

WCS

WASTE CONTROL SPECIALISTS LLC

→ Tim Harris for Action

1710 W. Broadway • Andrews, Texas 79714 • (915) 523-4444 • Fax (915) 523-6411

June 15, 2001

Mr. Thomas H. Essig
Chief, Environmental and Performance Assessment Branch
Division of Waste Management
Office of Nuclear Material Safety and Safeguards
Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mr. Essig:

In response to your letter of May 8, 2001 you will find attached a draft procedure that memorializes the commitments previously made and responds to the new issues that you have identified. This should allow the final processing of our requested exemption from 10 CFR Part 70 for possessing special nuclear material in quantities greater than those specified in 10 CFR Part 150.

We have provided the Texas Health Department Bureau of Radiation Control with a copy of this letter, including all attachments, to keep them informed of our progress on this issue.

You may contact me at 717-540-5220 if you have questions or require additional information to process this request.

Sincerely,

William P Dornsife
William P. Dornsife
Vice President-Nuclear Affairs

cc: Richard Ratliff, Chief, Bureau of Radiation Control, Texas Health Dept.

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Effective Date mm/dd/yy	OP-X.Y.Z
		Draft A	Page 1 of 12
SPECIAL NUCLEAR MATERIAL EXEMPTION CERTIFICATION			

1.0 PURPOSE AND SCOPE

This procedure describes the waste acceptance requirements for Special Nuclear Material, SNM. Sampling and documentation requirements for the waste generator and for Waste Control Specialists, WCS, are described. The procedure lists concentration limits for SNM and the sampling frequency required for characterizing the shipments of various concentrations of SNM.

The requirements of this procedure must be satisfied for all SNM received and processed at WCS.

The requirements of this procedure are in addition to the requirements of other WCS procedures for accepting waste.

2.0 EQUIPMENT AND MATERIALS

None

3.0 RESPONSIBILITIES

3.1 The Waste Generator is responsible for completing the SNM Exemption Certification Attachment, and for ensuring that sampling requirements and documentation provide a complete and accurate characterization of the SNM.

3.2 The Waste Acceptance Specialist is responsible for the performance of this procedure and ensuring that all the requirements for receipt, sampling and analysis are satisfied prior to processing SNM.

3.3 The Radiation Safety Officer is responsible for review of the SNM Exemption Certification Attachments and the WCS verification sampling and analysis, and the WCS SNM acceptance checklist.

3.4 The Radiation Safety staff is responsible for performing sampling and analysis required by this procedure.

4.0 PROCEDURE

4.1 PREREQUISITES

4.1.1 In addition to this procedure, the following procedures are also applicable for the proper handling and documentation of SNM shipments:

4.1.1.1 OP-1.1.1, "Pre-shipment Authorization

Approval:		Concurrence:	
Waste Acceptance Specialist	Date		
Facility Manager	Date	Radiation Safety Officer]	Date

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 2 of 12

4.1.1.2 OP-1.1.2, "Shipment Document Review"

4.1.1.3 OP-1.2.1, "Arriving Vehicle Safety Inspection"

4.1.1.4 OP-1.2.2, "Waste Shipment Acceptance"

4.1.1.5 OP-1.2.4, "Waste Verification Testing"

4.1.1.6 OP-1.2.6, "Waste Shipment Off-loading"

4.1.1.7 RS-3.1.6, "Surveys of Incoming and Outgoing Shipments¹"

4.1.1.8 RS-1.4.2, "Sample Receipt, Storage, and Chain-of-Custody"

4.1.2 A completed Waste Profile, Exhibit B of the WCS Service Agreement, is required to be completed by the Waste Generator and comply with all SNM requirements specified in this procedure.

4.2 PRECAUTIONS AND LIMITATIONS

4.2.1 Special Nuclear Material concentration limits specified in this procedure shall not be exceeded.

4.2.2 When more than one SNM radionuclide is present in the mixture, the sum of the ratios of each radionuclide to its limit shall not exceed 1.

4.3 INSTRUCTIONS

4.3.1 Special Nuclear Material Limits

4.3.1.1 The License Limits for Special Nuclear Material are shown in Table 1 below. The license limits are in units of grams of SNM per grams of waste and are converted to activity concentration limits of (pCi/g).

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 3 of 12

Table 1

Maximum Allowable Concentrations of SNM in Individual Waste Containers

Radionuclide ¹	Maximum Concentration (g SNM/g waste)	Maximum Concentration (pCi/g)	Measurement Uncertainty ⁴
U-235 ²	9.891 E-4	2.14 E3	15%
U-235 ³	6.18 E-4	1.34 E3	15%
U-233	4.732 E-4	4.56 E6	15%
Pu-239	2.795 E-4	1.73 E7	15%
Pu-241	2.15 E-4	2.22 E10	15%

¹ Isotopes of uranium and isotopes of plutonium that are not listed in this table can be received in any concentration. There is no limiting concentration for the isotopes that are not listed.

² Less than 10 percent enrichment (U-235 mass enrichment)

³ Greater than 10 percent enrichment (U-235 mass enrichment)

⁴ The measurement uncertainty of 15 % applies when the measurement is at least 5 times the MDA listed in Table 2

4.3.2 Waste Generator Sampling Frequency Guidelines

4.3.2.1 The Waste Generator shall submit a sampling plan for characterizing the SNM waste. The plan shall include:

- sampling methods,
- sampling points,
- number of samples,
- analysis methods,
- detection levels,
- data reduction and analysis
- review of the data, and

increasing the sampling frequency when the data show higher concentrations of SNM than originally assumed or non-homogeneous concentrations.

4.3.2.2 The Waste Generator is expected to follow these sampling frequency guidelines. The guidelines require a higher frequency of samples to be obtained and documented as the concentration of SNM increases.

4.3.2.2.1 Table 2 lists the activity concentrations for each SNM radionuclide. The columns show the concentrations (action levels) that will define the sampling frequency.

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 4 of 12

Column 1 shows the WCS SNM concentration limit. This value shall not be exceeded.

Column 2 shows one-tenth of the WCS SNM concentration limit

Column 3 shows one-hundredth of the WCS SNM concentration limit.

The MDA, Minimum Detectable Activity (95% confidence level) listed, applies to samples that are low in activity (at or below one-hundredth of the WCS limit). When the sample contains measurable activity, achieving the MDA is not required...samples should be counted long enough to achieve 15% relative error (1 sigma total analysis uncertainty).

Table 2
Activity Concentration Action Levels

Radionuclide	1	2	3	MDA (pCi/g)
	Activity Concentration Limit (pCi/g)	0.1 Limit (pCi/g)	0.01 Limit (pCi/g)	
U-235 <10%	2.138E+03	2.138E+02	2.138E+01	4.0E+00
U-235 >10%	1.336E+03	1.336E+02	1.336E+01	2.5E+00
U-233	4.561E+06	4.561E+05	4.561E+04	1.0E+02
Pu-239	1.733E+07	1.733E+06	1.733E+05	1.0E+02
Pu-241	2.215E+10	2.215E+09	2.215E+08	4.0E+02

4.3.2.2.2 The minimum sampling frequency required by the Waste Generator is shown in Table 3.

Table 3
Waste Generator – Minimum Sampling Frequency

Activity Range (See columns in Table 2)	Minimum Sampling Frequency
Col 2 - Col 1 or when shipment is not homogeneous (min and max samples within a factor of 5 of the mean)	One sample for every 450 kg (990 lbs) of waste
Col 3 - Col 2	One sample for every 4,500 kg (9,900 lbs) of waste
< Col 3	One sample for every 45,000 kg (99,000 lbs) of waste

4.3.3 . SNM Waste Profile Homogeneity of Concentrations

The SNM concentrations will be accepted as homogeneous if the waste profile shows that the maximum and minimum concentrations are within a factor of 5 of the average concentrations.

AVG.

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 5 of 12

If the container sample concentration uniformity cannot be demonstrated by process knowledge, then the Waste Generator will perform additional sampling and additional information from the Waste Generator certifying the waste will be required in the sampling plan:

4 about
Regardless of conc.

Additional sampling requirements (Waste Generator sample and analysis) when the homogeneity cannot be demonstrated are: One sample for every 450 kg (990 lbs) of waste will be required unless it can be demonstrated by some other means (process knowledge or other sampling) that there is less than 350 grams of U-235 and less than 200 grams of U-233 or Pu in the entire waste stream that will be sent to the site under this waste profile.

Direct sampling is the preferred method of waste characterization. Scaling factors and/or process knowledge may be used as an alternative or supportive method of characterization, however the information must be of sufficient detail and quality to justify its use.

4.3.4 Sample Analysis Methods

The analysis method used to analyze the SNM should be an industry accepted method, and analysis should only be performed by a certified lab.

Generally accepted methods of analysis include:

- Gamma Spectroscopy
- Isotopic Uranium (alpha spectroscopy)
- Isotopic Plutonium (alpha spectroscopy)
- Liquid Scintillation Counting by plutonium separation/alpha spec to determine separation yield/ gas proportional counting.
- ICP mass spectroscopy

4.3.5 Waste Generator – Special Nuclear Material Exemption Certification

The Waste Generator shall complete Attachment 1 to this procedure, Special Nuclear Material Exemption Certification, to certify that all requirements for shipment and receipt of SNM to WCS have been met. A completed and signed Attachment 1 shall be attached to the waste profile and the waste manifest.

4.3.6 WCS Review of Special Nuclear Material Exemption Certification and Verification Sampling

WCS will review and approve the SNM exemption certification documentation required in Attachment 1 using the guidelines specified in Attachment 2 for preacceptance of SNM at the WCS facility.

WCS will review and approve the SNM exemption certification documentation required in Attachment 1 using the guidelines specified in Attachment 3 for final acceptance of SNM at the WCS facility. WCS will perform verification sampling of the waste shipments when the waste arrives on site at the frequency described in Attachment 3 to this procedure.

<i>WCS</i> <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 6 of 12

5.0 RECORDS

- 5.1** Attachment 1, Special Nuclear Material Exemption Certification Special Nuclear Material Waste Acceptance Criteria (to be completed by the Waste Generator)
- 5.2** Attachment 2, Guidelines for Pre-acceptance Review of Shipments Containing Special Nuclear Material for the Purpose of Meeting the Exemption Under 10 CFR 70. (to be completed by WCS)
- 5.3** Attachment 3, Guidelines for Final Acceptance Review of Shipments Containing Special Nuclear Material for the Purpose of Meeting the Exemption Under 10 CFR 70. (to be completed by WCS)

6.0 REFERENCES

None

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 7 of 12

Attachment 1
Special Nuclear Material Exemption Certification Attachment
Special Nuclear Material Waste Acceptance Criteria
(To be completed by the Waste Generator)

If SNM (Special Nuclear Material) is present in the waste, this certification form must be completed and signed certifying the following conditions. This form and all required information must be attached to the waste profile form and the waste manifest.

1. Please check at least one of the following that applies to the waste stream:

Table 1. Maximum allowable concentrations of SNM in individual waste containers.

	Radionuclide	Maximum Concentration (g SNM/g waste)	Measurement Uncertainty (g SNM/g waste)
<input type="checkbox"/>	U-235 ¹	9.891 E-4	15%
<input type="checkbox"/>	U-235 ²	6.18 E-4	15%
<input type="checkbox"/>	U-233	4.732 E-4	15%
<input type="checkbox"/>	Pu-239	2.795 E-4	15%
<input type="checkbox"/>	Pu-241	2.15 E-4	15%

¹Less than 10 percent enrichment

²Greater than 10 percent enrichment

2. Please certify that the following conditions have been satisfied by checking each box:

- a. Concentrations of SNM in individual waste containers do not exceed the applicable values listed in the above table and SNM isotope concentrations listed in Table 1.
- b. The SNM is homogeneously distributed throughout the waste or the SNM concentrations in any contiguous mass of 450 kilograms (990 lbs) do not exceed on average the specified limits. (Based on process knowledge or testing).
- c. Waste does not contain "pure forms" of chemicals containing carbon, fluorine, magnesium, or bismuth in bulk quantities (e.g., a pallet of drums, a B-25 box). By "pure forms," it is meant that mixtures of the above elements such as magnesium oxide, magnesium carbonate, magnesium fluoride, bismuth oxide, etc. do not contain other elements. (Based on process knowledge or testing).
- d. Waste does not contain total quantities of beryllium, hydrogenous material enriched in deuterium, or graphite above one-tenth of one percent of the total weight of the waste. (Based on process knowledge, physical observations, or testing).
- e. Waste packages do not contain highly soluble forms of uranium or plutonium greater than 350 grams of uranium-235 or 200 grams of uranium-233 or plutonium. If the waste contains mixtures of plutonium, U-233 and U-235, the waste meets the sum of the fractions rule. Highly soluble forms of uranium (and plutonium) include, but are not limited to: uranium sulfate, uranyl acetate, uranyl chloride, uranyl formate, uranyl fluoride, uranyl nitrate, uranyl potassium carbonate, and uranyl sulfate. (Based on process knowledge or testing).

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 8 of 12

3. Please indicate that the following information is attached to the Radioactive Waste Profile Record by checking each box. (Note: Only the two-page SNM Exemption Certification form needs to be included with each manifest, unless an alternative sampling plan was approved at the pre-acceptance stage).
- a. Provide a description of how the waste was generated, list the physical forms in the waste, and identify the uranium chemical composition and other chemicals that may be present in the waste.
 - b. Provide a general description of how the waste was characterized (including the volumetric extent of the waste, and the number, location, type, and results of any analytical testing), the range of SNM concentrations, and the analytical results with error values used to develop the concentration ranges.
 - c. Describe the process by which the waste was generated showing that the spatial distribution of SNM must be uniform, or other information supporting spatial distribution.
 - d. Describe the methods to be used to determine the concentrations on the waste profile and manifests. These methods could include direct measurement and the use of scaling factors. Describe the uncertainty associated with sampling and testing used to obtain these concentrations.
4. Generator's certification of compliance with the SNM exemption: I certify that the information provided on this form is complete, true, and correct and is based on process knowledge, physical observations, or laboratory testing. I also certify that any supporting documentation and analytical results have been submitted to WCS.

