

# CCP-TP-069

Revision 5

## CCP

# Sealed Source Visual Examination and Packaging

EFFECTIVE DATE: 11/09/2010

Larry Porter

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	03/03/2005	Initial Issue.
1	04/05/2005	Revised to address Carlsbad Field Office (CBFO) Document Review Record (DRR) comments.
2	05/11/2005	Revised to address Carlsbad Field Office (CBFO) Document Review Record (DRR) adequacy review comments.
3	12/07/2005	Revised to add capability to package waste in containers other than pipe overpacks.
4	11/16/2006	Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).
5	11/09/2010	Revised to clarify the specification of dunnage used in the payload area of a Standard Pipe Overpack Component (POC) and Standard 55-gallon drum, expand the weights in Attachment 2, Weights for Standardized OSRP POC Packaging Configurations, and includes other minor corrections.

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## 1.0 PURPOSE

The purpose of this procedure is to describe how to perform the Sealed Source Visual Examination (VE) Technique, identify sealed sources, package sealed sources, and prepare and review Batch Data Reports (BDRs) generated from the Sealed Source VE process.

This procedure is designed to be performed in conjunction with Los Alamos National Laboratory (LANL) Off-site Source Recovery Project (OSRP) operating procedures that address the recovery of sources. This procedure provides the actions for the collection of VE data and information required by CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan* and CCP-PO-002, *CCP Transuranic Waste Certification Plan*.

### 1.1 Scope

Sealed Source VE is performed to identify sealed sources and their weights, verify the physical form of the sealed sources, verify the absence of prohibited items, demonstrate that applicable containers qualify for the headspace gas (HSG) exemption by compliance with CCP-PO-001, Section B-3a(1)(iii), and confirm the waste stream based on acceptable knowledge (AK). The VE results are recorded on data forms associated with this procedure.

## 2.0 REQUIREMENTS

### 2.1 References

#### Baseline Documents

- *Waste Isolation Pilot Plant Hazardous Waste Facility Permit, NM4890139088-TSDF, Attachment B, Waste Analysis Plan (WAP)*
- *DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*
- *NRC Docket 71-9218, TRUPACT-II Safety Analysis Report*

#### Referenced Documents

- *CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- *CCP-PO-002, CCP Transuranic Waste Certification Plan*
- *CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*

- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*

## 2.2 Training Requirements

2.2.1 Personnel performing this procedure to characterize sealed sources will be trained and qualified in accordance with CCP-QP-002, *CCP Training and Qualification Plan*.

## 2.3 Precautions and Limitations

### 2.3.1 Facility Requirements

[A] This procedure augments, but **DOES NOT** supersede applicable requirements of the facilities in which the activities are conducted.

[A.1] Work performed at LANL facilities will be conducted in accordance with facility requirements.

[B] This procedure **DOES NOT** address radiological protection requirements. All activities described shall be conducted in accordance with work plans, procedures, or other process controls generated by the facility where the work is performed.

### 2.3.2 Safety Precautions

[A] If workers observe a hazardous condition while conducting work according to this procedure, they must discontinue work, notify their immediate supervisor, group leader or other management representative, and follow instructions in accordance with the OSRP Integrated Work Document (IWD) required by LANL.

### 2.3.3 Conditions Adverse to Quality

[A] If a worker identifies a condition adverse to quality, the individual(s) identifying the condition shall initiate a nonconformance report (NCR) in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.

2.4 Prerequisite Actions

2.4.1 VE Operator, verify the torque wrench is calibrated.

2.5 Definitions

2.5.1 **Sealed Source** – Any radioactive material that is physically encased in a capsule, rod, element, etc. that prevents the leakage or escape of the special nuclear material and that prevents removal of the radioactive material without penetration of the casing.

2.5.2 **Regulatory Definitions**

[A] 10 Code of Federal Regulations (CFR) § 30.4 (1-1-04 Edition): Sealed source means any byproduct material that is encased in a capsule designed to prevent leakage or escape of the byproduct material.

[B] 10 CFR § 835.2 (1-1-04 Edition): Sealed radioactive source means a radioactive source manufactured, obtained, or retained for the purpose of utilizing the emitted radiation. The sealed radioactive source consists of a known or estimated quantity of radioactive material contained within a sealed capsule, sealed between layers of non-radioactive material, or firmly fixed to a non-radioactive surface by electroplating or other means intended to prevent leakage or escape of the radioactive material. Sealed radioactive sources do not include reactor fuel elements, nuclear explosive devices, and radioisotope thermoelectric generators.

