

CCP-TP-402

Revision 3

CCP

Nondestructive Examination Data Validation for Transportation

EFFECTIVE DATE: 08/13/2010

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PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	10/23/2008	Initial Issue.
1	11/18/2008	Revised to submit historical container information to Acceptable Knowledge Expert (AKE).
2	05/04/2009	Revised to add the real-time radiography (RTR) Technical Review and to make several other minor editorial/clarification changes.
3	08/13/2010	Revised to incorporate hazardous waste facility permit modifications. Independent Reviewer (IR) section was revised to resolve issues from Carlsbad Field Office (CBFO)- Corrective Action Report (CAR)-10-038.

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1.0 PURPOSE

Review of video/audio records of initial waste container packaging or real-time radiography (RTR) inspection for verification that the physical form matches the waste stream description (i.e., waste packaging, waste contents) assigned to the waste container and is consistent with process knowledge (PK) of the waste. The process is used to validate and document: packaging configurations, identify waste contents, and screen for prohibited items within a waste container.

1.1 Scope

This procedure applies to homogeneous solids, soils/gravel, and debris transuranic (TRU) waste containers that require certification for transport in an Intersite Shipment. This procedure specifies instructions for review and validation of nondestructive examination (NDE) of waste containers using video/audio records from initial waste packaging or RTR. It also specifies methods for documenting the validation for use in transportation certification in accordance with CCP-PO-401, *CCP Contact-Handled Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) for Intersite Shipments*.

2.0 REQUIREMENTS

2.1 References

Baseline Documents

- CCP-PO-005, *CCP Conduct of Operations*

Referenced Documents

- CCP-PO-401, *CCP Contact-Handled Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) For Intersite Shipments*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-008, *CCP Records Management*

2.2 Training Requirements

NOTE

Personnel doing reviews for Intersite shipments will be trained and qualified under CCP Training Program as RTR Operator or VE Operator.

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

2.3 Equipment List

2.3.1 Video/audio media system

2.4 Software

2.4.1 None

2.5 Precautions and Limitations

2.5.1 None

2.6 Prerequisite Actions

2.6.1 None

2.7 Definitions

2.7.1 **Independent Reviewer (IR)** – A Quality Assurance (QA) oversight function performed by independent individuals who review videotape of examined payload containers.

2.7.2 **Internal Container** – A container inside the outermost container examined during radiography or visual examination (VE). Drum liners, liner bags, plastic bags used for contamination control, capillary-type labware, and debris not designated to hold liquid at the time of original waste packaging are not internal containers.

2.7.3 **Observable Liquid** – Liquid that is observable using radiography or VE.

3.0 RESPONSIBILITIES

3.1 Small Quantity Site Waste Certification Official (SQS WCO)

3.1.1 Submits Host site video/audio recorded media and container data (historical container information) to Acceptable Knowledge Expert (AKE).

3.1.2 Notifies Host site by e-mail of drums that have UNSAT video/audio or FAIL, for prohibited items.

3.2 Real-Time Radiography (RTR) Operator

3.2.1 Reviews video/audio recorded media and documents a written record of the x-ray scan of the waste containers.

3.2.2 Completes Attachment 1, CCP NDE Review/Validation Report.

3.3 RTR Independent Reviewer (IR)

3.3.1 Reviews the video/audio recorded media.

3.3.2 Completes Attachment 2, CCP RTR Independent Review.

3.4 Visual Examination (VE) Operator

3.4.1 Reviews video/audio recorded media and documents a written record of the initial waste container packaging.

3.4.2 Completes Attachment 1.

3.5 CCP Records Custodian

3.5.1 Receives, processes, and maintains records generated by this procedure in accordance with CCP-QP-008, *CCP Records Management*.

4.0 PROCEDURE

NOTE

RTR video/audio reviews are completed using Section 4.2. Initial waste packaging video/audio reviews are completed using Section 4.5.