Waste Generator Name _____

Authorized Signature

Printed Name

Title

Date

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 9 of 12

Attachment 2
Guidelines for Pre-acceptance Review of Shipments Containing Special Nuclear Material for the Purpose of Meeting the Exemption Under 10 CFR 70.
(To be completed by WCS)

Pre-acceptance review of the waste profile information shall be performed in accordance with OP-1.1. and as supplemented by this procedure when SNM is present in the waste.

A Special Nuclear Material Exemption Certification (Attachment 1 of this procedure) must be attached to the waste profile if any of the radionuclides in condition 1 (of the SNM Exemption Certification) appear on the waste profile.

The Special Nuclear Material Exemption Certification Attachment shall be reviewed and verify as follows:

Condition 1: Verify that at least one box has been checked in Condition 1 and this matches the information on the waste profile.

Condition 2: Verify that all boxes in Condition 2 have been checked.

- 2.a. The value for the checked radionuclide is less than the maximum indicated limit in Condition 1 and that no other radionuclides listed in Condition 1 appear on the waste profile.
- 2.b. Based on review of information in Condition 3.c. and the radiological data in the waste profile, verify that the SNM concentration is homogeneous. (Maximum and minimum concentrations within a factor of five times the average.) Additional sampling with documentation in the sampling plan may be required if this condition cannot be verified by process knowledge and/or initial sampling. If not checked or verified see guidelines for condition 3.b. below.
- 2.c. Verify by review of the waste profile and the information in Condition 3.a. that the listed chemicals are not present.
- 2.d. Verify by review of the waste profile and the information in Condition 3.a. that the listed materials do not exceed 0.1%.
- 2.e. Verify by review of the waste profile and the information in Condition 3.a. that the waste does not contain soluble forms of plutonium and uranium greater than the amounts indicated.

Condition 3: Verify that all boxes in Condition 3 have been checked and the required additional information is attached.

3.a. Review the information to verify that it supports the certification provided in condition 2.c., d., and e.

3.b. Verify that the Waste Generator's waste sampling and characterization methodology meets the following guidelines.

If Condition 2.b. has been verified and:

- The average concentration of the SNM radionuclide with the highest concentration is between the limit in Condition 1 and one-tenth of the limit: At least one sample for every 450 kg (990 lbs) of waste.
- The average concentration is between one-tenth and one-hundredth of the limit in Condition 1: At least one sample for every 4500 kg (9900 lbs) of waste.

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 10 of 12

- The average concentration is less than one-hundredth of the limit in Condition 1: At least one sample for every 45000 kg (99000 lbs) of waste.

If Condition 2.b. has not been verified (the distribution of SNM is not homogeneous): One sample for every 450 kg (990 lbs) of waste will be required unless it can be demonstrated by some other means (process knowledge or sampling) that there is less than 350 grams of U-235 and less than 200 grams of U-233 or Pu in the entire waste stream that will be sent to the site under this waste profile.

Direct sampling is the preferred method of waste characterization. Scaling factors and/or process knowledge may be used as an alternative or supportive method of characterization, however the information provided in 3.d. must be of sufficient detail and quality to justify its use.

If direct sampling is performed and the sample frequency is not otherwise limited by the above weights, the following is the minimum sampling frequency for acceptance at WCS:

- 20-yd³ Rolloffs: A composite sample consisting of two aliquots from different locations in the box.
- Boxes, Drums, and Smaller Containers: A composite sample consisting of one aliquot from each container to achieve the above total weight per sample.
- Debris. Sampling should be performed by taking representative cuttings, borings, or small pieces. If this is not possible, the concentration may be determined by performing surface surveys and converting the survey data to total mass of each SNM radionuclide, and then dividing by the mass of the material.

3.c. Verify that the information submitted is supported by measurements and/or other data that provides reasonable assurance that the conclusion of uniform distribution is valid. Additional documentation and sampling may be required if this condition cannot be verified by process knowledge and/or initial sampling.

3.d. Verify that the uncertainty in the methods used to obtain the SNM concentrations on the waste profile is within the limits of Condition 1. If other than direct measurements are used, additional statistical or other data should be provided to show that these correlations meet the uncertainty requirements under condition 1.

If proper justification has been given to WCS, a different sampling plan (site characterization data) may be submitted for approval at the pre-acceptance (waste profile) stage. If pre-acceptance approval is given on this basis then the entire package of information (Condition 1, 2, and 3) must again be submitted at the final acceptance (waste manifest) stage.

Approval _____
Waste Acceptance Specialist

Approval _____
Radiation Safety Officer

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 11 of 12

Attachment 3

Guidelines for Final Acceptance Review of Shipments Containing Special Nuclear Material for the Purpose of Meeting the Exemption Under 10 CFR 70. (to be completed by WCS)

The receipt and inspection of all incoming low level waste shipments shall be performed in accordance with OP-1.2.2.

Final acceptance review of the waste manifest information shall be performed in accordance with OP-1.1.2 and as supplemented by this procedure if SNM is present in the waste.

A Special Nuclear Material Exemption Certification form (Attachment 1 from this procedure) must be attached to each waste manifest. Upon receipt of the waste, perform the same review and verification of the Special Nuclear Material Exemption Certification form against each waste manifest using the guidelines for only Condition 1 and 2 of the above pre-acceptance review, unless an alternative sampling plan was approved at the pre-acceptance stage, then a full review is required.

WCS Verification Sampling

After arrival at the site, WCS will perform verification sampling of all waste containing SNM at the following frequency:

If Condition 2.b. has been verified and:

- The average concentration of the SNM radionuclide with the highest concentration is between the limit in Condition 1 and one-tenth of the limit: WCS shall obtain one sample for every 1,500 kg (3,300 lbs) of waste for the first shipment and one sample for every 4,500 kg (9,900 lbs) of waste for each shipment after the first.
- The average concentration is between one-tenth and one-hundredth of the limit in Condition 1: WCS shall obtain one sample for every 20,000 kg (44,000 lbs) of waste for the first shipment and one sample for every 45,000 kg (99,000 lbs) of waste for each shipment after the first.
- The average concentration is less than one-hundredth of the limit in Condition 1: WCS shall obtain one sample for every 450,000 kg (990,000 lbs) of waste.
- If Condition 2.b. has not been verified (the distribution of SNM is not homogeneous): One sample for every 1,500 kg (3,300 lbs) of waste for the first shipment and one sample for every 4,500 kg (9,900 lbs) of waste for each shipment after the first will be required unless it has been demonstrated by some other means (process knowledge or sampling) that there is less than 350 grams of U-235 and less than 200 grams of U-233 or Pu in the entire waste stream that will be sent to the site under this waste profile.

Acceptance sampling of the waste by WCS shall be performed in general accordance with OP-1.2.4.

Sample handling, chain of custody, and quality assurance shall be performed in accordance with RS-3.1.6.

The minimum detectable activity (MDA) at the 95 % confidence level and the 1 sigma relative error uncertainty for the various SNM radionuclides shall be as follows:

Radionuclide	MDL (pCi/gm)	Uncertainty*
--------------	--------------	--------------

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date mm/dd/yy	OP-X.Y.Z
	Special Nuclear Material Exemption Certification	Draft A	Page 12 of 12

U-235	5.0	15%
U-233	100	15%
Pu-239	100	15%
Pu-241	400	15%

*Measurement uncertainty applies when there is activity at least 5 times the detection level. The uncertainty for measurements near the detection level will be greater and likely will not be within 15%.

Analysis will be performed by a certified laboratory using industry accepted methods.

If the result of the verification sampling for the SNM radionuclides is greater/less than three times the manifest values, the customer will be contacted to resolve the discrepancy in results. For low activity waste (near the MDL), the verification sampling results may be up to a factor of ten different than the manifest values.

Approval _____
Waste Acceptance Specialist

Approval _____
Radiation Safety Officer

 WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 6/1/99	OP-1.1.1
		Revision 2	Page 1 of 9
WASTE APPROVAL AND PRE-SHIPMENT AUTHORIZATION			

1.0 PURPOSE AND SCOPE

The purpose of this procedure is to provide guidelines in the administration and communication process for approving requests for shipment(s) of waste from a generator, prior to shipment of the waste. It applies to all requests for shipment of low-level radioactive waste to the facility. It provides the mechanism for the shipper to gain authorization for waste shipment(s) to the facility. This procedure does not address specific waste acceptance criteria. Approval for shipment does not guarantee the acceptance of the waste for storage and processing at the facility. Any deviations from this procedure will be approved by the Facility Manager.

2.0 EQUIPMENT AND MATERIALS

None

3.0 PROCEDURE

3.1 PREREQUISITES

None

3.2 TRAINING

None

3.3 SPECIAL PRECAUTIONS

None

3.4 INSTRUCTIONS

3.4.1 The Customer Service Representative will process written or telephone requests from the customer concerning the shipment, receipt, storage and processing of waste. The Customer Service Representative will provide and assist in completing a waste profile, Exhibit B of the WCS Service Agreement, to ensure the waste is properly characterized. Any supporting information and or additional samples will be requested.

3.4.2 The Compliance Manager, Facility Manager or designee will evaluate the profile package and make written comments on the Waste Profile Compliance Review Sheet, Form OP-1.1.1-1.

1. The profile may be approved;

Approval:		Concurrence:	
<u>Signature on File</u>	<u>06/15/99</u>		
Operations Manager	Date		
<u>Signature on File</u>	<u>06/15/99</u>		
Compliance Manager	Date		
<u>Signature on File</u>	<u>06/01/99</u>	<u>Signature on File</u>	<u>06/15/99</u>
Radiation Safety Officer	Date	Quality Assurance Manager	Date

 WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 6/1/99	OP-1.1.1
	Waste Approval and Pre-shipment Authorization	Revision 2	Page 2 of 9

2. The profile may be approve conditionally with additional requirements or information needed noted on the form; or
3. The profile may be not approved and comments noted as why.
4. The reviewer will sign and date Waste Profile Compliance Review Sheet.
5. Those packages that are not approved or are conditionally approved will be forwarded to the customer service representative or appropriate person for completion or resolution.
6. Unconditionally approved packages will be forwarded to a clerk for processing and filing.
7. Conditionally approved packages will be forwarded to the clerk for filing after the specified conditions have been met. These packages do not require additional approval from the person who provided the conditional approval.
8. Profile packages that were not approved may be resubmitted for review after the problems or issues have been addressed.

3.4.3 Radioactive or mixed waste requires a Waste Profile Rad Review. The Radiation Safety Officer, the Facility Manager and the V.P. of Nuclear Affairs will evaluate the profile package and make written comments on the Waste Profile Rad Review.

1. This written authorization indicates that the waste described by the profile and supporting documents is acceptable to ship to WCS under the terms of the radioactive materials license and applicable regulations.
2. For material to be processed and/or stored approval must be received from the Radiation Safety Officer and either the Facility Manager or VP of Nuclear Affairs on the Waste Profile Rad Review Processing & Storage, Form OP-1.1.1-2.
3. For material with a radioactive constiuent to be disposed, the approval of the Radiation Safety Officer, Facility Manager and VP of Nuclear Affairs is required on the Waste Profile Rad Review Disposal, Form OP-1.1.1-3.
4. The RSO may designate a Waste Acceptance Specialist for profile approval.

3.4.4 After the approval is complete a Waste Safety and Compliance Sheet, Form OP-1.1.1-4, will be created that represents that waste stream.

1. This document provides the following information, as applicable, for the waste: Profile number, Generator name, Waste name, EPA waste codes, Specific Lab needs, Waste description, Hazardous constituents, compatibility information, flammability, decomposition products, prescribed treatment and disposal methods, appropriate personal protective equipment, Health effects and first aid information, small spill response measures, and radiation safety issues.
2. The Waste Safety and Compliance Sheet will be distributed to the lab and operations personnel on either a paper or electronic format.

3.4.5 After the required approvals are completed a letter will be issued to the customer indicating that WCS is in possession of all of the necessary permits and licenses to accept the waste.

 WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 6/1/99	OP-1.1.1
	Waste Approval and Pre-shipment Authorization	Revision 2	Page 3 of 9

1. A Shipment Scheduling Request and Approval Form, Form OP-1.1.1-5 will be provided to the customer for all radioactive and mixed-waste profiles for materials to be received under the Texas Radioactive Materials License.
2. For radioactive material, the shipper will submit a Shipment Scheduling Request and Approval Form, with first section completed, to notify WCS of the intent to ship material.
3. The shipper can submit requests by FAX.
4. Customer Service will verify that the profile has all required approvals, the acceptance letter has been issued and, if applicable the customer certification has been received.
5. The Waste Acceptance Specialist will verify that the materials indicated will not exceed the limits of the license by comparison to on-site and expected inventory changes of volume, activity, and grams of special nuclear material.
6. The Customer Service will decide in conjunction with the Operations Manager, area Operations Supervisor, and the Waste Acceptance Specialist of the scheduled arrival date of the waste shipment. Consideration will be given to generator need, workload at the facility, waste and container type, availability of off-loading equipment, and other similar factors that could significantly impact waste management operations at the facility.
7. The Shipment Scheduling Request and Approval Form will be completed by Customer Service and faxed to the customer. Any changes or problems will be noted on the form. If a Radioactive Manifest was not submitted with or before the Shipment Scheduling Request and Approval Form one will be requested.
8. The Operations Manager, area Operations Supervisor, and the Radiation Safety Officer shall make arrangements to ensure the appropriate facility staff will be present to meet the shipment when it arrives.

3.4.2. For RCRA loads the same form may be used to approve the shipment but routing to the RSO and Waste Acceptance Specialist is not required.

3.4.3. The shipper should submit the shipment manifest prior to shipment for approval. This will minimize unloading time. After review the Waste Acceptance Specialist will notify the customer of any problems with the manifest.

4.0 RECORDS

4.1 REQUIRED FORMS

- 4.1.1 Waste Profile Compliance Review Sheet, Form Number OP-1.1.1-1 (or equivalent)
- 4.1.2 Authorization to Ship Radioactive or Mixed Waste for Processing and/or Disposal, Form Numbers OP-1.1.1-2 and/or OP-1.1.1-3 (or equivalent)
- 4.1.3 Waste Safety and Compliance Sheet, Form Number OP-1.1.1-4 (or equivalent)
- 4.1.4 Shipment Scheduling Request and Approval, Form OP-1.1.1-5 (or equivalent)

4.2 QUALITY ASSURANCE REQUIREMENTS

- 4.2.1 Documents required or created in support of this procedure are quality assurance records.