### 3.0 RESPONSIBILITIES

#### 3.1 VE Expert

3.1.1 Responsible for overall direction and implementation of the VE Operations.

#### 3.2 VE Operator

3.2.1 Performs VE operations as either the VE Packager or the VE Recorder.

3.2.2 Prepares and paginates the BDR.

#### 3.3 VE Packager

- Visually inspects OSRP sealed sources.
- Places OSRP sealed sources into containers.
- Verifies entries made by the VE Recorder on Attachment 4, Container Packaging and Visual Examination Data Record.

#### 3.4 VE Recorder

- Acts as the second VE Operator during VE, and placement of sealed sources into payload containers.
- Verifies the VE Packager's observations by reviewing the contents of the container to ensure correct reporting.
- Documents Sealed Source VE operation data on Attachment 4.

#### 3.5 Independent Technical Reviewer (ITR)

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#### **NOTE**

Independent Technical Reviewer (ITR) review is performed by a qualified individual other than the data generator who is qualified to have performed the initial work and who was not involved in the generation or recording of the data under review.

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3.5.1 Reviews the BDR and completes Attachment 7, Visual Examination Independent Technical Reviewer Review Checklist.

- 3.5.2 Prepares and submits NCRs in accordance with CCP-QP-005 as necessary.
- 3.5.3 Submits completed VE BDR to the Facility Records Custodian
- 3.6 Facility Records Custodian
  - 3.6.1 Receives, process, and transmits the VE BDR in accordance with CCP-QP-008, *CCP Records Management*.

4.0 PROCEDURE

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**NOTE**

All containers used for the packaging of sealed source waste are Department of Transportation (DOT) Type 7A 55-gallon drums that may contain pipe overpacks as listed in CCP-PO-003, *CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)*.

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**NOTE**

The steps outlined in Section 4.1 **DO NOT** have to be performed in sequence to maintain worker doses as low as reasonably achievable (ALARA).

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4.1 VE and Packaging of OSRP Sealed Sources

**VE Operator**

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**NOTE**

The activities required below should be performed in accordance with facility or organizational requirements for radiation protection, including use of appropriate source handling equipment, dosimetry, radiation monitoring, and others, as appropriate.

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- 4.1.1 Enter the Container Identifier (on all applicable pages of Attachment 4), name of the VE Packager, and name of the VE Recorder.
- 

**NOTE**

The recorder will initial and date the appropriate fields as identified in Attachment 4.

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- 4.1.2 Enter the revision and effective date of this procedure used on Attachment 4, Page 1.

- 4.1.3 Indicate the container configuration used on Attachment 4, Page 1.
- 

**NOTE**

If a Standard Pipe Overpack Component (POC) with a 12 inch pipe component or a Standard 55-gallon drum is used, in the comment sections of Attachment 4, page 3, indicate the dunnage used to center and secure the sources. Include description, WMP code, and weight. If an S200 configuration is selected, please circle A or B as appropriate.

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- 4.1.4 Record the drum lid filter and Pipe Overpack Component (POC) filter information, if applicable, on Attachment 4, Page 1.

**NOTE**

The VE Expert is notified if an unsatisfactory condition or concern is identified during VE of sealed sources.

4.1.5 For each item being loaded into the container, visually examine and verify the following using Attachment 4, Page 1, **AND** record by initialing and dating in Section 4:

- The sealed source(s) meet applicable regulatory definitions.
- The outer casing is made of non-Volatile Organic Compound (VOC) bearing material.
- That each sealed source is, or is contained in, a rigid sealed container less than or equal to 4 liters in size.
- That the items match the waste stream description, the waste matrix code, and physical form/summary category group provided by AK.
- That there are no non-packaging items placed in the container other than the source(s).
- That there are no more than 2 layers of confinement.
- That the serial numbers on the POC and on the lid match.

4.1.6 For each item being loaded into the container, visually examine and record the following information on Attachment 4, Page 2:

- Sealed Source Description and Identifier (serial number marking), if applicable.
- The waste material parameter (WMP) category (Attachment 1, Waste Material Parameters [WMPs] and Descriptions). If more than one waste material parameter is associated with an item, use as many lines as needed.

