Every effort will be made to accommodate the requested shipment.

**Activity limits in stated licenses and permits may at times be exceeded upon prior notification to PFNW and subsequent approval by the appropriate State Regulatory Agency. Contact the Materials Control Department in these situations for approvals. License and permit variances typically take 30 working days for processing and approval so timely notification is necessary to minimize shipment delays.**

##### 4.1.1 Activity conditions applicable to Atomic Numbers 84-103 are:

- 4.1.1.1 For any container in which the diffuse waste activity is greater than 10 mCi, PFNW will institute PFNW Low-Level Operating Procedure 104, Non-Routine Operational Planning.
- 4.1.1.2 For any container in which the diffuse waste container is greater than 100 mCi, requires State Regulatory Agency approval prior to receipt of the waste.
- 4.1.1.3 For any container in which the discrete source (sealed or otherwise) is greater than 10 mCi requires State Regulatory Agency approval prior to receipt.

##### 4.2 Waste Forms And Restrictions For Thermal Waste

##### 4.2.1 Thermal Process Dry Active Waste (DAW)

Thermal process DAW may consist of the following materials in any combination:

Asbestos – in accordance with 40 CFR 61.150  
 100% cotton material  
 Cotton/polyester cloth  
 Diatomaceous earth  
 Glass  
 Granular activated carbon  
 High density polyethylene (HDPE)  
 Ion exchange resin  
 Latex  
 Leather  
 Nitrile/nitrile rubber  
 Nylon  
 Paper  
 Polycarbonate  
 Polyester  
 Polyethylene/polypropylene/polystyrene/  
 polyurethane/urethane plastics  
 < 5% by weight of polyvinyl chloride (PVC)  
 Natural rubber  
 Spun bonded polyolefin  
 Transparent thermoplastic  
 Ultra high molecular polyethylene  
 Wood  
 Sludges, Soil, and silica based inorganic materials  
 Organic absorbents (cellulose based)  
 Other materials certified incinerable

Materials with high percentages of inorganic matter will result in significantly less volume reduction and may be charged at a higher rate.

**NOTE:** Due to the varied physical characteristics of materials thermally processed, 100% removal of volatile radionuclides ( $H_3$ ,  $C_4$ , I,  $Cl_{36}$ , S-35, and noble gases) may not be possible.

**Materials strictly prohibited in thermal process DAW include:**

> 5% wt PVC

Metals/Sharps (acceptable for BPU only with prior approval and special container marking to protect waste handlers)

Teflon and Fluorinated Products in ANY form

Any halogen-containing compounds will require special approval.

Sealed Sources (may be accepted on an individual basis with prior approval with a special pricing quote). Sealed sources may qualify for

thermal treatment and disposal as dry active waste provided the individual source is:

- A. liquid, or
- B. has a melting point below 1800°F, or
- C. is in the form of a coating on the external surface only of a solid material.

Activity restrictions may apply.

Salts (i.e., sodium chloride, sodium sulfates, phosphates, etc.) must be identified and will require special approval.

Pressurized containers, such as spray cans.

#### 4.2.2 Resins

Resins are generally not accepted for thermal treatment at this time but may be considered on a case by case basis.

#### 4.2.3 Biological Waste (Animal Carcasses, etc.)

Biological waste must be received frozen unless prior approval is given by PFNW.

Animal bedding materials are acceptable.

Vegetation samples are acceptable.

Any DAW acceptable for thermal processing (see Section 4.2.1) that is contaminated with biological material is acceptable. Wastes must not contain material specifically prohibited by Section 4.2.1. Materials listed with limitations in Section 4.2.1 will require special approval.

#### 4.2.4 Aqueous Liquid Waste

Aqueous liquid waste may be received in steel or polyethylene drums, liners, or other like containers, polyethylene carboys, prior approved bulk tanks, or in double wall containers (e.g., 30-gallon tight-head drum inside a 55-gallon open-top drum). If absorbent material is used, organic absorbents are preferred over inorganic sorbents.