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/1/99	OP-1.1.1
	Waste Approval and Pre-shipment Authorization	Revision 2	Page 4 of 9

4.2.2 The records will be submitted to Records Management who will ensure that each document is complete, legible and adequately identifiable.

4.2.3 The quality assurance records resulting from this procedure will be retained in accordance with "Quality Assurance Program Manual."

5.0 REFERENCES

Quality Assurance Program Manual

 <u>WASTE CONTROL SPECIALISTS LLC</u>	Operations Department	Issue Date 6/1/99	OP-1.1.1
	Waste Approval and Pre-shipment Authorization	Revision 2	Page 5 of 9

WASTE PROFILE COMPLIANCE REVIEW SHEET
Form OP-1.1.1-1

Generator: _____ Profile: _____

Date	Comment

Conditional approval: This profile is approved pending the following actions.

Conditionally approved by: _____ date: _____

Approval: This profile is approved as is.

Approved by: _____ date: _____

1. PROFILE INFORMATION			
Profile Number: WP-	Generator Name:	Waste Name:	CSR
EPA Codes:	Waste Description:	Client Requirements:	
Fingerprint parameters: sulfide screen _____ cyanide screen _____ flammability _____ density _____ to _____ lbs/yd ³ water mix _____ paint filter test _____ Other: _____			
Notes:			

2. HAZARDOUS CONSTITUENTS AND WASTE PROPERTIES			
Hazardous Constituents:			
Incompatible with:	Compatibility code	Flammability:	Products of Decomposition:

3. TREATMENT PROCESS/ROUTING	
<p style="text-align: center; margin: 0;">Onsite Treatment</p> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> Compaction <input type="checkbox"/> Neutralize <input type="checkbox"/> Deactivate <input type="checkbox"/> Repacking <input type="checkbox"/> Direct Landfill <input type="checkbox"/> Solidify <input type="checkbox"/> Macro-Encapsulate <input type="checkbox"/> Stabilize <input type="checkbox"/> Micro-Encapsulate <input type="checkbox"/> Other (see notes above) </div>	<p style="text-align: center; margin: 0;">Offsite Disposal</p> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> Fuels Blend <input type="checkbox"/> Solvent Recovery <input type="checkbox"/> Incinerate <input type="checkbox"/> Turnkey Fuels <input type="checkbox"/> Mercury Retort <input type="checkbox"/> Other (see notes above) </div>

4. PERSONAL PROTECTIVE EQUIPMENT			
<p style="text-align: center; margin: 0;">Body Protection*</p> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> CPF1 Suit <input type="checkbox"/> Dominator Suit <input type="checkbox"/> Flash Suit <input type="checkbox"/> Tyvek Suit <input type="checkbox"/> Splash protection </div>	<p style="text-align: center; margin: 0;">Foot Protection*</p> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> Chemical Boots <input type="checkbox"/> Latex Boot Covers <input type="checkbox"/> Tyvek Boot Covers </div>	<p style="text-align: center; margin: 0;">Hand Protection*</p> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> Nitrile <input type="checkbox"/> PVC Gloves <input type="checkbox"/> rubber <input type="checkbox"/> Surgical Gloves <input type="checkbox"/> Work Gloves </div>	<p style="text-align: center; margin: 0;">Respiratory*</p> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> GMA <input type="checkbox"/> GMEH <input type="checkbox"/> HEPA <input type="checkbox"/> Mercsorb <input type="checkbox"/> Supplied Air <input type="checkbox"/> Splash shield </div>

*Marked protective equipment is in addition to the standard level D work clothing required at WCS.

Health Effects and First Aid Information:
<input type="checkbox"/> wash thoroughly with soap and water if you become contaminated, If irritation occurs seek medical attention.
Small Spill Response Procedures:

5. RADIATION SAFETY ISSUES	
<input type="checkbox"/> RADIATION WORK PERMIT IS REQUIRED TO HANDLE THIS WASTE	N/A <input type="checkbox"/>
Other:	

SHIPMENT SCHEDULING REQUEST & APPROVAL

Form OP-1.1.1-5

WASTE CONTROL SPECIALISTS, L.L.C.

Andrews County Facility

TO : WCS Attn: Customer Service Scheduler

FAX: 505/394-3427

From:

Company: _____ Date: _____

Contact: _____ Phone: _____ Fax: _____

Note: Requested Arrival AM is 7AM to 10AM and PM is 11AM to 2PM. Must be at least 72 hrs in advance of shipment arriving.

Manifest No.	Profile Number	Transport Type Rail /Truck	Containers		Requested Arrival		Site Use
			Type	No.	Date	AM/PM	

Comments: _____

SITE USE BELOW THIS

Received: _____
Date/Time

Scheduled By: _____
Print Name/Initial

REQUIREMENT	INITIALS
Customer Service verification of required approvals and approval letter issued and accepted.	
Waste Acceptance Specialist verification of material within license limits and acceptable.	

Approval to Ship the above listed loads with the following exceptions:

Exceptions: _____

Approval: _____
Print/Signature Date

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/30/99	OP-1.1.2
		Revision 2	Page 1 of 12
SHIPMENT DOCUMENT REVIEW			

1.0 PURPOSE AND SCOPE

The purpose of this procedure is to describe the methods for review of the waste generator's or waste broker's shipping papers. This procedure provides a checklist to ensure that the shipping documents have been properly inspected and reviewed for accuracy. These document reviews are the responsibility of the Laboratory Manager, Customer Service Representative, and the Waste Acceptance Specialist. The Waste Acceptance Specialist will perform the radiological portion of review for any radiological shipment. Any deviations from this procedure will be approved by the Facility Manager.

2.0 EQUIPMENT AND MATERIALS

None.

3.0 PROCEDURE

3.1 PREREQUISITES

- 3.1.1 If the certification on each manifest is not signed, the shipment shall not be accepted until the certification is signed.
- 3.1.2 The following procedures may be applicable during the process of reviewing the consignor's shipping papers:
 - 1. OP 1.1.1, "Pre-Shipment Authorization"
 - 2. OP 1.2.2, "Waste Shipment Acceptance"
 - 3. EP-108, "Incident Investigation, Reporting, and Notifications"

3.2 TRAINING

- 3.2.1 The shipment document review will be performed by personnel approved by the Laboratory Manager for Hazardous Materials and by the Radiation Safety Officer for Radioactive materials.
- 3.2.2 Personnel who perform the review must be knowledgeable of the facility Waste Acceptance Criteria and appropriate state and federal regulations

3.3 SPECIAL PRECAUTIONS

None

Approval:		Concurrence	
<u>Signature on File</u>	<u>06/29/99</u>	<u>Signature on File</u>	<u>06/29/99</u>
Laboratory Manager	Date	Waste Acceptance Specialist	Date
<u>Signature on File</u>	<u>06/29/99</u>	<u>Signature on File</u>	<u>06/29/99</u>
Operations Manager	Date	Radiation Safety Officer	Date

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 2 of 12

3.4 INSTRUCTIONS (Radioactive shipments only)

3.4.1 The Waste Acceptance Specialist, or individual authorized by the Radiation Safety Officer, will conduct the shipment document review using a Radioactive Shipment Document Review Form *OP-1.1.2-1*, which identifies the specific documents to be reviewed.

Chg 1
8/28/00
DMH

1. The Waste Acceptance Specialist will fill out the Shipment Document Review form per the instruction sheet and initial and date either "satisfactory" or "unsatisfactory" for each item.
2. If the item is not applicable to the shipping papers being reviewed The Waste Acceptance Specialist will check the "N/A" (not applicable) column.

3.4.2 Unsatisfactory items will generally result in an "unsatisfactory" mark on the Shipment Document Review Form, along with applicable comments.

1. Generally, the corrective action required is notification to the waste generator or broker, who in turn will submit a copy of corrected shipping papers (e.g., manifest) with the identified problem resolved.
2. The Waste Acceptance Specialist will request that a Non-conformance Report be issued if such action is necessary.
3. The Non-conformance Report number and closure date will be entered in the "Satisfactory" column of the Shipment Document Review Form by the Waste Acceptance Specialist.

3.4.3 The Waste Acceptance Specialist will verify *the accuracy of the Uniform Hazardous Waste Manifest corresponding with the NRC 540/541 manifest and the following information upon review of the shipping papers:*

Chg 1
8/28/00
DMH

1. USDOT proper shipping name as found below or listed in 49 CFR 172.101.
 - a. Radioactive material, excepted package - article manufactured from natural or depleted uranium or natural thorium, 7, UN2910
 - b. Radioactive material, excepted package - empty packaging, 7, UN2910
 - c. Radioactive material, excepted package - instruments or articles, 7, UN2910
 - d. Radioactive material, excepted package - limited quantity of material, 7, UN2910
 - e. Radioactive material, fissile, n.o.s., 7, UN2918
 - f. Radioactive material, low specific activity LSA, n.o.s., 7, UN2912
 - g. Radioactive material, n.o.s., 7, UN2982
 - h. Radioactive material, special form n.o.s., 7, UN2974
 - i. Radioactive material, surface contaminated object, 7, UN2913
2. Hazard class per 49 CFR 172.202 (a) (2), 172.101, Column 3.
3. Shipment identification number.

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 3 of 12

- a. The shipment identification number (preceded by "UN") prescribed for the material is listed below, or is found in the 49 CFR 172.101, Hazardous Materials Table:
 - Radioactive material, empty packages (UN2910)
 - Radioactive material, limited quantity (UN2910)
 - Radioactive material, n.o.s. (UN2982)
 - Radioactive material, fissile, n.o.s. (UN2918)
 - Radioactive material, LSA, n.o.s. (UN2912)
 - Radioactive material, special form, n.o.s. (UN2974)
 - Radioactive material, instruments and articles (UN2910)
 - Radioactive material, articles depleted uranium or natural thorium (UN2910)
 - Radioactive material, SCO, (UN2913)

4. The total amount of shipment by weight and volume.
5. The quantity of packaging, including number of packages, type and volume, and specification number or certificate of compliance number as applicable. For example: (12) 55-gallon 7A drums.
6. The name of each radionuclide present [see 49 CFR 172.203 (d) (2)].
7. A description of the physical and chemical form of the radioactive material [see 49 CFR 172.203 (d) (3)].
8. The activity of the material in each package [see 49 CFR 172.203 (d) (4)].
9. The category of label applied to each package in the shipment [see 49 CFR 172.203 (d) (5)] (e.g., LSA, RADIOACTIVE WHITE-I, RADIOACTIVE YELLOW-II, or RADIOACTIVE YELLOW-III).
10. The classification of waste as Class A, Class B, or Class C clearly identified.
11. The transport index of each package with a Radioactive Yellow-II or Radioactive Yellow-III label (the radiation level in mrem per hour at 1 meter) [see 49 CFR 172.203(6), 173.403].
12. Chelating Agents.
 - a. Verify by reviewing the manifest that wastes containing more than 0.1 percent chelating agents by weight are identified and that the percent weight has been estimated. *If none are present, "NP" will be marked instead of NA on Form OP-1.1.2-1.*
13. Vehicle driver's instructions
 - a. For exclusive-use shipments, specific instructions will be furnished by the waste generator or waste broker to the driver of the transport vehicle explaining how to maintain the exclusive-use (sole-use) shipment controls.
 - b. A shipment which exceeds 200 mrem per hour at any point on the external surface of the package and has a transport index of \leq to 10 is designated as an exclusive-use shipment and conforms to 49 CFR 173.441 (B) (1).

Chg 1
8/28/00
DMM

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 4 of 12

- c. Verify from the shipping papers whether or not the shipment is exclusive-use and whether the criteria stated below are met.
 - 1. If the waste shipment is exclusive-use, verify that the driver's instructions are present.
 - 2. The 200 mrem per hour limit must not be exceeded for exclusive-use shipments unless the following conditions occur, per 49 CFR 173.441.
- d. A dose rate limit of 1,000 mrem per hour on contact with the external surface of the package is allowed if the following conditions are met: Per CFR 173.441 (1-4)
 - 1. The shipment is made in a closed transport vehicle and the package is secured during transportation;
 - 2. 200 mrem per hour is not exceeded at any point on the external surface of the car or vehicle (including top and underside of the vehicle);
 - 3. There is no loading or unloading operations between the beginning and end of the transportation;
 - 4. 10 mrem per hour is not exceeded at any point 6.6 feet (2 meters) from the vertical planes projected by the outer lateral surface of the car or vehicle or if the load is transported in an open transport vehicle, at any point 6.6 feet (2 meters) from the vertical planes projected from the outer edges of the vehicle;
 - 5. 2 mrem per hour is not exceeded in any normally occupied position in the cab of the vehicle, except that this provision does not apply to a private carriers radiation worker.

14. Shipper's certification statement.

The certification at the bottom of a shipping paper form provided by the licensee (disposal facility) is preprinted and complies with the exact wording as required by CFR 172.204.

- a. The certification must be legibly signed by a principal, officer, partner, or employee of the waste generator or waste broker (shipper or shipper's agent).
- b. The certification may be written legibly by hand, by typewriter, or by other mechanical means. In addition, it must be signed (freehand) and may also have the name of the person signing typed on the sheet.

Example: "This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation."

John B. Doe (Must be handwritten signature.)

John B. Doe (may be typed underneath handwritten signature for legibility purposes)

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 5 of 12

3.4.4 In the event any discrepancies are detected, the Waste Acceptance Specialist conducting the review will advise the Radiation Safety Officer of the extent of the discrepancy and request further instructions.

3.4.5 For discrepancies that are immediately correctable:

1. Corrections will be made by the waste generator/broker
2. The Corrective Actions section of the Shipment Document Review form will be completed by the Waste Acceptance Specialist.
3. The item will be rechecked by the Waste Acceptance Specialist or designee.
4. For items that pass the reinspection, the Waste Acceptance Specialist will check the "Satisfactory" column of the Shipment Document Review form and initial and date this column.

3.4.6. For all discrepancies that are not immediately correctable, the Waste Acceptance Specialist will request that a Non-conformance Report be issued.

1. The Non-conformance Report number and closure date (the date when the non-conformance is resolved) will be entered in the NCR Number/Date column of the form.
2. When the non-conformance has been resolved, the Waste Acceptance Specialist will enter the non-conformance report number and the date it was resolved in the NCR Number/Date Closed column of the form.