**NOTE**

Data are reported with the correct number or significant figures (one decimal place).

- Estimated source weight in grams.
- The item information verified during VE.

- Any comments.

- 4.1.7 Load source(s) into container using tongs or special tool, as appropriate.
- 4.1.8 Verify the absence of prohibited items and enter NP (not present) for each item on Attachment 4, Page 3.
- 4.1.9 Record the presence or absence of prohibited items on Attachment 4, Page 3.

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**NOTE**

The description of the prohibited item **SHALL** be recorded in the “Comments” section on Attachment 4, Page 3.

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- 4.1.10 Record the estimated weight for dunnage on Attachment 4, Page 2. Enter “NA” if no dunnage was used.
- 4.1.11 Sum and record the estimated weights in kilograms for each WMP on Attachment 4, Page 2.
- 4.1.12 Record the container total weight for the packaging configuration from Attachment 2, Weights for Standardized OSRP Packaging Configurations, on Attachment 4, Page 2.
- 4.1.13 Record the container percent full on Attachment 4, Page 2.
- 4.1.14 Record the total estimated weight of the loaded container.
- 4.1.15 Enter waste matrix code on Attachment 4, Page 1.
- 4.1.16 **IF** a POC is **NOT** used,  
**THEN GO TO** step 4.1.23[E], **AND** record NA in the applicable POC-related sections of Attachment 4, Page 1.
- 4.1.17 Carefully align the POC lid and lower the lid onto the POC O-ring and flange (guide pins may be used).
- 4.1.18 After lid is in contact with O-ring and flange face, minimize any lateral or rotary movement of the lid across the mating flange face to avoid unseating O-ring from groove, or damaging the O-ring.

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**NOTE**

If there is a problem threading the bolt, the appropriate tap in the instrument kit will be used to clean out the threads.

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- 4.1.19 Insert bolts into all lid bolt holes and snug bolts by hand, speed wrench, or a low speed, low torque driver to facilitate initial installation of all bolts.
- 4.1.20 Using a criss-cross pattern sequence as indicated in the diagram in Attachment 3, POC Assembly 55-Gallon Drum Top View and Torque Sequence and on the torquing template (if available), torque all POC bolts using a calibrated torque wrench.
- [A] Torque the 12" POC to 65 ft-lb ( $\pm$  5 ft-lb) and the 6" POC to 40 ft-lb ( $\pm$ 4 ft-lb).
- 4.1.21 Retorque the closure bolts going clockwise using the bolt to bolt torquing sequence.
- 4.1.22 Record torque value, torque wrench identification number, and calibration due date in POC Bolt Torque section of Attachment 4 Page 1.
- 4.1.23 Replace the packing materials as follow:
- [A] Replace fiberboard packing top (i.e., lid) matching pipe bolt heads, hoist ring, and filter with cutouts in fiberboard top.
- [B] Install spacer(s) on top of fiberboard liner top, if applicable.
- [C] Install rigid liner lid.
- [D] Ensure the vertical distance between the bottom of the rigid liner lid (i.e., inner surface) and the upper surface (i.e., the top) of the top fiberboard shim is less than or equal to 0.5 inches.
- [D.1] **IF** the distance exceeds 0.5 inches, **THEN** remove the rigid liner lid, **AND** add a sufficient number of shims to bring the distance within range.
- [E] **IF** any plastic liner bags are used, **THEN** CLOSE them using a "horsetail" or "twist and tape" method.

4.1.24 CLOSE the drum as follows:

- [A] Install drum lid.
- [B] Install closure ring as follows:
  - [B.1] Orient bolt closure ends downward and over the drum seam.
  - [B.2] Ensure that ring is properly seated on drum.
- [C] Ensure that drum closure bolt is positioned through the unthreaded drum closure ring lug and that the locking nut is positioned between the two ring lugs.
- [D] Thread drum closure bolt through the threaded drum closure ring lug.
- [E] Lightly tighten drum closure bolt, ensuring that locking nut continues to turn freely.
  - [E.1] **IF** there is a problem threading the bolt, **THEN** use the appropriate tap to clean out the threads.
- [F] Torque drum closure bolt to 40 ft-lb ( $\pm$  4 ft-lb) using calibrated torque wrench, while tapping around circumference of drum closure ring with a soft-headed hammer or equivalent tool. For non-POC drums, torque to value recommended in manufacture-specific closing instructions.
- [G] Record torque value, torque wrench identification number, and calibration due date in Closure Ring section of Attachment 4, Page 1.
- [H] Ensure that ends of drum ring **DO NOT** contact each other.
- [I] Tighten the lock nut against the unthreaded drum closure ring lug.
  - [I.1] **IF** drum closure bolt threads **DO NOT** allow lock nut to be tightened against unthreaded drum closure ring lug, **THEN** tighten lock nut against threaded drum closure ring lug.