NOTE

All steps within Section 4.2 will be performed by a Central Characterization Project (CCP) qualified RTR Operator unless otherwise specified. All steps with Section 4.5 will be performed by a CCP qualified VE Operator unless otherwise specified.

SQS WCO

4.1 Host site NDE Data

- 4.1.1 Submit Host site video/audio recorded media and container data (historical container information), if applicable, to AKE.

RTR Operator

4.2 Review/Validation of RTR Video/Audio Container Data

- 4.2.1 Retrieve applicable video/audio waste container data copy provided from CCP Records, AKE, or Small Quantity Site Waste Certification Official (SQS WCO).
- 4.2.2 Record the results in Attachment 1, CCP NDE Review/Validation Report.

[A] Record the following data in Section 1 of Attachment 1:

[A.1] Check “√” the applicable review type: RTR Examination

[A.2] Host Site identification (ID)

[A.3] Review Date (Date of CCP Review)

[A.4] Examination Date

[A.5] Waste Container ID

- [A.6] Video/Audio Recorded Media Number
- [A.7] Procedure and Revision No.
- [A.8] Host Site Waste Stream ID
- [B] Record the following data in Section 2 of Attachment 1:
 - [B.1] Container Type
 - [B.2] Waste Category Group
 - [B.3] Waste Container Weights kilogram (kg), if available
 - (a) Gross weight (Wt)
 - [B.4] Rigid Liner and Liner Vent Description
 - (a) Describe both the rigid liner, **AND** liner vent description (e.g., “90 millimeter (mil) liner–NO Lid” or “NO Liner”)
 - [B.5] Estimated Number of Layers of Confinement

NOTE

The estimated Volume Utilization Percentage (VUP) of the container is based on the highest level of the bulk of the waste. Items (e.g., pipe, scrap angle, plastic bags) that protrude above the bulk of the waste are not to be included in the estimated VUP determination. The estimated VUP is to be recorded in five percent increments (e.g., 35%, 40%, 45%).

- [B.6] Record the estimated VUP.
- [C] Record the Waste Container ID on page 2 of Attachment 1, above Section 3.

- [D] Complete an itemized description of the waste inventory in the container in Section 3 of Attachment 1, including:
 - [D.1] Identification of blocking and/or bracing of sharp/heavy objects and heterogeneity of the waste (e.g., DO **NOT** just list plastic, describe it as small plastic bottles, plastic tubing, plastic sheeting, or plastic coveralls, etc.).
-

NOTE

To ensure the absence of prohibited items in the waste container, the quality of video/audio media must be confirmed. The video/audio media will be reviewed for a complete scan of the waste container, with a clarity that allows an accurate description of the waste contents.

4.2.3 Verify the video/audio recording media is satisfactory.

- [A] **IF** after completion of the review, the video/audio recorded media quality is satisfactory, **THEN** circle SAT in Section 4 of Attachment 1, **AND GO TO** step 4.2.5.
- [B] **IF** at any point during the review of the video/audio recorded media, the quality is determined **NOT** to be satisfactory, **THEN** record comments and circle UNSAT on Section 4 of Attachment 1, **AND GO TO** step 4.2.5[D].

NOTE

The potential exists for prohibited items to be present in the waste container based upon shapes seen in the image and the RTR Operator's knowledge of the waste stream. For example, if the PK for the waste stream **DOES NOT** indicate the presence of polychlorinated biphenyl (PCB) free light ballasts and a ballast is present in the container, the RTR Operator will have reason to believe that PCBs are present.

Liquids are prohibited.

Investigate the presence of liquids.