3.5 INSTRUCTIONS (Non-Radioactive shipments only)

3.5.1 The Drum Supervisor, or individual authorized by the Laboratory Manager, will conduct the shipment document review using a Non-Radioactive Shipment Document Review Form, which identifies the specific documents to be reviewed.

1. The Laboratory Manager will fill out the Shipment Document Review form per the instruction sheet and initial and date either "satisfactory" or "unsatisfactory" for each item.
2. If the item is not applicable to the shipping papers being reviewed, the Laboratory Manager will check the "N/A" (not applicable) column.

3.5.2 Unsatisfactory items will generally result in an "unsatisfactory" mark on the Shipment Document Review Form, along with applicable comments.

1. Generally, the corrective action required is notification of the waste generator or broker, who in turn will submit a copy of corrected shipping papers (e.g., manifest) with the identified problem resolved.
2. The Laboratory Manager will request that a Non-conformance Report be issued if such action is necessary.

3.5.3 The Laboratory Manager will verify the following information upon review of the shipping papers.

1. All waste received by the facility will be on a Texas Hazardous Waste Manifest. The manifest will be verified for the following information:

WCS <hr/> WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 6 of 12

- a. The generators name, address, phone number, state id number, and EPA ID number should be printed or typed in the proper spaces provided.
 - b. The transporters name, EPA id number and state id number should be printed in the proper spaces provided.
 - c. The designated disposal facilities name, address, phone number, state id number, and EPA id number should be printed in the proper space provided.
 - d. USDOT proper shipping name as listed in 49 CFR 172.101.
 - e. The total amount of shipment by weight or volume.
 - f. The quantity of packaging, including number of packages, type and volume, and specification number or certificate of compliance number as applicable. For example: (12) 55-gallon 7A drums.
 - g. The state waste code assigned to the specific waste stream(s) being shipped
 - h. The generator's designee must print his or her name, sign and date the manifest in the space provided.
 - i. The shipper or transporter must print his or her name, sign and date the manifest in the space provided.
2. Each hazardous waste stream shipped must accompany an LDR (Land Disposal Restriction) or one must be on file within the facility. The LDR will be checked for completeness and must match the original profile sent in for approval. The LDR must meet the requirements found in 40 CFR 268.7 and 268.9.
 3. Each TSCA (PCB) load that is received must be accompanied by a PCB continuation sheet if all needed information is not on manifest. The PCB continuation sheet must include the following information:
 - a. The generators name, address, and EPA id number
 - b. The type of PCB article or container
 - c. A unique id number for each article or container
 - d. Amount of PCB's in each article or container
 - e. Weight of each article or container (in kilograms)
 - f. The date in which the material was removed from service
 4. The waste stream must be approved prior to acceptance by the facility
- 3.5.4 In the event any discrepancies are detected, the Laboratory Manager conducting the review will advise the appropriate personnel of the extent of the discrepancy and request further instructions.
- 3.5.5 For discrepancies that are immediately correctable:
1. Corrections will be made by the waste generator/broker
 2. The Corrective Actions section of the Shipment Document Review form will be completed by the Laboratory Manager.

 WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 7 of 12

3. The item will be rechecked by the Laboratory Manager or designee.
 4. For items that pass the reinspection, the Laboratory Manager will check the "Satisfactory" column of the Shipment Document Review form and initial and date this column.
- 3.5.6. For all discrepancies that are not immediately correctable, the Laboratory Manager will request that a Non-conformance Report be issued.
1. The Non-conformance Report number and closure date (the date when the non-conformance is resolved) will be entered in the NCR Number/Date column of the form.
 2. When the non-conformance has been resolved, the Laboratory Manager will enter the non-conformance report number and the date it was resolved in the NCR Number/Date Closed column of the form.

4.0 RECORDS

4.1 REQUIRED FORMS

4.1.1 Radioactive Shipment Document Review Form Number OP 1.1.2-1

4.1.2 Non-Radioactive Shipment Document Review Form Number OP1.1.2-2

4.2 COMPLETION AND APPROVAL REQUIREMENTS

The Shipment Document Review form will be completed by the Waste Acceptance Specialist for all radiological shipments conducting the review of the shipping papers. It will be reviewed and approved by the Radiation Safety Officer if the shipment includes radioactive material.

4.3 QUALITY ASSURANCE REQUIREMENTS

4.3.1 Documents required or created in support of this procedure are quality assurance records. Shipment Document Review forms notifications to or authorizations from the waste generator (shipper), or any other correspondence or memos relating to resolution of discrepancies, repairs, or other matters will be included in the quality assurance records package.

4.3.2 The records will be submitted to Records Management who will ensure that each document is complete, legible, and adequately identifiable. The quality assurance records resulting from this procedure will be retained in accordance with Quality Assurance Program Manual.

5.0 REFERENCES

10 CFR Part 20.2006, Federal Regulations for Transfer for Disposal and Manifests

49 CFR Parts 100-177, Federal Regulations for Transportation

49 CFR Parts 178-199, Federal Regulations for Transportation

40 CRF Parts 761 (TSCA)

40 CRF Parts 268.7 & 268.9 (RCRA)

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 8 of 12

Quality Assurance Program Manual

**RADIOACTIVE SHIPMENT DOCUMENT REVIEW
FORM NUMBER OP 1.1.2-1**

Each of the items listed below must be deemed SATISFACTORY prior to the waste shipment being authorized for emplacement in a disposal unit. If an UNSATISFACTORY is checked, it must be documented and corrected prior to release.

SHIPPER NAME : _____ Manifest #: _____

SHIPMENT RECEIVED (DATE) : _____ Time : _____

INSPECTION RESULTS

ITEM	SATISFACTORY INITIALS/DATE	UNSATISFACTORY INITIALS/DATE	NCR NUMBER/ DATE CLOSED	N/A
Shipping Name				
Hazard Class				
Shipment ID #				
Shipment Total Weight or Volume				
Radionuclide(s)				
Physical and Chemical Description				
Activity				
Package Information: (Type, Quantity, Number, Volume)				
Transport Index				
Fissile Shipment Class I, II, III				
Driver's Instructions				
Chelating Agents				
Shipper's Certification Statement				

Discrepancies: _____

NCR Number: _____

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 10 of 12

RADIOACTIVE SHIPMENT DOCUMENT REVIEW
 FORM NUMBER OP 1.1.2-1
 (- Page 2 -)

CORRECTIVE ACTIONS: _____

COMMENTS: _____

Completed by:

Waste Acceptance Specialist _____ **Date** _____

Shipment documentation is acceptable.

Radiation Safety Officer _____ **Date** _____

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 11 of 12

**INSTRUCTIONS FOR RADIOACTIVE SHIPMENT DOCUMENT REVIEW
FORM NUMBER OP 1.1.2-1**

When completing the Shipment Document Review, verify that the entry is appropriate (e.g., in Instruction 6: If Cs-137 was listed on the manifest, this would indicate a typographical error). Also, check the information for accuracy (e.g., in Instruction 8: A shipment with a total activity of 5,000 Ci Co-60 would be questionable).

1. Verify that the proper shipping name is listed on the manifest (e.g., radioactive material, n.o.s.).
2. Verify that the proper hazard class is listed on the manifest (e.g., radioactive material-limited quantity).
3. Verify that the proper shipment identification number was listed on the manifest (e.g., radioactive material, n.o.s. UN2982).
4. Verify that the shipment manifest has a unique shipment identification number listed.
5. Verify that the shipment total weight or volume is listed in the manifest (e.g., 3500 kg or 350 liters).
6. Verify that the proper radionuclide abbreviated names are listed in the manifest (e.g., Mn-54, Fe-59, Cs-137, Pu-239).
7. Verify that the proper physical and chemical forms are listed in the manifest (e.g., Metallic Oxides).
8. Verify that the activity of the shipment is listed in the manifest (e.g., 500 mBq).
9. Verify that the quantity of packaging, including the number of packages, type of packages, volume or weight, and specification number or certificate of compliance number is listed on the manifest [e.g., (12) 55-gallon DOT 7A drums].
10. Verify that the appropriate transport index was used on the manifest (e.g., 1 meter reading in mrem/hr.)
11. Verify that the appropriate fissile class was used on the manifest (e.g., "Fissile Exempt").
12. Verify that the manifest includes specific driver's instructions for exclusive-use shipments.
13. Verify that the bottom of the manifest is preprinted with the following certification statement or similar words:

"This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the U.S. Department of Transportation."
14. Verify that the shipper's certification signature is legible.

**NON RADIOACTIVE SHIPMENT DOCUMENT REVIEW
FORM NUMBER OP 1.1.2-2**

Each of the items listed below must be deemed SATISFACTORY prior to the waste shipment being authorized for emplacement in a disposal unit. If an UNSATISFACTORY is checked, it must be documented and corrected prior to release.

GENERATOR NAME : _____ Manifest #: _____
SHIPMENT RECEIVED DATE : _____ Time : _____
DOCUMENT REVIEW DATE: _____

INSPECTION RESULTS

ITEM	SATISFACTORY INITIALS	UNSATISFACTORY INITIALS	NONCONFORMANCE	N/A
Generator Information				
Transporter information				
EPA ID				
Designated facility information				
Proper shipping name				
Shipment total weight				
Piece count				
State waste codes				
Generators signature				
Transports signature				
LDR (If Hazardous)				
PCB continuation sheet (if TSCA Regulated)				
Waste stream approval				

Have nonconformance reports been issued? No Yes - NCR# _____

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 6/21/99	OP-1.1.2
	Shipment Document Review	Revision 2	Page 13 of 12

**INSTRUCTIONS FOR NON RADIOACTIVE SHIPMENT DOCUMENT REVIEW
FORM NUMBER OP 1.1.2-2**

When completing the Shipment Document Review, verify that the entry is appropriate

1. Verify that the generator information is filled out properly.
2. Verify that the Shipper information is filled out properly.
3. Verify that the designated facility information is filled out properly.
4. Verify that the proper shipping name is correct.
5. Verify that the shipment total weight or volume is listed in the manifest (e.g., 3500 kg or 350 liters).
6. Verify that the piece count is correct.
7. Verify that the proper state waste codes are on the manifest.
8. Verify that generators signature is present.
9. Verify that the transporters signature is present.
10. Verify that the LDR is filled out properly.
11. Verify that the PCB continuation sheet is filled out properly if load is TSCA regulated.
12. Verify that the waste stream is approved.
13. Verify that waste profile conforms to the profile pre-approved prior to the shipment's arrival.

**SHIPMENT DOCUMENT REVIEW
FORM NUMBER OP 1.1.2-1**

Each of the items listed below must be deemed SATISFACTORY prior to the waste shipment being authorized for emplacement in a disposal unit. If an UNSATISFACTORY is checked, it must be documented and corrected prior to release.

SHIPPER NAME : _____ Manifest #: _____

SHIPMENT RECEIVED (DATE) : _____ Time : _____

INSPECTION RESULTS

ITEM	SATISFACTORY INITIALS/DATE	UNSATISFACTORY INITIALS/DATE	NCR NUMBER/ DATE CLOSED	N/A
Shipping Name				
Hazard Class				
Shipment ID #				
Shipment Total Weight or Volume				
Radionuclide(s)				
Physical and Chemical Description				
Activity				
Package Information: (Type, Quantity, Number, Volume)				
Transport Index				
Fissile Shipment Class I, II, III				
Driver's Instructions				
Chelating Agents				
Shipper's Certification Statement				

Discrepancies: _____

NCR Number: _____

SHIPMENT DOCUMENT REVIEW
FORM NUMBER OP 1.1.2-1
(- Page 2 -)

CORRECTIVE ACTIONS:

COMMENTS:

Completed by:

Waste Acceptance Specialist

Date

Shipment documentation is acceptable.

Radiation Safety Officer

Date

**INSTRUCTIONS FOR SHIPMENT DOCUMENT REVIEW
FORM NUMBER OP 1.1.2-1**

When completing the Shipment Document Review, verify that the entry is appropriate (e.g., in Instruction 6: If Cs-137 was listed on the manifest, this would indicate a typographical error). Also, check the information for accuracy (e.g., in Instruction 8: A shipment with a total activity of 5,000 Ci Co-60 would be questionable).

1. Verify that the proper shipping name is listed on the manifest (e.g., radioactive material, n.o.s.).
2. Verify that the proper hazard class is listed on the manifest (e.g., radioactive material-limited quantity).
3. Verify that the proper shipment identification number was listed on the manifest (e.g., radioactive material, n.o.s. UN2982).
4. Verify that the shipment manifest has a unique shipment identification number listed.
5. Verify that the shipment total weight or volume is listed in the manifest (e.g., 3500 kg or 350 liters).
6. Verify that the proper radionuclide abbreviated names are listed in the manifest (e.g., Mn-54, Fe-59, Cs-137, Pu-239).
7. Verify that the proper physical and chemical forms are listed in the manifest (e.g., Metallic Oxides).
8. Verify that the activity of the shipment is listed in the manifest (e.g., 500 mBg).
9. Verify that the quantity of packaging, including the number of packages, type of packages, volume or weight, and specification number or certificate of compliance number is listed on the manifest [e.g., (12) 55-gallon DOT 7A drums].
10. Verify that the appropriate transport index was used on the manifest (e.g., 1 meter reading in mrem/hr.)
11. Verify that the appropriate fissile class was used on the manifest (e.g., "Fissile Exempt").
12. Verify that the manifest includes specific driver's instructions for exclusive-use shipments.
13. Verify that the bottom of the manifest is preprinted with the following certification statement or similar words:

"This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the U.S. Department of Transportation."
14. Verify that the shipper's certification signature is legible.

NON RADIOACTIVE SHIPMENT DOCUMENT REVIEW
FORM NUMBER OP 1.1.2-2

Each of the items listed below must be deemed SATISFACTORY prior to the waste shipment being authorized for emplacement in a disposal unit. If an UNSATISFACTORY is checked, it must be documented and corrected prior to release.