Aqueous liquids sent for thermal processing must meet the following guidelines:

- <30% by weight chelating agents
- <5% by weight oil content

pH range from 2 to 12.5

<5% by volume total bulk solids

<0.1% total metals

**Aqueous liquids exceeding the above limits may be accepted with prior notification and subsequent approval by PFNW.**

Aqueous liquids containing RCRA/TSCA wastes or etiological agents are strictly prohibited.

Aqueous liquids must be free of items prohibited by Section 4.2.1. Materials listed with limitations in Section 4.2.1 will require special approval.

#### 4.2.5 Oils (Petroleum-based products and synthetic fluids)

Waste oils may be received in steel or polyethylene drums, liners or other like containers, polyethylene carboys, prior approved bulk tanks, or in double wall containers (e.g., 30-gallon tight-head drum inside a 55-gallon open-top drum). If absorbent material is used, organic absorbents are preferred over inorganic sorbents.

Waste oils must meet the following guidelines:

<5% by volume aqueous liquid content

>140°F flash point

<5% by weight total solids

Viscosity must be <90 weight oil (must be pumpable at 60°F).

Phosphate, silicon or other inorganic-based special oils or fluids (e.g., EHC, Fyrquel, etc.) shall be free from trash or other bulk solids. This material will require special pricing. These materials must also be uniquely identified on the manifest and the container(s). The resulting thermally processed volume is significantly higher for these fluids.

Different liquids should not be mixed. Mixed liquids (oil, water, inorganic based fluids, etc.) shall be identified with the approximately proportions by volume and may be priced at the cost of the most process restrictive product.

Waste oils containing RCRA/TSCA wastes are strictly prohibited.

Waste oils must be free of prohibited items listed in Section 4.2.1. Materials listed with limitations in Section 4.2.1 will require special approval.

#### 4.2.6 Soils and Sludges

Soils and sludges not containing RCRA/TSCA wastes are acceptable.

Sludges must be pumpable/sprayable or dry/pneumatic conveyable.

Soils and sludges must be free of items prohibited by Section 4.2.1. Materials listed with limitations in Section 4.2.1 will require special approval.

#### 4.2.7 Organic Liquid (non-water based)

Organic liquid not containing RCRA/TSCA wastes and that are doubly contained or packaged with an approved sorbent placed in the void space between the inner and outer container are acceptable. The sorbent must be of sufficient volume to absorb all the liquid. The volume of liquid present must be noted on the manifest or RSR.

Organic liquids shall be free from trash or other bulk solids, as well as other materials prohibited by Section 4.2.1. Materials listed with limitations in Section 4.2.1 will require special approval.

## 5.0 ACCEPTANCE OF NON-STANDARD WASTE

PFNW may accept waste that does not meet the standard waste acceptance guidelines above. The client must work with the Customer Service Representative and the Marketing/Sales Representative to determine the necessary conditions for approval.

Non-standard wastes may require additional processing time and may fall out of process and/or disposal time contracted commitments. Synthetic fluids are an example of this type of waste.

The Customer Service Representative will work with the Radiation Safety Officer and the Plant Supervisors to determine the acceptability of the waste form. The following questions should be addressed:

Can the waste be processed in a timeframe that meets PFNW' license and permit conditions?

Can the waste be safely processed in the planned manner?

The Customer Service Representative then must obtain the approval of the LLW Facility Manager or his designee. The LLW Facility Manager will confirm that no license or permit requirement will be violated by accepting and processing the waste. Specifically, the LLW Facility Manager shall confirm that:

The waste can be safely shipped, received, and adequately processed for burial and has a return of waste clause.

The radionuclide concentrations can be accepted without exceeding PFNW' license/permit limitations.

The waste can be processed in a manner that meets PFNW' ALARA and Health & Safety program objectives, and managed in an environmentally safe manner.