Internal containers (e.g., bottles, cans, etc.) shall have no more than 60 milliliters or three percent by volume, whichever is greater, observable liquid **AND** in no case shall the total observable liquid volume (i.e., the sum of all internal and/or outermost payload container volumes) exceed: >1 percent. The following are limitations:

- Two liters in a 55-gallon drum
 - Eight liters in a standard waste box (SWB) over-pack
 - 18 liters in a direct-loaded SWB
 - The total volume of residual liquid in a payload container shall be less than one volume percent of the payload container.
-

4.2.4 Record the Waste Container ID on page 3 of Attachment 1, above Section 5.

4.2.5 Using Table 1, Prohibited Items, as a reference, complete the checklist in Section 5 of Attachment 1 to confirm there are **NO** prohibited items in the waste container, **AND** record comment(s), as applicable.

-
- [A] **IF** any hazardous waste(s) **NOT** identified in the PK Summary Report(s) for the waste stream being characterized, **OR** any nonconforming/prohibited items are noted during the review of RTR, **THEN** perform the following:
- (a) Record a detailed description of the item(s), including location and volume of liquid, in the Comments block in Section 4 of Attachment 1.
 - (b) Circle FAIL in Section 4 of Attachment 1.

NOTE

The physical waste form requirements and waste stream descriptions for the waste stream being evaluated are found in the PK Summary Report.

- (c) **IF** the waste form **DOES NOT** match the Host site Waste Stream description, **THEN** record a detailed description, circle FAIL in Section 4 of Attachment 1.
- [B] **IF** the container video/audio review is completed satisfactorily, **THEN** circle PASS in Section 4 of Attachment 1, **AND** record comments, as applicable.
- [C] Review Attachment 1 for completeness and accuracy.
- [D] Print name, sign, and date Attachment 1.
- [E] Notify SQS WCO of any UNSAT video/audio or FAIL containers.

4.3 Independent Review (IR)

NOTE

The Independent Reviewer (IR) will be a qualified CCP RTR Operator who is not the original reviewer of the completed Attachment 1 and the IR shall be independent of the collection activities.

- [A] Retrieve applicable video/audio waste container data copy provided from CCP Records, AKE, or SQS WCO.
- [B] Retrieve signed Attachment 1.

- [C] Initiate an Attachment 2.
 - [C.1] Record the Waste Container ID.
 - [C.2] Verify that there are no prohibited items in the container.
 - [C.3] After completion of the independent review, circle PASS or FAIL on the Attachment 2.
 - [C.4] Notify SQS WCO of any containers that FAIL
- [D] Verify the Attachment 1 is satisfactory.
- [E] Print name, sign, and date Attachment 2.

4.3.2 Submit the NDE Review Documentation as follows:

- [A] Assemble all video/audio review data sheets.
- [B] Submit completed Attachment 1 and Attachment 2 to the CCP Records Custodian.

CCP Records Custodian

4.3.3 Receive, process, and maintain records in accordance with CCP-QP-008.

SQS WCO

4.3.4 Notify Host site, by e-mail, of any containers with unsatisfactory video/audio, or failures that container will not be shipped.

- [A] Notify AKE lead, by e-mail, to have container removed from the PK tracking spreadsheet.

SQS WCO

4.4 Host site VE Data

4.4.1 Submit Host site video/audio recorded media and container data (historical container information) to AKE.

VE Operator

4.5 Review/Validation of Initial Waste Packaging Video/Audio Container Data

4.5.1 Retrieve applicable video/audio waste container data copy provided from CCP Records, AKE, or SQS WCO.

4.5.2 Record the results in Attachment 1.

[A] Record the following data in Section 1 of Attachment 1:

[A.1] Check "√" the applicable review type: Initial Packaging

[A.2] Host Site ID

[A.3] Review Date (Date of CCP Review)

[A.4] Examination Date

[A.5] Waste Container ID

[A.6] Video/Audio Recorded Media Number

[A.7] Procedure and Revision No.

[A.8] Host Site Waste Stream ID

[B] Record the following data in Section 2 of Attachment 1:

[B.1] Container Type

[B.2] Waste Category Group

[B.3] Waste Container Weights (kg), if available:

(a) Gross Wt

|

[B.4] Rigid Liner and Liner Vent Description:

- (a) Describe both the rigid liner, **AND** liner vent description (e.g., “90 mil liner–NO Lid” or “NO Liner”).