GENERATOR NAME : _____ Manifest #: _____

DOCUMENT REVIEW DATE: _____

DOCUMENT REVIEW:

MANIFEST or DOCUMENT ITEM	INITIAL REVIEW STATUS OF ITEM	Resolved By/Date:	NEW STATUS (If Applicable)	COMMENTS
Generator US EPA ID Number	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
Generator Information	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
Transporter Information	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
Designated Facility information	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
Proper Shipping Name	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
Piece Count	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
Shipment Weight or Volume	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
State waste codes	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
Generators signature	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
Transports signature	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
LDR (If Hazardous)	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
PCB Continuation Sheet (if TSCA Regulated)	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
International Manifest	<input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input type="checkbox"/> N/A		<input type="checkbox"/> Complete	
	Initial Review by:	Final Review (if applicable) by:		

Have nonconformance reports been issued? No Yes - NCR# _____

Explain: _____

 WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 01/02/98	OP-1.2.1
		Revision 0	Page 1 of 4
ARRIVING VEHICLE SAFETY INSPECTION			

1.0 PURPOSE AND SCOPE

The purpose of this procedure is to provide guidance in performing safety inspections on vehicles arriving at the facility. This procedure applies to all waste shipment vehicles arriving at the facility. Safety inspections for arriving vehicles are the responsibility of the Operations Manager with support from the Radiation Safety staff. Any deviations from this procedure will be approved by the Facility Manager.

2.0 EQUIPMENT AND MATERIALS

2.1 OPERATING EQUIPMENT

None.

2.2 SPECIAL EQUIPMENT

Approved ladder

2.3 SAFETY EQUIPMENT

Safety glasses

Steel-toed shoes

3.0 PROCEDURE

3.1 PREREQUISITES

3.1.1 Prior to the implementation of this procedure, a Radiation Safety Technician (RST) will perform radiation and contamination surveys on the vehicle per RS 3.1.7, "Incoming Vehicle Surveys."

3.1.2 The RST will review the outgoing shipment surveys performed by the waste generator/broker for consistency with arrival surveys.

3.2 TRAINING

3.2.1 Safety training performed in accordance with OP 1.1.4, "On-Site Safety Training."

3.3 SPECIAL PRECAUTIONS

Approval:	Concurrence		
 	<u>Signature on File</u>		
<u>1/28/98</u>		Operations Manager	Date
<u>Signature on File</u>	<u>1/28/98</u>	<u>Signature on File</u>	
<u>1/28/98</u>		Radiation Safety Officer	Date
Facility Manager	Date		

 WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 01/02/98	OP-1.2.1
	Arriving Vehicle Safety Inspection	Revision 0	Page 2 of 4

3.3.1 Wear safety glasses and steel-toed shoes when inspecting vehicles.

3.4 INSTRUCTIONS

3.4.1 The purpose of the inspection is to ensure only vehicles in proper working order are allowed access to the site.

3.4.2 The inspection of an arriving vehicle will be conducted by personnel authorized by the Operations Foreman or Supervisor.

3.4.3 In the event a vehicle has safety concerns, the Operations Manager will be notified.

3.4.4 An Arriving Vehicle Safety Inspection Log will be maintained by Operations foreman/Supervisor. Each inspection will be logged upon its completion..

4.0 RECORDS

4.1 REQUIRED FORMS

Arriving Vehicle Safety Inspection Log, Form Number OP-1.2.1-1

4.2 COMPLETION AND APPROVAL REQUIREMENTS

4.2.1 The Arriving Vehicle Safety Inspection Log will be kept and maintained by the Operations Foreman/Supervisor performing the inspection.

4.3 QUALITY ASSURANCE REQUIREMENTS

4.3.1 Documents required or created in support of this procedure are quality assurance records.

1. The Arriving Vehicle Safety Inspection Log will be kept and maintained by the by the Operations Foreman/Supervisor. Log entries will include, at a minimum, a unique identifier for the vehicle, the date the inspection is completed, and any noted discrepancies.

4.3.2 The records will be submitted to Records Management who will ensure that each document is complete, legible, and adequately identifiable.

4.3.3 The quality assurance records resulting from this procedure will be retained in accordance with the Quality Assurance Program Manual.

5.0 REFERENCES

49 CFR Parts 100-179

49 CFR Parts 390-397

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 01/02/98	OP-1.2.1
	Arriving Vehicle Safety Inspection	Revision 0	Page 3 of 4

Quality Assurance Program Manual

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 01/02/98	OP-1.2.1
	Arriving Vehicle Safety Inspection	Revision 0	Page 4 of 4

ARRIVING VEHICLE SAFETY INSPECTION LOG
FORM NUMBER OP 1.2.1-1

WCS <hr/> WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 01/02/98	OP-1.2.1
	Arriving Vehicle Safety Inspection	Revision 0	Page 5 of 4

**INSTRUCTIONS FOR ARRIVING VEHICLE SAFETY INSPECTION LOG
FORM NUMBER OP-1.2.1-1**

The Arriving Vehicle Safety Inspection Log will be kept and maintained by an Operations Foreman/Supervisor as described below:

1. Tracking Number - Enter the unique number assigned to each shipment of waste received.
2. Transporter Name - Enter the name of the company owning or operating the vehicle.
3. Vehicle Identification - Enter the vehicle identification number as on the vehicle's registration.
4. Inspection Date - Enter the date..
5. Noted Discrepancies - Briefly list and described discrepancies found during this inspection.
6. Initial - The person making the log entry will initial after making each log entry.

**ARRIVING VEHICLE SAFETY INSPECTION LOG
FORM NUMBER OP-1.2.1-2**

TRACKING NUMBER	TRANSPORTER NAME	VEHICLE IDENTIFICATION	INSPECTION DATE	NOTED DISCREPANCIES

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operating Procedure	Effective Date 8/8/00	OP 1.2.2
		Revision 1	Page 1 of 8
WASTE SHIPMENT ACCEPTANCE			

1.0 PURPOSE AND SCOPE

The purpose of this procedure is to document methods for receipt and inspection of incoming vehicles and waste packages, which is performed to assure that waste shipments meet facility waste acceptance criteria and are in compliance with applicable regulations and license criteria. This procedure applies to low-level radioactive waste (LLW) shipped in barrels, boxes, or other appropriate containers. This procedure provides a check list to ensure that a LLW shipment has been properly inspected and surveyed for contamination, and that the manifest is reviewed and waste classification verified before acceptance.

2.0 EQUIPMENT AND MATERIALS

2.1 OPERATING EQUIPMENT

None.

2.2 RADIATION DETECTION INSTRUMENTATION

Personal (breathing zone) air samplers

Portable air sampler

Portable contamination and radiation detection instruments

2.3 SAFETY EQUIPMENT

2.3.1 Gloves

2.3.2 Coveralls

2.3.3 Safety glasses

2.3.4 Steel-toed shoes

Approval:		Concurrence	
		<u>Original signed by Donald Conner</u>	<u>8/8/00</u>
		Health and Safety Officer	Date
<u>Original signed by Gus W. Copeland</u>	<u>5/4/00</u>	<u>Original signed by David Kania</u>	<u>8/8/00</u>
Operations Manager	Date	Radiation Safety Officer	Date

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operating Procedure	Effective Date 8/8/00	OP 1.2.2
	Waste Shipment Acceptance	Revision 1	Page 2 of 8

3.0 RESPONSIBILITIES

The Waste Acceptance Specialist is responsible for the performance of this procedure. The Radiation Safety officer is responsible for final review of the Waste Shipment Acceptance Checklist and acceptance of the waste. The Radiation Safety staff is responsible for performing surveys required by this procedure and assisting in off-loading activities.

4.0 PROCEDURE

4.1 PREREQUISITES

4.1.1 The following procedures are applicable for determining the proper acceptance of waste and must be conducted before this procedure is implemented:

1. RS -3.1.7, "Incoming Vehicle Surveys"
2. RS-3.1.6, "Surveys of Incoming and Outgoing Shipments"
3. OP-1.2.3, "Waste Classification Verification"
4. OP-1.1.2, "Shipment Document Review"
5. OP-1.1.1, "Pre-shipment Authorization"
6. OP-1.2.1, "Arriving Vehicle Safety Inspection"
7. OP-1.2.6, "Waste Shipment Off-loading"

4.1.2 The following procedures may, under specific circumstances, be applicable during the process for determining the acceptance of the waste:

1. OP-1.2.4, "Waste Verification Testing"
2. OP-1.2.5, "Waste Containers Not Acceptable Upon Arrival"
3. OP-1.2.8, "Handling Damaged Waste Containers"
4. OP-1.2.9, "Overpacking/Repackaging Damaged Waste Containers"
5. OP-1.2.10, "Non-Routine Operations"

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operating Procedure	Effective Date 8/8/00	OP 1.2.2
	Waste Shipment Acceptance	Revision 1	Page 3 of 8

4.1.3 A Radiation Safety Technician (RST) will be present to perform radiation and contamination surveys and to check for compliance with operating licenses and to correlate packages to the manifest. Waste shipment acceptance activities will not commence until the RST has completed all appropriate radiological surveys and is present to monitor radiation levels.

4.1.4 Safety training will be according to OP-1.1.4, "On-Site Training." Documentation of training shall be placed in the employee's training record.

4.2 SPECIAL PRECAUTIONS

4.2.1 Care should be taken when opening the back doors of a closed waste transport vehicles. If there is any sign of leakage, unusual stains, concentrations of dirt, damaged waste packages, unusual odors, etc., the inspection will be stopped and the Radiation Safety Officer will be notified.

4.2.2 Gloves, coveralls, safety glasses, and steel-toed shoes will be worn when entering closed trailers. Anti-C apparel, if required, will be in accordance with Radiation Safety staff instructions.

4.2.3 Inspection will normally occur after the waste container has been unloaded per OP-1.2.6, "Waste Shipment Off-loading".

4.2.4 To reduce radiation exposure, Radiation Safety may determine that the visual inspection should be performed from a remote location. Containers with a contact dose rate of 200 mR/hr or greater should be visually inspected remotely.

4.3 INSTRUCTIONS

4.3.1 The Waste Acceptance Specialist will complete the acceptance checklist and verify that the prerequisites listed in Section 4.1 have been met or that deficiencies have been noted and corrective actions have been approved and implemented.

4.3.2 The waste shipment will be visually inspected by the Waste Acceptance specialist and Radiation Safety staff to ensure that waste packages comply with facility and license requirements and that proper handling techniques can be applied.

1. For waste packages with a contact dose rate of 200 mR/hr or greater, self-reading dosimeters will be required and will be checked frequently. Visual inspection may be done remotely using binoculars, if appropriate.

2. The Radiation Safety Officer will specifically approve any movement of material if any of the actions required to move the waste package could pose an unanticipated external radiation hazard to personnel.

4.3.3 The inspection includes the following:

WCS <hr/> WASTE CONTROL SPECIALISTS LLC	Operating Procedure	Effective Date 8/8/00	OP 1.2.2
	Waste Shipment Acceptance	Revision 1	Page 4 of 8

1. Visually verify container integrity by looking for signs of leakage, rust around the closure head, loose lids, bulging or swollen containers, or other unusual signs.
 2. Verify that each waste package is properly labeled and marked in accordance with the license requirements, 49 CFR 173, and 25 TAC 289.202 (cc), (dd), and (ee). The waste classification must be durably marked on the top of the container and must be clearly legible.
 3. Verify that the quantity and types of waste containers are as stated on the manifest.
 4. Verify that the containers are capable of being safely handled by on-site equipment . Review the container weights listed on the manifest to ensure they are within the limitations of the equipment that will be used to move them.
- 4.3.4 The Waste Acceptance Specialist will be notified immediately of any deficiencies identified during the acceptance inspection.
- 4.3.5 Deficiencies on a Nonconformance Report (NCR).
1. The NCR number and closure date will be entered in the unsatisfactory column of the Waste Shipment Acceptance Checklist by the Waste Acceptance Specialist.
 2. A copy of the NCR will be provided to the by Waste Acceptance Specialist and the waste generator will be notified.
 3. If no deficiencies are found, the inspector's initials and date will be entered in the "Satisfactory" column on the checklist.
- 4.3.6 If loss of container integrity is found, the inspection will be stopped.
1. Radiation Safety will evaluate the potential for the spread of contamination or exposure to facility workers and will take immediate necessary actions to minimize any potential danger.
 2. The following personnel will be notified as soon as practical:
 - a. Health and Safety Manager
 - b. Operations Manager
 - c. Waste Acceptance Specialist
 - d. Radiation Safety Officer
 3. The requirements of OP 1.2.5, "Waste Containers Not Acceptable Upon Arrival" , OP 1.2.8, "Handling Damaged Waste Containers", and OP 1.2.9, " Overpacking/Repackaging Damaged Waste Containers", will be implemented as necessary.
- 4.3.7 If there is evidence of a discrepancy between the waste received and the shipping manifest, verification testing is required.

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operating Procedure	Effective Date 8/8/00	OP 1.2.2
	Waste Shipment Acceptance	Revision 1	Page 5 of 8

1. The waste will be taken to the PermaCon enclosure in the radwaste processing area for testing.

4.3.8 The waste will not be accepted unless all deficiencies and NCRs are closed out after the waste verification testing is completed.

4.3.9 Acceptance will be indicated by the signatures of the Waste Acceptance Specialist and the Radiation Safety Officer on the Waste Shipment Acceptance Checklist.

5.0 RECORDS

5.1 REQUIRED FORMS

Waste Shipment Acceptance Checklist, Form Number OP 1.2.2-1

5.2 COMPLETION AND APPROVAL REQUIREMENTS

Visual inspections will be completed by WCS inspection personnel. The Waste Shipment Acceptance Checklist will be completed by Waste Acceptance Specialist. It will be reviewed and approved by the Radiation Safety Officer.

5.3 QUALITY ASSURANCE REQUIREMENTS

5.3.1 Documents required or created in support of this procedure are quality assurance records. The Waste Shipment Acceptance Checklist, NCRs, correspondence, or memos relating to resolution of discrepancies, repairs, etc., will be included in the quality assurance records package.

5.3.2 The records will be submitted to Records Management who will ensure each document is complete, legible, and adequately identifiable.

5.3.3 The quality assurance records resulting from this procedure will be retained in accordance with Quality Assurance Program Manual.