[J] Apply Tamper Indication Device (TID) to drum.

4.1.25 Both VE Operators (the VE Packager and the VE Recorder), review information recorded, incorporate comments as appropriate, **AND** sign and date the appropriate lines on Attachment 4, Page 3.

#### 4.2 VE BDR Preparation

##### VE Operator

4.2.1 Assemble the VE BDR using the following forms, as needed:

- Visual Examination Batch Data Report Cover Page (Attachment 5)
- Visual Examination Batch Data Report Table of Contents (Attachment 6)
- Independent Technical Reviewer Review Checklist (Attachment 7)
- Container Packaging and Visual Examination Data Record (Attachment 4)
- Copy of NCRs, if applicable
- Copy of Acceptable Knowledge Documentation Identifier (obtain from AK)
- Copy of Sources in Special Form Capsules (obtain from AK)
- Copy of Radiological Contamination Surveys (obtain from AK)
- Copy of Special Form Documentation (obtain from AK)
- Source Markings (obtain from AK)

4.2.2 Assign a unique BDR tracking number using the format LAyy-OSR-VE-nnn, where yy are the last two numbers of the current year (e.g., 00 for 2000) and nnn is a sequential number starting at 001 for the first BDR of each year, **AND** record on Attachment 5, and attachments, as applicable.

4.2.3 Record the waste stream name and number and the Container Type on Attachment 5.

- 4.2.4 Record the container identification numbers for each container included in the VE BDR on Attachment 5.

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**NOTE**

Attachment 6 will **NOT** be completed until the data generation level reviews are complete.

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- 4.2.5 Provide the VE BDR to the VE ITR.

4.3 VE Independent Technical Review

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**NOTE**

VE ITR review is performed by a qualified individual other than the data generator who is qualified to have performed the initial work.

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- 4.3.1 Complete, **AND** print name, sign, and date one Attachment 7 for the VE BDR.

- 4.3.2 **IF** a nonconformance is identified,  
**THEN** generate an NCR in accordance with CCP-QP-005.

- 4.3.3 Accept the VE BDR by printing name, signing, and dating Attachment 5.

- 4.3.4 Forward the VE BDR to the VE Operator for pagination.

4.4 VE BDR Submittal

**VE Operator**

- 4.4.1 Paginate the VE BDR.

- 4.4.2 Complete Attachment 6.

- 4.4.3 Submit the completed VE BDR to the Facility Records Custodian.

**Facility Records Custodian**

- 4.4.4 Receive, process, and transmit all records in accordance with CCP-QP-008.

## 5.0 RECORDS

5.1 Records generated during the performance of this procedure are maintained as Quality Assurance (QA) records in accordance with CCP-QP-008. The records are the following:

### 5.1.1 QA/Lifetime

#### [A] VE BDR

- [A.1] Attachment 5 – Visual Examination Batch Data Report Cover Page
- [A.2] Attachment 6 – Visual Examination Batch Data Report Table of Contents
- [A.3] Attachment 7 – Visual Examination Independent Technical Reviewer Review Checklist
- [A.4] Attachment 4 – Container Packaging and Visual Examination Data Record
- [A.5] Copy of NCRs, if applicable
- [A.6] Copy of Acceptable Knowledge Documentation Identifier
- [A.7] Copy of Sources in Special Form Capsules
- [A.8] Copy of Radiological Contamination Surveys
- [A.9] Copy of Special Form Documentation
- [A.10] Copy of Source Markings