[B.5] Estimated Number of Layers of Confinement

NOTE

The estimated VUP of the container is based on the highest level of the bulk of the waste. Items (e.g., pipe, scrap angle, plastic bags) that protrude above the bulk of the waste are not to be included in the estimated VUP determination. The estimated VUP is to be recorded in five percent increments (e.g., 35%, 40%, 45%).

[B.6] Record the estimated VUP

[C] Record the Waste Container ID on page 2 of Attachment 1, above Section 3.

[D] Complete an itemized description of the waste inventory in the container in Section 3 of Attachment 1, including:

[D.1] Identification of blocking and/or bracing of sharp/heavy objects and heterogeneity of the waste (e.g., **DO NOT** just list plastic, describe it as small plastic bottles, plastic tubing, plastic sheeting, or plastic coveralls, etc.).

NOTE

To ensure the absence of prohibited items in the waste container, the quality of video/audio media must be confirmed. The video/audio media will be reviewed for a complete scan of the waste container, with a clarity that allows an accurate description of the waste contents.

4.5.3 Verify the video/audio recording media is satisfactory.

[A] **IF** after completion of the review, the video/audio recorded media quality is satisfactory, **THEN** circle SAT in Section 4 of Attachment 1, **AND GO TO** step 4.5.5.

- [B] **IF** at any point during the review of the video/audio recorded media, the quality is determined **NOT** to be satisfactory, **THEN** record comments, circle UNSAT on Section 4 of Attachment 1, **AND GO TO** step 4.5.5[C]

NOTE

The potential exists for prohibited items to be present in the waste container based upon shapes seen in the image and the VE Operator's knowledge of the waste stream. For example, if the PK for the waste stream **DOES NOT** indicate the presence of PCB free light ballasts and a ballast is present in the container, the VE Operator will have reason to believe that PCBs are present.

Liquids are prohibited.

Investigate the presence of liquids.

Internal containers (e.g., bottles, cans, etc.) shall have no more than 60 milliliters or three percent by volume, whichever is greater, observable liquid **AND** in no case shall the total observable liquid volume (i.e., the sum of all internal and/or outermost payload container volumes) exceed: >1 percent. The following are limitations:

- Two liters in a 55-gallon drum
- Eight liters in a standard waste box (SWB) over-pack
- 18 liters in a direct-loaded SWB
- The total volume of residual liquid in a payload container shall be less than one volume percent of the payload container.

4.5.4 Record the Waste Container ID on page 3 of Attachment 1, above Section 5.

4.5.5 Using Table 1 as a reference, complete the checklist in Section 5 of Attachment 1 to confirm there are **NO** prohibited items in the waste container, **AND** record comment, as applicable.

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- [A] **IF** any hazardous waste(s) **NOT** identified in the PK Summary Report(s) for the waste stream being characterized, **OR** any nonconforming/prohibited items are noted during the review of Initial Packaging, **THEN** perform the following:
- (a) Record a detailed description of the item(s), including location and volume of liquid, in the Comments block in Section 4 of Attachment 1.
 - (b) Circle FAIL in Section 4 of Attachment 1, **AND** proceed to step 4.5.5[D].

NOTE

The physical waste form requirements and waste stream descriptions for the waste stream being evaluated are found in the PK Summary Report.

- (c) **IF** the waste form **DOES NOT** match the Host site Waste Stream description, **THEN** record a detailed description, circle FAIL in Section 4 of Attachment 1, **AND** return to Host site.
- [B] **IF** the container video/audio review is completed satisfactorily, **THEN** circle PASS in Section 4 of Attachment 1, **AND** record comments, as applicable.
- [C] Review Attachment 1 for completeness and accuracy.
- [D] Print name, sign, and date Attachment 1.
- [E] Notify SQS WCO of any UNSAT video/audio or FAIL containers.