The LLW Facility Manager will work with the Marketing/Sales Representative and the customer to complete a Pre-Shipment Notification Form. A copy of the completed form shall be provided to the PFNW LLW Facility Manager. Customers may not ship waste to PFNW without an PFNW-assigned shipment approval number. This number will appear in the upper right-hand corner of the Pre-Shipment Notification Form.

Pricing for non-standard waste shall be developed by the Chief Operating Officer with the assistance of the appropriate supervisors/managers.

## **6.0 PACKAGING AND SHIPPING GUIDELINES**

### **6.1 Container Guidelines**

Package identifications and other required markings and labeling shall be clearly visible on the shipping containers.

Radioactive waste/materials shall be packaged in wooden or steel containers unless alternative containers are approved by PFNW.

Combustible-type containers, such as fiber boxes or drums, are preferable for wastes to be thermally treated.

Wooden boxes shall be banded and secure.

Steel boxes, as shipping containers, shall have all retaining clips in place and secure.

Drum rings and bolts shall be secured properly. Locking nuts, when present, shall be secure.

Containers exceeding 1000 pounds must be palletized or fitted with lift rigging.

If inner containers exceed removable contamination levels in excess of 1000 dpm/100 cm<sup>2</sup> beta/gamma or 20 dpm/100 cm<sup>2</sup> alpha, PFNW may request extended use of the external containers until the inner containers can be safely off-loaded. Costs for holding external containers will be negotiated by PFNW Marketing/Sales personnel.

## 6.2 Volume Measurement and Tare Weights

Volume shall be based on the external dimensions of the container excluding the dunnage.

Pass-through waste shipped for inspection only shall have the volume documented in accordance with the appropriate disposal facility criteria.

Tare weights shall be marked on each package greater than 20 ft<sup>3</sup> or weights shall be provided in an attachment to the shipping documents. PFNW may weigh each item upon receipt for verification.

In all cases, the quantity of waste, gross or net as appropriate, associated with a contracted billing category should be provided either on or with the manifest.

## 6.3 Shipment Guidelines

The PFNW Operations Department must be informed of all waste shipments to PFNW regardless of the carrier. This provides the Richland site a concise schedule of shipments to be received and will facilitate timely off-loading.

All waste shippers shall submit the PFNW Pre-Shipment Notification Form (Attachment 2) prior to shipment. Approval to ship waste must be received by the shipper 24 hours prior to shipment. Waste may not be shipped to PFNW without an PFNW-assigned approval number. This number will appear in the upper right-hand corner of the PFNW Pre-Shipment Notification Form.

Drums must be loaded so that they can be off-loaded using a mechanical lifter. Drums weighting >2,500 pounds will be accepted with prior approval of the PFNW Operations Department. PFNW prefers all drums be palletized.

Drums may be double-stacked, provided that no drums heavier than 400 pounds are placed on top.

Containers other than those noted above shall be elevated from the trailer floor and accessible with a forklift.

Each package shall have a top clearance of at least 18 inches in a closed van.

Packages or palletized loads weighing more than 4,200 pounds shall not be shipped in a closed, hardtop trailer.

Liners, boxes and/or palletized drums shipped on flatbed trailers must be loaded in such a manner that they may be off-loaded from the side using a forklift.

Items heavier than 12,500 pounds must have at least 6 inches of bottom clearance, or be accessible from the top with approved lifting mechanisms.

PFNW accepts radioactive waste/material shipments by highway and with special approval by rail, vessel, or air. Contact the PFNW LLW Facility Manager to arrange for receipt by other than highway.

All shipments shall meet all the applicable requirements cited in Section 8.

#### 6.4 Empty Package Return and Container Leasing

Packaging shall not be returned unless prior arrangements have been made.

PFNW can provide boxes, sea/land containers, and drums, by arranging with the PFNW LLW Facility Manager.

Sea/land containers and metal boxes (when available) can be provided to customers as necessary.