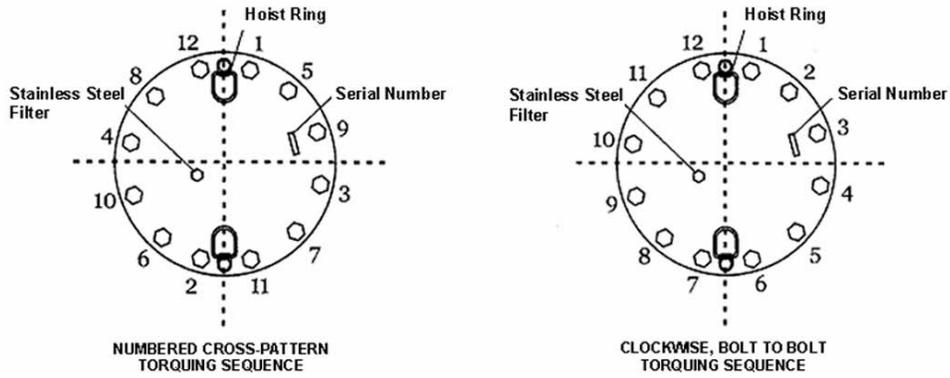
Attachment 1 – Waste Material Parameters (WMPs) and Descriptions

Waste Material Parameter (WMP)	Acronym	Description
Iron-based metals/alloys	IM	Iron and steel alloys in the waste; does not include the container materials
Aluminum-based metals/alloys	AM	Aluminum or aluminum-based alloys in the waste materials
Other metals	OM	All other metals found in the waste materials
Other inorganic materials	OI	Nonmetallic inorganic waste including concrete, glass, firebrick, ceramics, sand, and inorganic sorbents
Cellulosics	C	Materials generally derived from high-polymer plant carbohydrates; (e.g., paper, cardboard, wood, and cloth)
Rubber	R	Natural or man-made elastic latex materials; (e.g., surgeons' gloves, and leaded rubber gloves)
Plastics (waste materials)	PW	Generally man-made materials, often derived from petroleum feedstock; (e.g., polyethylene and polyvinylchloride)
Organic matrix	OR	Cemented organic resins, solidified organic liquids and sludges
Inorganic matrix	IN	Any homogeneous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents; (e.g., wastewater treatment sludge, cemented aqueous liquids, and inorganic particulates)
Soils/gravel	S	Generally consists of naturally occurring soils that have been contaminated with inorganic waste materials
Steel (packaging materials)	ST	55-gal (208-L) drums
Plastics (packaging materials)	PP	110-mil polyethylene drum liner and plastic bags

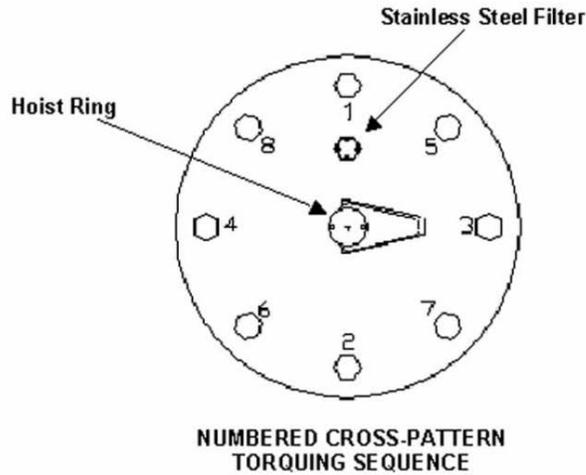
Attachment 2 – Weights for Standardized OSRP POC Packaging Configurations

Component	Estimated Component(s) Weight (kg)						
	WMP	Std. 55-gallon drum	Std. Pipe Overpack (12" pipe component)	S100 (6" pipe component plus end shield plugs and sleeve)	S200-A (12" pipe component plus 1" thick shielding insert)	S200-B (12" pipe component plus 0.6" thick shielding insert)	S300 (12" pipe component)
Std. 55-gallon drum	ST	27.7	27.7	27.7	27.7	27.7	27.7
Pipe component	ST	NA	82.0	39.2	82.0	82.0	82.0
110 mil rigid liner and liner lid with 7/8 inch hole	PP	NA	7.6	7.6	7.6	7.6	7.6
Outer cane fiberboard	C	NA	35.1	8.2	35.1	35.1	35.1
Internal POC insert (shield insert body and lid)	PP	NA	NA	9.9	NA	NA	39.2
	OM	NA	NA	NA	79.7	70.3	NA
Shield insert dunnage (Neutron Shielding, Water-Extended Polymer or equivalent)	OM	NA	NA	126.6	8.1	6.8	NA
TOTALS (kg)		27.7	152.4	219.2	240.2	229.5	191.6