6.0 REFERENCES

25 TAC 289.202, Standard for Protection against Radiation
49 CFR 173, General Requirements for Shipments and Packaging
Waste Acceptance Criteria
Quality Assurance Program Manual

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operating Procedure	Effective Date 8/8/00	OP 1.2.2
	Waste Shipment Acceptance	Revision 1	Page 6 of 8

**WASTE SHIPMENT ACCEPTANCE CHECKLIST
FORM NUMBER OP 1.2.2-1**

Each of the items listed below must be initialed as being satisfactory by the Waste Acceptance Specialist and signed by the Radiation Safety Officer before the waste can be accepted. If an unsatisfactory is initialed, the deficiency must be resolved through use of a Nonconformance Report.

WASTE SHIPPER/GENERATOR _____ TRACKING NUMBER _____

The following procedures have been performed and completed.

Procedure No.	Procedure Title	Satisfactory	Unsatisfactory	
OP 1.1.1	Preshipment Authorization			
OP 1.2.1	Arriving Vehicle Safety Inspection			
OP 1.1.2	Shipment Document Review			
RS-3.1.6	Surveys of Incoming and Outgoing Shipments			
RS 3.1.7	Incoming Vehicle Surveys			
OP 1.2.3	Waste Classification Verification			
Criteria for Visual Inspection		Satisfactory	Unsatisfactory	
		Initials/Date	NCR Number	Initials/Date Closed
a.	Container integrity is acceptable.			
b.	Containers are properly labeled and marked.			
c.	Container numbers and types are as stated on manifest.			
d.	On-site equipment can handle containers.			

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operating Procedure	Effective Date 8/8/00	OP 1.2.2
	Waste Shipment Acceptance	Revision 1	Page 7 of 8

**WASTE SHIPMENT ACCEPTANCE CHECKLIST
FORM NUMBER OP 1.2.2-1 (cont.)**

Is waste verification testing per OP 1.2.4 required? (yes or no) _____		
If required, date completed _____		
Comments: _____ _____ _____ _____		
Waste shipment is acceptable for storage and processing.		
_____ Radiation Safety Officer	_____ Waste Acceptance Specialist	_____ Date

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operating Procedure	Effective Date 8/8/00	OP 1.2.2
	Waste Shipment Acceptance	Revision 1	Page 8 of 8

**INSTRUCTIONS FOR
WASTE SHIPMENT ACCEPTANCE CHECKLIST
FORM NUMBER OP 1.2.2-1**

The Waste Shipment Acceptance Checklist will be completed by the Waste Acceptance Specialist. The instructions for completing the Waste Shipment Acceptance Checklist are as follows:

1. Fill in the name of the waste shipper/generator (e.g., John R. Doe, ACME Waste Brokers).
2. Fill in the unique tracking number associated with the waste shipment.
3. Place a mark in the appropriate box, "Satisfactory" or "Unsatisfactory," for performing and completing OP 1.1.1, "Pre-Shipment Authorization."
4. Place a mark in the appropriate box, "Satisfactory" or "Unsatisfactory," for performing and completing OP 1.2.1, "Arriving Vehicle Safety Inspection."
5. Place a mark in the appropriate box, "Satisfactory" or "Unsatisfactory," for performing and completing OP 1.1.2, "Shipment Document Review."
6. Place a mark in the appropriate box, "Satisfactory" or "Unsatisfactory," for performing and completing OP 3.1.6, "Surveys of Incoming and Outgoing shipments."
7. Place a mark in the appropriate box, "Satisfactory" or "Unsatisfactory," for performing and completing RS 3.1.7, "Incoming Vehicle Surveys."
8. Place a mark in the appropriate box, "Satisfactory" or "Unsatisfactory," for performing and completing OP 1.2.3, "Waste Classification Verification."
9. Place your initials and date in the appropriate box, "Satisfactory" or "Unsatisfactory," for container integrity. If the results were unsatisfactory, fill in the NCR Number.
10. Place your initials and date in the appropriate box, "Satisfactory" or "Unsatisfactory," for containers being properly labeled and marked. If the results were unsatisfactory, fill in the NCR Number.
11. Place your initials and date in the appropriate box, "Satisfactory" or "Unsatisfactory," for container numbers and types stated on the manifest. If the results were unsatisfactory, fill in the NCR Number.
12. Place your initials and date in the appropriate box "Satisfactory" or "Unsatisfactory" for on-site equipment capable of handling containers. If the results were unsatisfactory, fill in the NCR Number.
13. Answer "Yes" or "No" (see para. 3.4.6 and per OP-1.2.4. If "Yes," fill in the date completed.
14. Enter any applicable comments.
15. The Radiation Safety Officer Waste Acceptance Specialist will sign and date the completed form indicating that the waste shipment is acceptable for receipt.

WCS <hr/> WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 3/15/99	OP-1.2.4
	Waste Verification Testing	Revision 2	Page 2 of 9

2.3 RADIATION DETECTION INSTRUMENTATION

- Appropriate air sampler
- Beta-Gamma Portable Survey Meter
- Alpha Portable Survey Meter

2.4 SAFETY EQUIPMENT

- Anti-contamination clothing as prescribed in Radiation Work Permit (RWP).
- Respiratory protection equipment as prescribed in RWP.

- Leather gloves

- Chemical-resistant gloves

- Spill kit (e.g., spark-resistant tools, absorbent, spill booms, overpack drum, anti-contamination clothing, respiratory protection)

- Lead aprons or shielding as prescribed in RWP

3.0 PROCEDURE

3.1 PREREQUISITES

- 3.1.1 Prior to shipping the radioactive waste to the facility, the waste generator or broker will verify the form and content of the waste. Each shipment will be inspected at the point of origin as required by the generators license.

- 3.1.2 A Radiation Safety Technician (RST) will be present to perform radiation and contamination surveys and ensure:

1. Personnel have required dosimetry
2. Verify the proper placement of dosimetry
3. Insure temporary shielding is installed as required
4. Insure time limits, distance, or other engineering controls are in place as appropriate.

- 3.1.3 Off-loading activities will not commence until a Radiation Safety Technician has completed all necessary radiological surveys and is present to monitor radiation levels.

- 3.1.4 All reasonable efforts will be made to avoid opening containers and to minimize personnel exposures. Efforts are to include double checking waste manifest information, seeking additional information from inspectors at the waste generator, and consulting directly with the waste generator in the event of a discrepancy.

- 3.1.5 Containers should not be punctured or destructively opened in any way.

 WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 3/15/99	OP-1.2.4
	Waste Verification Testing	Revision 2	Page 3 of 9

3.1.6 Containers containing solidified liquids or resins will be subject to compliance with the freestanding liquids criteria found in the WCS waste acceptance criteria.

3.1.7 If free liquid is suspected within a waste container of solidified material, the package may be tested by striking the external surface with a blunt striking device. In most cases, solidified material will exhibit the same tone on all surfaces. Should any portion exhibit a different tone, it could indicate that solidification was incomplete, and that liquid may be present in a void space

3.1.8 If the container is bulging, Radiation Safety shall notify the Operations Supervisor and barricade the immediate area.

NOTE: A bulging container indicates possible pressurization. The Operations Supervisor and the Radiation Safety Supervisor will determine the method to be used for handling bulging containers.

3.1.9 The following procedures may be applicable during the waste verification testing process:

OP-1.2.5, "Waste Containers Not Acceptable Upon Arrival"

OP 1.2.8, "Handling Damaged Waste Containers"

OP 1.1.2, "Shipment Document Review "

OP 1.1.1, "Pre-Shipment Authorization"

OP 1.2.2, "Waste Shipment Acceptance"

OP 1.2.12, "On-Site Generated Waste Disposal"

OP 1.2.10, "Non-Routine Operations"

3.2 TRAINING

3.2.1 Site personnel required to perform an on-site inspection will be trained as appropriate for the method and personal protective equipment used.

3.2.2 Safety training will be conducted in accordance with OP 1.1.4, "On-Site Safety Training."

3.2.3 Personnel operating equipment and vehicles at the disposal facility will have valid certification in all operations and safety training for the types of vehicles they are operating.

3.2.4 Documentation of training shall be placed in the employee's training record.

3.3 SPECIAL PRECAUTIONS

3.3.1 Anti-contamination clothing and respiratory equipment will be worn as required by RWP.

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 3/15/99	OP-1.2.4
	Waste Verification Testing	Revision 2	Page 4 of 9

- 3.3.2 Keep ALARA concepts in mind at all times. Minimize time of exposure, add shielding, and maximize distance as much as possible.
- 3.3.3 Be aware of the potential for biological and chemical constituents as well as radiological conditions. The primary reason for inspecting these containers is to ensure that enough absorbent material is in place and, for biological wastes, that an inner container exists.
- 3.3.4 Never use hands to move material in containers that hold syringes, broken glass, or other sharp articles. Sharp articles should not be packaged in containers unless they are crushed.
- 3.3.5 Under no circumstances will any waste package(s) containing radioactive material be opened without permission of the Waste Acceptance Specialist or the Radiation Safety Officer.
- 3.3.6 In the event a package is visibly leaking prior to the waste container inspection, the leakage will be contained and absorbed. Inspection will not take place until directed by the Radiation Safety Technician with concurrence from the Radiation Safety Officer.
- 3.3.7 Materials to contain and absorb liquids will be readily available.
- 3.3.8 Air sampling will be required when performing inspections that involve opening or puncturing containers.
- 3.3.9 Outside inspection operations will not take place during periods of precipitation, or when continuous wind speeds exceed 10 mph. A Radiation Safety Technician will postpone the package inspection requirement under those conditions or move package to a sheltered location such as BSA-1.

3.4 INSTRUCTIONS

- 3.4.1 The Waste Acceptance Specialist or the Radiation Safety Officer will determine the level of investigation based on the criteria stated in Section 1.0 Purpose and Scope. The following considerations shall be made:
 1. Waste should not be packaged in cardboard or fiberboard boxes.
 2. Liquid waste must be solidified or absorbed in sufficient absorbent material to absorb twice the volume of the liquid. Solid wastes containing liquid will contain as little free standing and non-corrosive liquid as is reasonably achievable, but in no case will the liquid exceed one percent of the volume.
 3. Wastes that are spontaneously flammable or explosive will not be accepted. If such wastes are received, they will be isolated at a remote location, and the shipper will be directed to make arrangements for immediate return.
 4. Wastes in gaseous form will be packaged at a pressure that does not exceed 1.5 atmospheres at 20 degrees centigrade. Total activity will not exceed 100 curies per container.

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations Department	Issue Date 3/15/99	OP-1.2.4
	Waste Verification Testing	Revision 2	Page 5 of 9

5. Wastes that present non-radiological hazards, such as infectious wastes, will be treated prior to shipment to the WCS facility to reduce the associated hazards.

3.4.2 If the results of the preliminary verification determines that a visual inspection of the waste form or content is required due to apparent compliance violations or discrepancies, the Operations Supervisor or designee will:

1. Initiate a Radiation Work Permit and forward it to the Radiation Safety Officer and the Operations Manager for approval.
2. Initiate a Waste Verification Inspection Plan, and forward it to the Waste Acceptance Specialist. The complexity and level of detail of the plan will vary to accommodate the specific inspection verification needs.
 - a. For example; the plan may require simple visual inspection of the waste package contents, puncturing of the container to locate voids or liquids, or collection of samples for laboratory analysis.

3.4.3 The waste package will be moved to a location designated by the Operations Supervisor and Radiation Safety Supervisor.

3.4.4 The floor or ground surface around the container will be protected with plastic sheeting. If checking for free liquids, a liquid containment pan will be placed under the waste container.

3.4.5 Materials which exceed LSA-1 criteria:

1. The waste container will be placed in a PermaCon enclosure with an attached high efficiency particulate air (HEPA) filtered ventilation system.
2. Air samples from the ventilation system HEPA filter exhaust will be collected continually during the inspection. The HEPA filter exhaust air sampler will be run until the inspection is completed.

3.4.6 Individuals who perform the waste inspection will review the inspection plan with a Radiation Safety Technician to ensure proper understanding of the inspection precautions, objectives, and steps.

3.4.7 Inspection personnel will dress in the personal protective equipment required in the Radiation Work Permit.

3.4.8 Inspection personnel will enter the enclosure and open the waste container, or, if checking for free liquids, puncture the container at the suspected location of the free liquid.

3.4.9 Inspection personnel will perform the inspection or sampling as detailed in the inspection plan.

Note: All liquids will be verified to be non-corrosive ($4 < \text{pH} < 11$) prior to being disposed. Testing for pH may be done by any pH measuring method.

WCS <hr/> WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 3/15/99	OP-1.2.4
	Waste Verification Testing	Revision 2	Page 6 of 9

Prior to disposal of liquid, it will be solidified with an approved solidification agent and packaged in a manner consistent with license requirements that would allow for its disposal . If the package is to be returned to the generator, it will be the responsibility of the generator to package and manifest it according to applicable rules and regulations.

- 3.4.10 If required a representative sample of the suspect waste will be collected. All appropriate documentation (location, etc.) will be prepared. The site laboratory or a qualified external laboratory will perform waste characterization analyses.
- 3.4.11 Upon completion of the inspection, the waste container will be closed and sealed. Samples, if taken, will be handled as detailed in the inspection plan.
- 3.4.12 An area contamination survey will be performed at the completion of the inspection activities.
- 3.4.13 Air samples and any smears obtained during the inspection will be analyzed.
- 3.4.14 When contamination levels are below the limits, normal access may be restored to the inspection location and the inspected container can be removed.
- 3.4.15 The Waste Acceptance Specialist or the Radiation Safety Officer will be responsible for documenting the inspection results on the Waste Verification Inspection Plan, supplemented as necessary with supporting attachments.
- 3.4.16 If the visual verification and/or sampling methods listed above are not sufficient to verify the accuracy of the manifest document, the Waste Acceptance Specialist will contact the generator to perform any additional required testing.
- 3.4.17 If the waste verification test methods listed above result in a noncompliance finding, then the Waste Acceptance Specialist will note any deficiencies on a Non-conformance Report (NCR).
- 3.4.18 The Radiation Safety Officer will report violations of any state, local, or federal regulations to the state inspector, as required.
- 3.4.19 When the results of the verification testing are known, the disposition of the waste will be recorded on the Waste Verification Inspection Plan, and agreed to by the Waste Acceptance Specialist and the Radiation Safety Officer.

4.0 RECORDS

Records generated by this procedure are required to be maintained in accordance with facility policies and federal and state regulations.