### 7.0 NOTIFICATION, MANIFESTING AND DOCUMENTATION GUIDELINES

#### 7.1 General Procedure For Waste Shipments to PFNW

1. Customer establishes contract with PFNW Sales and Marketing.

<p><b>NOTE:</b> In accordance with Condition 28 of PFNW' License #WN-10393-1, the licensee shall establish in every contractual obligation relating to radioactive materials the ability to return radioactive material, processed or unprocessed, to the prior licensed possessor.</p>
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2. Customer completes Pre-Shipment Notification Form (Attachment 2) and faxes or e-mails notification to PFNW Operations Department within 24 hours of the anticipated shipment.

Fax: 509-371-1040

e-mail: [mmccargar@perma-fix.com](mailto:mmccargar@perma-fix.com)

[lmorin@perma-fix.com](mailto:lmorin@perma-fix.com)

3. Customer may arrange transportation either through the PFNW Operations or, if arranging own transportation, must notify PFNW Operations of the pending shipment. This allows for development of a comprehensive schedule of shipments within the PFNW system to ensure all of our customer needs are met in a timely manner. Operations may be reached at 509-375-7046 or 5160.
4. PFNW reviews Pre-Shipment Notification Form and anticipated waste shipment for compliance with these Guidelines, Site License and Permits, and Customer Contract.

5. If not approved, the Customer Service Manager will be contacted for resolution.
6. If approved, an acceptance number will be assigned to the shipment and either faxed or e-mailed back to the customer.
7. The customer then ships the waste to PFNW. Scheduling changes must be relayed to the PFNW Operations Department.
8. When the shipment arrives, the shipment and all supporting documentation will be reviewed for compliance with all applicable permits, licenses, regulations and contract conditions. Any discrepancies must be resolved prior to shipment acceptance. Conditions that cannot be resolved may result in rejection and return of the shipment to the generator.

**NOTE:** All shipments are subject to the review and approval of the Washington Department of Health.

## 7.2 Shipment Documents

The following documents shall accompany each shipment of radioactive waste/material to PFNW:

Uniform Low-Level Radioactive Waste Manifest (no exceptions per PFNW Radioactive Materials License). Original signatures are required.

**NOTE:** To aid in electronic transfer of data, PFNW strongly encourages the use of the low-track electronic manifest (available at <http://mims.inel.gov/web/owa/Ltindex>). Other electronically-generated manifests, such as Radman or DWJames, are also acceptable. Use of handwritten manifests may cause delays in off-loading.

Original Washington Department of Health (WDOH) Form RHF-31 (no exceptions per PFNW Radioactive Materials License). Original signatures are required on RHF-31 Form.

A statement of any unusual hazards or conditions

DOE/NRC Form 741 for SNM, if applicable

Emergency contact information

Exclusive Use Instructions, if applicable

Exceptions Taken (e.g., limited quantity, etc.)

## 7.3 Manifesting Requirements

Manifest forms shall comply with current Department of Transportation (DOT) and NRC regulations. Original signatures are required on the manifest received at PFNW.

Manifest forms are to be inspected by PFNW and made available to a WDOH official prior to acceptance.

Improperly prepared Manifest forms will result in acceptance delays or shipment refusals.

Notification of receipt, by return of a signed copy of the Manifest Form 540 shall be made to the customer within 7 days. Discrepancies are to be noted on the manifest, or a cover letter. PFNW will typically also fax a copy to the shipper upon receipt.

All totals on the Manifest shall match all totals on the accompanying paperwork for each shipment.

All volumes, weights, and activities should be a reasonable estimate. Gross and net weight and volume for each container in the shipment must be provided to PFNW with the shipment.

If the customer is sending materials in different billing categories in the same shipment, an appropriate measurement of each waste category should be provided to aid in timely and accurate billing.

If shielded containers are being used, it is extremely important to provide PFNW with the net weights of the waste to be processed.

Use Manifest continuation sheets, as necessary, to fully describe each waste form within each package.

The radionuclides present in each waste form are to be listed.