Attachment 3 – POC Assembly 55-Gallon Drum Top View and Torque Sequence



6" POC Assembly 55-Gallon Drum



Attachment 4 – Container Packaging and Visual Examination Data Record  
BDR # \_\_\_\_\_

Container Identifier		
Printed name of VE Packager		
Printed name of VE Recorder		
Step	Requirement	Initials of VE Recorder and Date
1	Procedure used CCP-TP-069, R _____ Effective Date _____	
2	Indicate the container configuration used (refer to Attachment 2 for configuration types. <i>(check one)</i> ): <input type="checkbox"/> Standard Pipe Overpack (12" pipe component) <input type="checkbox"/> S100 <input type="checkbox"/> S200 (A or B) <input type="checkbox"/> S300 <input type="checkbox"/> Standard 55-gallon drum (no POC)	
3	<ul style="list-style-type: none"> <li>• Drum lid filter model: _____</li> <li>• Drum lid filter serial number: _____</li> <li>• Drum lid filter manufacture date: _____</li> <li>• POC lid filter model: _____</li> <li>• POC lid filter serial number: _____</li> <li>• POC lid filter manufacture date: _____</li> </ul>	
4	Verify based on VE: <ul style="list-style-type: none"> <li>• The sealed sources meet applicable regulatory definitions.</li> <li>• The outer casing is made of non-VOC bearing material, as the sources are placed in the container.</li> <li>• That each sealed source is, or is contained in, a rigid sealed container less than or equal to 4 liters in size.</li> <li>• That the items match the waste stream description, the waste matrix code, physical form/summary category group provided by AK.</li> <li>• That there are no non-packaging items placed in the container other than the source(s).</li> <li>• That there are no more than 2 layers of confinement.</li> <li>• The serial numbers on the POC and the lid match</li> </ul>	
5	Enter the Waste Matrix Code for the sealed sources, based on VE: _____	
6	POC Bolt Torque <ul style="list-style-type: none"> <li>• POC bolts tightened to _____ ft-lbs</li> <li>• Torque Wrench ID # _____</li> <li>• Calibration due date of torque wrench _____</li> </ul>	
7	Closure Ring Torque <ul style="list-style-type: none"> <li>• Drum ring bolts tightened to _____ ft-lbs</li> <li>• Torque Wrench ID # _____</li> <li>• Calibration due date of torque wrench _____</li> </ul>	

Attachment 4 – Container Packaging and Visual Examination Data Record –  
(Continued)  
BDR # \_\_\_\_\_

Container Identifier					
Record or verify the requested information for each sealed source as it is loaded into the container.					
Item #	OSRP Sealed Source Description and Identifier	WMP*	Estimated Weight (indicate grams)	Verified item information during VE Enter Y (yes) or N (no)	Comments (if any)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Total estimated weight (kg) for each WMP listed for above items				kg	
Total estimated weight for dunnage used within the payload area of the Standard POC or Standard 55-gallon drum, if any.				kg	
Container percent full.				%	
Total estimated weight for packaging configuration (using appropriate drum weight from Attachment 2)				kg	
Total estimated weight (kg) for loaded container				kg	

If the list of items is continued on additional pages, attach and number added pages (Page \_\_\_ of \_\_\_).  
 \* WMP categories are listed in Attachment 1 of CCP-TP-069; WMP should be OM for OSRP sealed sources. If a source is comprised of mixed WMPs, each WMP will be entered on a separate line.  
 † Conversion factors: 0.002205 pounds per gram; 453.59 grams per pound

Attachment 4 – Container Packaging and Visual Examination Data Record –  
(Continued)