4.1 REQUIRED FORMS

Form Number OP 1.2.4-1, Waste Verification Inspection Plan

4.2 COMPLETION AND APPROVAL REQUIREMENTS

 WASTE CONTROL SPECIALISTS LLC	Operations Department	Issue Date 3/15/99	OP-1.2.4
	Waste Verification Testing	Revision 2	Page 7 of 9

The Radiation Safety Officer will complete and sign the Waste Verification Inspection Plan form. The Waste Acceptance Specialist will review and sign the form.

4.3 QUALITY ASSURANCE REQUIREMENTS

- 4.1 Documents required or created in support of this procedure are quality assurance records. The Waste Verification Inspection Plan, will be included in the quality assurance records package.
- 4.2 The records will be submitted to Records Management, who will ensure each document is complete, legible, and adequately identifiable.
- 4.3 The quality assurance records resulting from this procedure will be retained in accordance with "Quality Assurance Program Manual

5.0 REFERENCES

Quality Assurance Program Manual

TRCR Part 21, Standard for Protection Against Radiation

**WASTE VERIFICATION INSPECTION PLAN
FORM NUMBER OP 1.2.4-1**

Waste Tracking Number _____	Waste Manifest Number _____
Waste Generator/Broker _____	
Inspection Requested By _____	Date _____
Reason for Inspection _____	

Hazard Evaluation	
Describe Inspection Steps (attach separate sheet if necessary)	
Inspection Approved By _____	
Waste Acceptance Specialist _____	Date _____
Results of Inspection	
Individual Radiation Exposure Received _____	
Airborne Contamination Levels _____	
Contamination and Radiation Levels Encountered _____	
Date of Inspection _____	Time of Inspection _____
Inspection Performed By _____	
Location of Inspection _____	
Disposition of Waste	
Waste Acceptance Specialist _____	Date _____
Radiation Safety Officer _____	Date _____

**INSTRUCTIONS FOR WASTE VERIFICATION INSPECTION PLAN
FORM NUMBER OP 1.2.4-1**

1. Complete the waste tracking number.
2. Complete the applicable manifest number (e.g., COM9301-00876).
3. Fill in the name of the waste generator or broker (e.g., ACME Waste Processors, Inc.).
4. Fill in the name of the person requesting inspection and the date that the inspection was requested. |
5. Complete the reason for inspection comments. (e.g., Container was leaking liquids.) |
6. Indicate the results from the hazard evaluation. [e.g., Radiological analyses, chemical, fire (ignitability), and explosive analyses.]
7. Describe the inspection steps. [e.g., box suspected of leaking liquids was tapped gently over the surfaces with a blunt striking device (free-standing liquids determined to be present); Radiation Safety staff performed air monitoring and personnel monitoring upon the opening of the container per RWP; free-standing liquids were sampled, pH check indicated a pH of 2 (acidic) and sample was submitted for laboratory analysis].
8. Have the Waste Acceptance Specialist and the inspector sign and date the "Inspection Approved By" box.
9. Describe the results of the inspection. (e.g., Laboratory analysis indicated that free-standing liquids contained concentrated nitric acid; waste generator was notified and sent personnel to the site to assist in neutralizing the acid and repackaging the waste.)
10. Indicate the level of radiation exposure received by personnel (as applicable). [e.g., personnel neutralizing and re-packaging the box received the following gamma exposure:
 1. John R. Doe 25 mR (Pocket Dosimeter Results) |
11. Obtain airborne contamination levels from health physics staff and indicate the airborne contamination levels. (e.g., 3E-7 Ci/ml, Co-60.)
12. Indicate the radiation and contamination levels encountered during the inspection. (e.g., Maximum dose rate was 125 mrem/hr; Maximum contamination levels were 13,000 dpm/100 cm² beta-gamma and 2,200 dpm/100 cm² alpha.)
13. Indicate the date of the inspection and time of the inspection. (e.g., 03/16/93, 2:30 p.m.)
14. Indicate the person performing the inspection. (e.g., William Becksworth)
15. Indicate the location of inspection. (e.g., PermaCon enclosure inside the Radwaste Processing Area)
16. Indicate the disposition of waste. (e.g., Free-standing acidic liquids were pumped out of the B-88 box and were neutralized and solidified by concrete; absorbent material was placed in the B-88 box and the concrete was placed back in the original B-88 box.)
17. The Waste Acceptance Specialist and the Radiation Safety Supervisor will sign and date the bottom of the form indicating approval.
18. The completed form will be sent to the Records Management Technician for records retention.

 WASTE CONTROL SPECIALISTS LLC	Operating Procedure	Effective Date 9/9/00	OP-1.2.6
		Revision 2	Page 1 of 3
WASTE SHIPMENT OFF-LOADING			

1.0 PURPOSE AND SCOPE

The purpose of this procedure is to describe the steps for off-loading of various configurations of waste packages received at the WCS facility. The following types of containers are expected to be received at the WCS facility: 55-gallon drums, 85-gallon drums/overpacks, high integrity containers, metal boxes, and large or small liners. Any deviations from this procedure will be approved by the Facility Manager.

2.0 EQUIPMENT AND MATERIALS

2.1 OPERATING EQUIPMENT

- 2.1.2 Forklift
- 2.1.3 Ramp for accessing the shipment truck with the forklift
- 2.1.4 Radiation survey meter
- 2.1.5 Miscellaneous hand tools and wrenches for removing lid bolts, securing rigging, etc.

2.2 SAFETY EQUIPMENT

- 2.2.1 Safety shoes
- 2.2.2 Safety glasses
- 2.2.3 Gloves
- 2.2.4 Coveralls

3.0 RESPONSIBILITIES

Radiation Safety is responsible for ensuring that radiation surveys are performed on all Rad shipments prior to off-loading shipment. The Operations Manager/Supervisor and Radiation Safety Supervisor will be responsible for determining the location where the shipment is to be off-loaded.

4.0 PROCEDURE

4.1 PREREQUISITES

- 4.1.1 RADIOACTIVE SHIPMENTS

Approval:			
<u>Signature on File</u> Operations Manager	<u>09/09/00</u> Date	<u>Signature on File</u> Radiation Safety Officer	<u>08/01/00</u> Date

 WASTE CONTROL SPECIALISTS LLC	Operating Procedure	Effective Date 9/9/00	OP-1.2.6
	Waste Shipment Off-Loading	Revision 2	Page 2 of 3

1. To keep radiation exposure as low as reasonably achievable (ALARA), all workers should remain as far from the waste packages as possible and still be able to perform their duties.
2. The Operations Supervisor and the Radiation Safety Supervisor shall determine the location where the shipment is to be off-loaded. Radioactive waste shipments may be off-loaded at the following locations: Bin-Storage Area, Container Storage Building (CSB), or the Stabilization Building if material is to be entered into the facility waste processing stream immediately.
3. A Radiation Safety Technician (RST) and the Waste Acceptance Specialist will be present to perform radiation surveys, check for compliance of U. S. Department of Transportation regulations, and to correlate packages with the manifest. Off-loading activities will not commence until Radiation Safety is prepared to monitor off-loading activities.
4. The vehicle carrying the waste will have been inspected and passed for safety in accordance with OP 1.2.1, "Arriving Vehicle Safety Inspection".

4.1.2 NON-RADIOACTIVE SHIPMENTS

1. Safety training will be according to OP 1.1.4, "On-Site Safety Training".
2. Personnel who operate equipment and vehicles will receive training for the types of vehicles they are operating.
3. Documentation of training shall be placed in the employee's training record.

4.2 SPECIAL PRECAUTIONS

- 4.2.1 If a membrane is required, extra caution will be exercised when walking on the membrane placed on the inspection area, as it may be slippery.
- 4.2.2 No one will be allowed under any suspended objects such as waste pallets, waste packages, etc.
- 4.2.3 If the shipment contains radioactive material, the Radiation Safety Supervisor may determine that it is necessary to use shielding to protect workers. The shielding will be placed so it will not prevent adequate visual inspection of the waste package, when possible.

4.3 INSTRUCTIONS

Operations personnel will conduct the following activities, unless otherwise noted.

4.3.1 Preparation

1. If required, place an impermeable membrane on a flat surface. This membrane will be used to prevent any spread of contamination from the waste packages to other surfaces during inspection.
 - a. It will be replaced or repaired if it is torn. Vehicles will not be driven over this membrane.

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Operating Procedure	Effective Date 9/9/00	OP-1.2.6
	Waste Shipment Off-Loading	Revision 2	Page 3 of 3

b. A Radiation Safety Technician will survey the membrane frequently to ensure that it is not contaminated. If it becomes contaminated, it will be disposed of or decontaminated. If unable to decontaminate, it will be disposed of according to OP 1.2.12, "On-Site Generated Waste Disposal".

2. Position the waste shipment truck to facilitate off-loading.
3. If the material is radioactive, preselect the location in the waste storage building or bin storage area where the waste containers are to be located.

4.3.2 Off-loading pallets, barrels, boxes, or other waste containers

1. Put the ramp in place for the forklift to access the truck.
2. The WAS will inspect the waste according to OP 1.2.2, "Waste Shipment Acceptance if the material is radioactive.
3. If the waste package is unacceptable, refer to OP 1.2.5, "Waste Containers Not Acceptable Upon Arrival," and OP 1.2.8, "Handling and Overpacking/Repackaging Damaged Waste Containers."
4. If the waste is radioactive and acceptable, move the container to the designated area in the waste storage building or bin storage area.
 - a. The Operations Supervisor and Radiation Safety Supervisor will determine location where waste will be positioned within each storage area.
 - b. Containers reading ≥ 100 mR/hr will be placed in the high radiation area and secured to stop access without the RSO and RSS's permission.
 - c. The Radiation Safety Technician shall complete a radiation survey within the storage area and adjacent areas after waste containers are placed in storage.
 - d. Radiological postings shall be modified as required to reflect new /current conditions.
5. If the waste is not radioactive and acceptable, move the containers on the pallets to rows on the drum dock so they can be sampled and inspected.

5.0 RECORDS

There are no specific records to be completed associated with this procedure.

6.0 REFERENCES

WCS Waste Acceptance Criteria

Quality Assurance Program Manual

25TAC 289.202, Standards for Protection Against Radiation

 WASTE CONTROL SPECIALISTS LLC	Radiation Safety Department	Effective Date 1/5/00	RS-3.1.6
	Surveys of Incoming and Outgoing Radioactive Material Shipments	Revision 3	Page 2 of 8

4.1.4 Personnel who perform this procedure have received training in performing this procedure.

4.1.5 If package dose rates interfere with other packages in the shipment, a transition lay-down area will be established to isolate the package being surveyed from other packages in the shipment.

4.2 SPECIAL PRECAUTIONS

4.2.1 If a transport vehicle, trailer, or shipping cask shows evidence of damage or leakage, appropriate surveys must be taken to identify contamination that may have spread to the ground around and under the vehicle before further steps are performed.

4.2.2 If obvious leakage of material is noted inside the vehicle cargo space, air samples will be collected and analyzed. Respiratory protection will be used in the cargo area until air sample analysis results confirm that it is not required.

4.2.3 Leakage of containers identified at the time of receipt survey will be treated in accordance with OP 1.2.5, "Waste Containers Not Acceptable Upon Arrival".

4.2.4 Prepare survey documents of vehicles and packages in accordance with RS 3.1.5, "Documentation of Radiological Surveys".

4.3 INSTRUCTIONS

4.3.1 Incoming vehicle and package surveys shall be performed as soon as practicable after receipt of the package, and:

1. Immediately upon discovery of evidence of package integrity, e.g., package is crushed, wet, or damaged. but
2. Not later than three hours after the package is received at the WCS facility if received during normal working hours, or
3. No later than 3 hours from the beginning of the next working day,

4.3.2 Preparation for the Survey

1. Initiate an Incoming Vehicle Survey Form (Form-RS 3.1.5-1) by entering available administrative information related to date and time, instrumentation, vehicle identification numbers, etc.
2. Indicate on the survey map the specific locations where survey measurements will be performed.

NOTE: For shipments in tandem trailers, perform a complete survey of each trailer.

3. For radioactive material package surveys, initiate a Survey Form (Form RS 3.1.5-1) for the package(s).

4.3.3 Incoming Vehicle Radiation Level Surveys

 WASTE CONTROL SPECIALISTS LLC	Radiation Safety Department	Effective Date 1/5/00	RS-3.1.6
	Surveys of Incoming and Outgoing Radioactive Material Shipments	Revision 3	Page 3 of 8

1. Using the gamma dose rate survey instrument, perform a preliminary gamma dose-rate level screening survey of the entire vehicle exterior.
2. If a vehicle exterior gamma dose-rate meets or exceeds a limit for an exclusive use vehicle shipment (refer to the U.S. Department of Transportation limits given in Step 4.3.3 (4)), notify the Radiation Safety Supervisor, Operations Supervisor, and the Radiation Safety Officer immediately. Restrict access to the vehicle, and wait for further instructions from the RSO.
3. If radiation levels do not meet or exceed the limits of Step 4.3.3 (4) continue with the survey.
4. Survey the following areas thoroughly to locate the maximum gamma level on each surface:

Note: The limits specified in items a-d are for exclusive use vehicles.

- a. On contact with any point on all vertical sides of the transport vehicle - The maximum allowable gamma dose-rate is 200 mrem/hr.
- b. At 2 meters perpendicular from any point on vertical sides of the transport vehicle - The maximum allowable gamma dose-rate is 10 mrem/hr.
- c. On contact with the bottom surface and the I-Beam underneath the transport vehicle - The maximum allowable gamma dose-rate is 200 mrem/hour.

NOTE: The survey described below can be performed on the exterior surface of the back of the cab (or sleeper). If readings are in excess of 2 mrem/hour, a survey shall be performed inside the cab (or sleeper).

- d. In any normally occupied position in the vehicle cab - The maximum allowable gamma dose-rate is 2 mrem/hour.

4.3.4 Incoming Vehicle Contamination Surveys

1. Perform a removable surface contamination survey
 - a. obtain smear samples from each area specified below
 - b. analyze each smear for alpha and beta
 - c. enter the location of the smear on the survey form map.
 - 1) Enclosed cargo vehicle survey locations:
 - a) Rear doors of the transport vehicle
 - b) Accessible floor areas inside the cargo access door(s), when present
 - c) If the waste transport vehicle is a van, smears will be taken on each vertical side of the interior.