De-listing of trace or insignificant radionuclides, as allowed by current DOT regulations or Burial Site Guidelines, is encouraged. Waste manifests for materials shipped to PFNW for processing that contains radionuclides not listed on Energy Solutions' current radioactive materials license will not be processed for disposal at Energy Solutions.

The milliCurie content of each radionuclide for each waste form is to be provided.

Indicate the physical form of each waste type.

Indicate the chemical form of each waste type.

If the waste form contains chelating agents in quantities greater than 0.1%, the types and their weight percentages are to be listed.

Each waste form is to be described. Different waste forms within a package require a separate radionuclide/activity breakdown on the manifest or attachment. For

example, if oil for thermal and DAW for decay are manifested in a single shipping package, a separate radionuclide breakdown for each should be provided to ensure proper tracking of the waste.

If SNM is present in the waste form, the gram weight is to be provided.

If source material is present in the waste form, the source kilograms are to be provided.

The total weight of each package and its contents is to be provided. If this is an estimate, it should be so stated.

The volume for each waste form, either in cubic feet or cubic meters, is to be provided.

The type of container used for each package is to be listed.

Unique identification numbers shall be provided for each container.

The highest measured radiation level for each package surface and T.I., when applicable, is to be recorded.

The type of DOT labels or markings used on each containers are to be recorded.

Containers of biological materials requiring refrigeration must be separately identified on documents forwarded with the shipment.

In accordance with the PFNW Radioactive Materials License, each shipment must be accompanied by a Washington State Form RHF-31 (Attachment 1). Original signatures are required.

#### 7.4 Classification Requirements

Although the generator is not required to classify waste/material that is sent to PFNW for processing, in accordance with 10 CFR 20 Appendix G, special arrangements must be made prior to receipt of unprocessed (Class A stable, B, or C) wastes. This will ensure the customer wastes can be processed in full compliance with disposal site and NRC guidance.

All waste received at PFNW for pass-through prior to disposal shall be classified in accordance with 10 CFR 61.55 and the designated disposal site requirements.

The classification of each waste form, either AU, AS, B, or C is to be listed.

For Class C wastes, specific justification for the classification, which details methods and calculations, must be presented to PFNW prior to shipment.

Absorbed and solidified liquids shall be classified over the pre-absorbed/solidified volume.

Sources (sealed sources and discrete items) designated for disposal shall be classified in accordance with the appropriate disposal facility guidelines.

For Barnwell, South Carolina, classify over the volume of the source.

For U.S. Ecology, if the source is <100 microCuries, classify over the volume of the packaging. For sources >100 microCuries, classify over the volume of the source, or if encapsulated, over the volume of the packaging.

<b>NOTE:</b> Sealed sources are prohibited for disposal at Energy Solutions.
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## 8.0 REFERENCED REQUIREMENTS FOR ALL PFNW CUSTOMERS

All customers shipping radioactive waste to PFNW shall comply with the requirements contained in the following documents, as applicable:

- a. PFNW, Washington, Department of Health Radioactive Materials License WN-10393-1
- b. Washington Administrative Codes
- c. U.S. Department of Transportation (DOT) Code of Federal Regulations (CFR) Title 49
- d. U.S. Nuclear Regulatory Commission (NRC) CFR Title 10
- e. U.S. Ecology Low-Level Radioactive Waste Disposal License
- f. CNSI Barnwell Waste Management Facility site Disposal Criteria
- g. Energy Solutions Site Acceptance Criteria
- h. DOE-Hanford Waste Acceptance Criteria
- i. NTS Waste Acceptance Criteria

## 9.0 PFNW GENERAL FACILITY INFORMATION

Address: 2025 Battelle Boulevard  
Richland, WA 99354

Telephone: (509) 375-7066 (24 hours a day)  
(509) 375-7046

FAX: (509) 371-1040 (24 hours a day)

Emergency: (509) 375-7066 or (800) 321-2844 (24 hours a day)

Normal Hours: Monday through Friday, 6:30 a.m. - 3:00 p.m. PST

Waste Operations and Receiving: Monday through Thursday, 6:30 a.m. – 5:00 p.m.