BDR # \_\_\_\_\_

Page 3 of 3

Container Identifier	
NP	There are no indicators for the presence of the prohibited item in this container.
P	An indicator for the possible presence of the prohibited item has been observed. (If any condition is noted as present [or possibly present], note details in the comments section at the end of this form.)
Enter P or NP	Prohibited Hazardous Items or Conditions
	Liquid waste. Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination. Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited. Containers with HWN U134 shall have no observable liquid. Overpacking the outermost container, that was examined by radiography or visual examination, or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.
	Nonradionuclide pyrophoric material.
	Hazardous waste not occurring as co-contaminates with TRU mixed wastes.
	Waste incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes.
	Explosives.
	Compressed gas or potentially pressurized containers.
	Wastes with Polychlorinated Biphenyl (PCB) compounds not authorized under an EPA PCB Waste Disposal Authorization.
	Wastes exhibiting the characteristic of ignitability.
	Wastes exhibiting the characteristic of reactivity.
	Wastes exhibiting the characteristic of corrosivity.
	Radioactive pyrophorics greater than or equal to 1% by weight of the container that have not been rendered nonreactive.
	Inadequately blocked or braced sharp or heavy items.
	Sealed containers greater than 4 liters
Comments, including the identifiers of any relevant NCRs; and the description, WMP code, and weight of any dunnage used in the payload area of a Standard POC or a Standard 55-gallon drum.	
I certify that I have visually examined each item loaded into this container, and that the above information is correct. I also verify that no items other than those listed on this form have been placed into this container.	
_____	_____
Signature of VE Packager	Date
I certify that I have visually examined each item loaded into this container, and that the above information is correct. I also verify that no items other than those listed on this form have been placed into this container.	
_____	_____
Signature of VE Recorder	Date



Attachment 6 – Visual Examination Batch Data Report Table of Contents

**VE BDR LA -OSR-VE-**

Table of Contents		
Item	Description	Page No.
1	Visual Examination Batch Data Report Cover Page (Attachment 5)	
2	Visual Examination Batch Data Report Table of Contents (Attachment 6)	
3	Visual Examination Independent Technical Reviewer Review Checklist (Attachment 7)	
4	Container Packaging and Visual Examination Data Record(s) (Attachment 4)	
5	Weights for Standardized OSRP Packaging Configurations (Attachment 2)	
6	Copy of Acceptable Knowledge Documentation Identifier	
7	Copy of Sources in Special Form Capsules	
8	Copy of Radiological Contamination Surveys	
9	Copy of Special Form Documentation	
10	Copy of NCRs, if applicable	
11	Other information (if any; otherwise enter NA for page number)	

Attachment 7 – Visual Examination Independent Technical Reviewer Review Checklist  
Page 1 of 1

VE BDR LA -OSR-VE-

This review verifies that all quality assurance and quality control requirements are met at the data generation level as stated in this procedure.

Item	Criteria Met? Y/N/NA	Required Criterion
1.		Data generation and reduction were conducted in a technically correct manner in accordance with CCP-TP-069, as evidenced by checks of items 1a – 1f.
1a.		The correct revision of CCP-TP-069 was used? Note revision number, R_____.
1b.		Deviations, if any, have been documented. (Check N/A if there were no deviations.)
1c.		Data generation and reduction was conducted in accordance with CCP-TP-069 (i.e., all of the required items listed in Attachment 4 were completed and are accurate).
1d.		The weight data were reported in the correct units. (Note: Total weight must be reported in kilograms (Kg) and the weights of individual sealed sources are reported in grams.) Data are reported with the correct number of significant figures (one decimal place).
1e.		The WMPs identified during VE are consistent with those assigned to these materials based on AK.
1f.		The Waste Matrix Code is consistent with the AK.
2.		Calibration data for torque wrenches are recorded and within the calibration period.
3.		Calculations have been verified by 100% check of all hand calculations. <ul style="list-style-type: none"> <li>• Sum or waste material parameter weights</li> <li>• Estimated POC or waste weight</li> </ul>
4.		The data were reviewed for transcription errors and the data recorded is legible, accurate, and include any sample ID numbers.
5.		The forms in the VE BDR are complete and match the Table of Contents (Attachment 6).
6.		All NCRs relevant to the packaging of the loaded sealed sources were initiated and entered on the VE BDR.
7.		Precision: Was precision maintained by reconciling any discrepancies between the operator and the independent technical reviewer with regard to identification of waste matrix code, liquids in excess of TSDF-WAC limits, and compressed gases?
8.		Accuracy: Was accuracy maintained by requiring operators to pass a comprehensive examination and demonstrate satisfactory performance in the presence of the VE expert during their initial qualification and subsequent requalification (operators on LOQI)?
9.		Completeness: Is there a completed VE data form for each waste container in the BDR?

Comments, if "No" is checked for any criterion above:

Independent Technical Review conducted by:

\_\_\_\_\_  
VE Independent Technical Reviewer  
(Printed Name)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)