 WASTE CONTROL SPECIALISTS LLC	Radiation Safety Department	Effective Date 1/5/00	RS-3.1.6
	Surveys of Incoming and Outgoing Radioactive Material Shipments	Revision 3	Page 4 of 8

2) Flat-bed or open cargo vehicle survey locations:

- a) On the rear of the trailer;
- b) On the waste packages; and
- c) At random locations on the trailer bed

2. Complete and document the removable contamination survey by entering each activity in the "dpm" column of the survey.

3 Actions to be taken if contamination exceeds DOT limits:

- a. If contamination is found that exceeds DOT limits (see TABLE 3.1.6-1), notify the Radiation Safety Supervisor (RSS) immediately.
- b. As directed by the RSS, perform additional contamination measurements (smears) to pin-point the locations of high-level contamination. Documentation of these surveys shall be attached as part of the Incoming Transport Vehicle Survey Record.

4.3.5 Incoming Radioactive Material Packages.

1. Before entering a loaded vehicle to remove packaged radioactive material, perform a dose-rate scan of the areas personnel will be required to enter to inspect and remove the packages. Ensure that appropriate steps are taken to ensure exposures of personnel performing package unloading and radiological surveys maintain their exposures ALARA and that controls and postings are appropriate for the dose-rates that will be encountered by Operations and Radiation Safety personnel.
2. Inspect each incoming package carefully to identify any spots on or damage to the container that could be associated with contamination caused by leakage of package content.

CAUTION: Removable surface contamination surveys must be performed before any package that has damage or evidence of leakage is moved or removed from an incoming vehicle. Smears should be taken of the suspect area on the package surface and for the type(s) of radiation emitted by the radionuclide content of the package. Notify the Radiation Safety Officer and the Waste Acceptance Specialist immediately if leakage is confirmed. Await further instructions before moving or removing the package.

3. When each package is determined not to be damaged or leaking, it may be moved from the incoming vehicle to the transition lay-down area where the complete package survey will be performed.

4.3.6 Incoming Radioactive Material Package Radiation Survey

1. Perform package radiation level surveys using the methods described in RS 3.1.2, "Beta, Beta/ Gamma, and Neutron Dose Rate Survey Techniques".

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Radiation Safety Department	Effective Date 1/5/00	RS-3.1.6
	Surveys of Incoming and Outgoing Radioactive Material Shipments	Revision 3	Page 5 of 8

2. Scan the entire external surface of the package to determine the maximum radiation dose rate present on the package surface. Document the maximum surface dose rate on the survey form.
3. Notify the Waste Acceptance Specialist (WAS) of the results of this survey for use in determining acceptability of need for special actions. Notify the WAS, the Radiation Safety Officer, and the Operations Manager immediately if any State or Federal limit is exceeded or if shipping documents are not in agreement with receipt survey results.

4.3.7 Incoming Radioactive Material Package Contamination Survey

1. Perform package contamination level surveys using the methods described in RS 3.1.3, "Alpha and Beta/Gamma Contamination Survey Techniques" with the following modifications and exceptions:
 - a. The survey sample must identify the area smeared if different than the standard 100 square centimeters.
 - b. Packages arriving on an exclusive use vehicle by rail or highway shipment only, the removable radioactive contamination levels must not exceed ten times the levels prescribed in 25 TAC §289.202 (ee)(4)(A)(ii).
2. Ensure that each smear is properly identified and use caution to prevent cross contamination.
3. Document the results of the smears on the survey form.
4. If contamination levels exceed the limits in the table 3.1.6-2 below, notify the WAS, the Radiation Safety Officer, and the Operations Manager immediately:
5. Ensure that all receipt radiological survey information is properly entered on the survey. Sign the appropriate locations on the survey form that identify the individual performing the receipt survey.

4.3.8 Completing final survey documentation, enter all analysis data in the appropriate locations on the Incoming Transport Vehicle Survey Record.

4.3.9 If the incoming transport vehicle is determined to be ready for acceptance at the facility, a copy of the completed Incoming Transport Vehicle Survey Record will be attached to the shipping papers. The vehicle will be moved to the appropriate off-loading area in accordance with OP 1.3.2, "Transport Vehicle Movement/Control."

4.3.10 Outgoing Radioactive Material Surveys

Methods for performing and documenting the survey of outgoing packages and vehicles are the same as for incoming packages and vehicles with the following exceptions:

1. Any package prepared for shipment must be in accordance with applicable regulatory requirements. The package will not be surveyed until the package is sealed and ready for shipment.

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Radiation Safety Department	Effective Date 1/5/00	RS-3.1.6
	Surveys of Incoming and Outgoing Radioactive Material Shipments	Revision 3	Page 6 of 8

2. Regulatory Agency notification is not required if a package prepared for shipment is found to have radiation levels or surface contamination in excess of applicable limits. However, if such a package is found, an investigation may be required to determine the cause of the condition and to propose methods to prevent recurrence and repackaging if required by the RSO.
3. Packages placed on vehicles for transport shall not be moved or altered after the radiation and contamination survey has been completed.

5.0 REQUIRED RECORDS

5.1 DOCUMENTATION

Radiological Survey Form for the incoming or outgoing shipment.

5.2 COMPLETION AND APPROVAL REQUIREMENTS

The Survey Record form will be completed by the Radiation Safety personnel who participated in the survey. The complete record shall include attachments documenting performance and results surveys not shown on the form. The Radiation Safety Supervisor shall review, sign, and date the completed survey record.

5.3 RECORDS DISPOSITION

5.3.1 Copies of the complete survey shall, after review and approval by the Radiation Safety Supervisor, be available to the Radiation Safety Officer, the Waste Acceptance Specialist, and the Operations Manager for review.

5.3.2 All documentation of activities covered in this procedure shall be incorporated into the shipment package and will be maintained in accordance with the Radiological Control Manual.

6.0 REFERENCES

- 6.1 RS 3.1.2, "Beta, Beta/Gamma, and Neutron Dose Rate Survey Techniques"
- 6.2 RS 3.1.3, "Alpha and Beta/Gamma Contamination survey Techniques"
- 6.3 WCS Radiological Control Manual, RCM-100
- 6.4 25 TAC §289.202, "Texas Regulations for Control of Radiation"
- 6.5 Code of Federal Regulations, CFR 49, Part 173, Sections 441 and 443.
- 6.6 OP 1.2.14, "Cask Inspections and Surveys"
- 6.7 OP 1.2.5, "Waste Containers Not Acceptable Upon Arrival"
- 6.8 OP 1.3.3, "Decontamination of Operational Equipment and Transport Vehicles"
- 6.9 OP 1.2.1, "Arriving Vehicle Safety Inspections"
- 6.10 OP 1.3.2, "Transport Vehicle Movement/Control"

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Radiation Safety Department	Effective Date 1/5/00	RS-3.1.6
	Surveys of Incoming and Outgoing Radioactive Material Shipments	Revision 3	Page 7 of 8

6.11 RS 3.1.5, "Documentation of Radiological Surveys"

TABLE 3.1.6-1

REMOVABLE RADIOACTIVE CONTAMINATION ACTIONS

Measurement	Action Level	Action
Removable beta or gamma contamination	Less than or equal to 2200 dpm per 100 cm ²	Shipment within DOT limits
Removable beta or gamma contamination	Greater than 2200 dpm per 100 cm ²	Hold for RSS assessment and further survey
Removable alpha contamination	Less than or equal to 220 dpm per 100 cm ²	Shipment within DOT limits
Removable alpha contamination	Greater than 220 dpm per 100 cm ²	Hold for RSS assessment and further survey

TABLE 3.1.6-2

REMOVABLE EXTERNAL RADIOACTIVE CONTAMINATION WIPE LIMITS

Contaminant	Maximum Permissible Limits	
	μCi / cm ²	dpm / cm ²
Beta-gamma emitting radionuclides; all radionuclides with half-lives less than ten days; natural uranium; natural thorium; uranium-235; uranium-238; thorium-232; thorium 228 and thorium-230 when contained in ores or physical concentrates.....	1 x 10 ⁻⁵	22
All other alpha emitting radionuclides.....	1 x 10 ⁻⁶	2.2

NOTE: Consult the RSO or RSS for documented sole use vehicle limits.

 WASTE CONTROL SPECIALISTS LLC	Radiation Safety Department	Effective Date 08/11/00	RS-1.4.2
		Revision 5	Page 1 of 5
CHAIN OF CUSTODY RECORD			

1.0 PURPOSE AND SCOPE

This procedure provides instruction for the transfer of custody, submission for analysis, and storage of samples. This procedure ensures samples are controlled during handling, storage, and shipment to preclude damage or loss.

2.0 EQUIPMENT AND MATERIALS

2.0 Temperature control devices (coolers, ice packs etc.), absorbent, sample containers, packaging materials etc.

2.1 Chain of Custody Forms

2.2 Security Seals (if required)

3.0 RESPONSIBILITIES

3.1 The Radiation Safety Supervisor or Radiation Operations Supervisor is responsible for ensuring adherence to this procedure and that personnel performing sampling receive training in this procedure.

3.2 Radiation Safety Technicians and Radiation Operation Technicians are responsible for ensuring all samples sent off-site for laboratory analysis are packaged correctly and are numbered with unique identifying numbers in accordance with this procedure.

4.0 PROCEDURE

4.1 PREREQUISITES

Radiation Safety Technicians or Radiation Operations Technicians performing the sampling shall be trained in the use of this procedure.

4.2 PRECAUTIONS AND LIMITATIONS

4.2.1 Sampling shall be performed in accordance with the applicable procedure for the media sampled.

4.2.2 Each sample shall have a unique identifying number and care shall be taken to ensure samples are not mixed, unless intentionally composited.

4.2.3 Samples shall be stored in a designated area under the supervision of radiation safety and radiation operations personnel to prevent loss, damage or tampering.

Approval:			
<u>Original signed by Greg Broda</u> <u>8/10/00</u> 8/10/00 Radiation Operations Supervisor Date	<u>Original signed by Steve Jacobs</u> Radiation Safety Supervisor Date		
<u>Original signed by David Kania</u> <u>8/11/00</u> Radiation Safety Officer Date			

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Radiation Safety Department	Effective Date 08/11/00	RS-1.4.2
	Chain of Custody Record	Revision 5	Page 2 of 5

4.2.3 Radiation Safety Technicians or Radiation Operations Technicians performing the sampling shall be trained in the use of this procedure.

4.3 INSTRUCTIONS

4.3.2 Each sample collected shall have a unique identifying number. The numbering system used will be the year, followed by a designation for the type of sample, followed by the month the sample was taken, followed by the number 01 and continuing to 02, 03, 04, etc. Samples taken by the Radiation Operations Department will begin at 400 and continue (example 98:22-02-400).

Example: 98-SS-02-001

98:1998

SS:Soil Sample

02:Second month of 1998

001:Sample number 1

4.3.3 The following designations shall be used for identifying the type of samples:

1. AP – air sample - particulate
2. AR – air sample - radon
3. AT – air sample - tritium
4. AO – air sample - other
5. BS – bioassay sample
6. SS – soil sample
7. ET – environmental TLD sample
8. PS – processing sample solid
9. PL – processing sample liquid
10. PT – personnel TLD sample
11. VE – vegetation sample
12. VA – vadose sample
13. WS – environmental water sample
14. OT - Other

4.3.4 Each group of samples shall have a "Chain of Custody Form" RS-1.4.2-1, or computer generated equivalent completed to accompany the samples to the lab.

4.3.5 The Chain of Custody will include:

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Radiation Safety Department	Effective Date 08/11/00	RS-1.4.2
	Chain of Custody Record	Revision 5	Page 3 of 5

1. Chain of Custody Number (i.e. yymmdd - ##)
 2. Purchase Order Number
 3. Specification Number
 4. Sample Number(s)
 5. Sample Date
 6. Sample Time (if applicable)
 7. Sample Location
 8. Analysis Parameter (if not in specification)
 9. Remarks Section
 10. Signature of person relinquishing the samples
 11. Certification block for the laboratory to verify and sign when the samples have been received in proper condition.
 12. In the remarks area, place waste identifiers (i.e., waste profile number or numbers, MW numbers) to provide a cross-reference ability.
- 4.3.6 The Purchase Order Number and Specification Number will be obtained by the Radiation Safety Supervisor or Radiation Operations Supervisor.
- 4.3.7 Analysis parameters shall be determined by the procedure for routine samples. The RSO, or designee, will determine the sample parameters for non-routine or special samples.
- 4.3.8 Samples collected shall be packaged as required for that sample analysis.
- 4.3.9 The Radiation Safety Technician or Radiation Operations Technician that collected the samples should sign the signature block for Sample Technician.
- 4.3.10 The Radiation Safety Technician or Radiation Operations Technician that packaged the samples shall sign under "Relinquished By" verifying all the samples is present at the time of shipment.
- 4.3.11 If required, affix a Security Seal to the package of samples to prevent tampering with the package.
- 4.3.12 Records completion
1. The original Chain of Custody Form (or computer-generated equivalent) shall be sent with the samples to the laboratory. The laboratory will return the signed chain of custody to WCS, to verify the samples have been received.
 2. A copy of the chain of custody (or computer-generated equivalent) shall be maintained in the Radiation Safety Department files as the record of the samples if

<i>WCS</i> <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Radiation Safety Department	Effective Date 08/11/00	RS-1.4.2
	Chain of Custody Record	Revision 5	Page 4 of 5

the Chain of Custody is not returned from the laboratory. Radiation Safety will follow up on any Chain of Custody forms that are not returned from the laboratory.

5.0 RECORDS

WCS will maintain the completed Chain of Custody Forms and Purchase Order Log as Quality Assurance Records.

"Chain of Custody Record for Samples", RS-1.4.2-1, or computer generated equivalent.

6.0 REFERENCES

WCS Quality Assurance Plan

WCS <hr/> <i>WASTE CONTROL SPECIALISTS LLC</i>	Radiation Safety Department	Effective Date 08/11/00	RS-1.4.2
	Chain of Custody Record	Revision 5	Page 5 of 5

CHAIN OF CUSTODY RECORD FOR SAMPLES

RS-1.4.2-1
(Attached)