Shipments received Friday through Sunday may incur additional charges

Observed Company Holidays:

Memorial Day Observance  
Independence Day  
Labor Day  
Thanksgiving and the following Friday  
Christmas and the day before or after  
New Years Day

## **10.0 ATTACHMENTS**

Attachment 1 – Washington State Form RHF-31D

Attachment 2 – Pre-Shipment Notification Form

Attachment 3 – Pre-Shipment Notification Form Instructions

**RADIOACTIVE WASTE SHIPMENT CERTIFICATION FOR SHIPMENTS TO THE  
COMMERCIAL RADIOACTIVE WASTE DISPOSAL FACILITY  
OR RADIOACTIVE WASTE PROCESSOR**

The following certification, completed as applicable, is made to the state of Washington:

Certification is hereby made to the state of Washington that the radioactive waste described on manifest/bill of lading No. \_\_\_\_\_ has been inspected and it has been determined that the materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable federal and state regulations, laws, rules, and licenses.

The undersigned shall indemnify and hold harmless the state of Washington from any and all claims, suits, losses, charges, and expenses on account of injuries to any and all persons whomsoever, and any and all property damage arising or growing out of or in any manner connected with this shipment to the extent that the claims, suits, losses, charges, or expenses are caused in whole or in part by negligent acts or omissions of the undersigned.<sup>1</sup>

Except for any violation of applicable state or federal statute or regulation or license condition respecting packaging and shipment, inspection and acceptance of any item or container or material covered by this certification by the state of Washington or a duly authorized contractor shall release the party who executed this certificate from any and all requirements of indemnification and hold harmless from injury or loss.

.....  
**SECTION A:**

GENERATOR: \_\_\_\_\_  
(Company or Agency Name)

PERMIT NUMBER: \_\_\_\_\_

VOLUME OF WASTE IN THIS SHIPMENT: \_\_\_\_\_

BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(Printed Name)

SIGNATURE: \_\_\_\_\_ DATED: \_\_\_\_\_

.....  
**SECTION B:**

BROKER: \_\_\_\_\_  
(Company Name)

PERMIT NUMBER: \_\_\_\_\_

VOLUME OF WASTE IN THIS SHIPMENT: \_\_\_\_\_

BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(Printed Name)

SIGNATURE: \_\_\_\_\_ DATED: \_\_\_\_\_

.....  
**SECTION C:**

CARRIER: \_\_\_\_\_  
(Company Name)

VOLUME OF WASTE IN THIS SHIPMENT: \_\_\_\_\_

BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(Printed Name)

SIGNATURE: \_\_\_\_\_ DATED: \_\_\_\_\_

DOH RHF-31D  
Updated 3/01

<sup>1</sup> Federal government generators are referred to the provisions of the Federal Tort Claims Act (28 U.S.C. §2671-2680).

# Low Level Pre-Shipment Notification Form

PFNW

Signature				Shipment Approval Number			
PFNW Materials Control Manager or Designee			Date				
1. Broker/ Shipper				6. Broker/Shipper Telephone			
2. Client				6. Broker/Shipper FAX			
3. Carrier				7. Client Telephone			
4. Manifest Number				Client FAX			
5. Ship Date				8. Proper Shipping Name (Circle one or more)			
Scheduled Arrival Date		LSA I		LSA II		LSA III	
9. Material Description		SCO I		SCO II		Type A	
				LTD QTY		EMPTY	
				I or A		Non-DOT	
10. List All Isotopes and Total Activity of Each: (computer generated shipment summary sheet may be used)							
Isotope	Activity		Isotope	Activity		Isotope	Activity
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi		mCi
		mCi			mCi	Total	mCi
11. Total SNM for Shipment gms				12. Total Source for Shipment kgs			
13. Shipment Net Volume ft3				14. Shipment Gross Weight lbs			
15. Container Type and Number		Metal drum		C-van		Metal box	
Tanker		Fiberbox		Fiber Box		Other:	
16. Processing (list quantities and units, based on contracted billing category, for each desired process)							
Volume Reduction	Super Compaction	Stabilize	Fill Material	Pass Through	Store for Decay		
Decon & Release		Safglas		Batch Processing Unit		Return Container #'s	
17. Special processing or billing instructions							



# Instruction Sheet for Pre-Shipment Notification Form

The Pre-Shipment Notification Form provides Perma-Fix Northwest Richland, Inc. (PFNW) with the information needed to properly receive and process generators waste without costly time delays. It also allows PFNW to resolve any questions before waste arrives.

## Data Entry Instructions

1. Enter the name of the company that is brokering the shipment or company shipping the load.
2. Enter the name of the facility that waste originated from.
3. Enter the name of the transporting company.
4. Enter the manifest number if known. If the manifest number is not available until the day of the shipment then leave blank.
5. Enter anticipated dates of shipment and arrival.
6. Enter the telephone number of the shipping or brokering company.
7. Enter the telephone number of the facility waste originated from.
8. Enter all DOT proper shipping classes that will be used for containers in this shipment. If a shipping class determination is not going to be done until the date of shipment, then leave blank.
9. Write a brief description of the material type in the shipment (e.g., 7 drums liquid glycol and water, 2 c-vans of compactable trash). The material described should match the contract category descriptions.
10. List all isotopes to be in the shipment and the totals of each for the shipment. This is vital in approving the shipment. These isotopes and activities will be checked against the current onsite inventory and PFNW' radioactive material license. A shipment summary sheet may be attached in lieu of completing this section.
11. Enter the total grams of SNM for the shipment.
12. Enter the total kilograms of source material for the shipment.
13. Enter the shipment net volume in cubic feet. If it is an estimate write "est." after the volume.
14. Enter the gross weight of the shipment in pounds. If it is an estimate write "est." after the weight.
15. Circle the container types that will be in the shipment or write in the type of container in the space marked "other" if it is not listed. Write the number of each type of container in the space next to the container type.
16. This block is used to describe the method of process the generator would like used for their material. List the quantity and units under the process to be used. The quantity used is to be based on the contracted billing category to allow for timely invoicing.
17. If there is a need to give specific instructions concerning the process of a container, write it in this block. Also reference any special billing agreement as applicable.
18. Circle the appropriate answer. The State of Washington requires an RHF-31 form for waste transported in the state and must be part of the shipping papers. Original signatures are required in all sections.
19. Circle the appropriate answer.
20. Circle the appropriate answer. An export permit must be in place before shipment can be made and a copy must be included with the shipping papers.
21. Circle the appropriate answer.
22. Circle the appropriate answer. A copy of the determination letter should accompany the shipment.
23. Circle the appropriate end disposition of the waste. If there is more than one, specify which waste goes where in the block pertaining to that disposition. In addition, if the waste end disposition is;
  - a. DOE Burial at the Hanford Site, then specify if the generator is onsite or offsite.
  - b. US Ecology, then include the Washington State Site Use Generator number and the US Ecology Generator number for the generator.
  - c. Barnwell, then include the Access Fee Contract number and the South Carolina Transport Permit number for the generator.
24. This is to be signed by the party responsible for the shipment. They will be the first point of contact if there are any questions concerning the shipment.

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After review of the Pre-Shipment Notification Form, a shipment approval number will be issued for that shipment. This number is entered on the top of the form and then the completed signed form sent with the shipment. PFNW requests that a copy of the finished manifest be faxed or e-mailed to the Richland facility the date of the shipment. This is not a requirement to acceptance, but expedites the offload of the shipment.

FAX: 509-371-1040

EMAIL: [mmccargar@perma-fix.com](mailto:mmccargar@perma-fix.com)  
[lmorin@perma-fix.com](mailto:lmorin@perma-fix.com)

**NOTE:** It is imperative that the shipper supply PFNW with all tare weights to containers that are not to be part of the waste stream.