4.5.6 Submit the NDE Review Documentation as follows:

- [A] Assemble all video/audio review data sheets.
- [B] Submit completed NDE Review/Validation Reports to the CCP Records Custodian.

CCP Records Custodian

4.5.7 Receive, process, and maintain records in accordance with CCP-QP-008.

SQS WCO

4.5.8 Notify Host site, by e-mail, of any containers with unsatisfactory video/audio, or failures that the container will not be shipped.

[A] Notify AKE lead, by e-mail, to have container removed from waste stream.

5.0 RECORDS

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

5.1.1 QA/Non-Permanent

[A] Attachment 1, CCP NDE Review/Validation Report(s)

[B] Attachment 2, CCP RTR Independent Review

Table 1. Prohibited Items

LIST OF PROHIBITED ITEMS
- Observable liquid shall be no more than 1 percent by volume of the outermost container.
- Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited.
- Containers with Hazardous Waste Number U134 assigned shall have no observable liquid.
Nonradioactive pyrophorics
Non-mixed hazardous waste
Incompatible wastes (Wastes that are incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, and/or other wastes).
Explosives
Compressed Gases / Pressurized containers (e.g., aerosol cans)
PCB (Present that are not authorized under a U.S. Environmental Protection Agency (EPA) PCB waste disposal authorization).
Ignitables
Corrosives
Reactive waste
Sealed containers greater than 4 liters
Heat sealed bags > 4 liters and < 390 sq. inches
Sharp or heavy objects not adequately blocked, braced, or packaged

Attachment 1 – CCP NDE Review/Validation Report

Section 1: General Information	
<input type="checkbox"/> RTR Examination	<input type="checkbox"/> Initial Packaging
Host Site ID:	
Review Date:	
Examination Date:	
Waste Container ID:	
Video/Audio Recorded Media Number:	
Procedure and Revision No.:	Rev.
Host Site Waste Stream ID:	
Section 2: Waste Container Data	
Container Type:	
Waste Category Group (i.e. Homogenous Solid, Soil/gravel, Debris)	
Waste Container Weights:	Gross Wt: _____ kg.
Rigid Liner and Liner Vent Description: (e.g., "90 mil liner – NO Lid" or "NO Liner")	
Estimated Number of Layers of Confinement:	
Estimated Volume Utilization Percentage:	_____ %

Attachment 1 – CCP NDE Review/Validation Report (Continued)

Page 2 of 3

Waste Container ID: _____

Section 3: Container Inventory and Comments (Detailed descriptions)

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Section 4: Review/Validation Results

Video/Audio Recording	SAT	UNSAT
Container Review/Validation	PASS	FAIL

Comments:

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Attachment 1 – CCP NDE Review/Validation Report (Continued)

Waste Container ID: _____

Section 5: NDE Review/Validation Summary (Questions answered "YES" will be explained in the Comments block)	Yes	No	N/A
Is there liquid in the container?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there any observable liquid in internal containers, more than 60 milliliters or 3 percent by volume, whichever is greater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the total volume of liquid in the container GREATER than 1% of the container?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there detectable liquid in payload containers with an EPA Hazardous Waste Number of U134?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an indication of non-radionuclide pyrophoric materials?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an indication of hazardous wastes not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous wastes)?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an indication of wastes incompatible with container and packaging materials, shipping container materials, or other wastes?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an indication of wastes containing explosives or compressed gases?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an indication of PCBs not authorized under an EPA PCB waste disposal authorization?	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an indication of the waste exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA Hazardous Waste Numbers of D001, D002, or D003)?	<input type="checkbox"/>	<input type="checkbox"/>	
Is the physical form of the waste inconsistent with the Host Site Waste Stream Description?	<input type="checkbox"/>	<input type="checkbox"/>	
Are there heat-sealed bags (unvented) GREATER than 4 liters and LESS than 390 square inches in the waste?	<input type="checkbox"/>	<input type="checkbox"/>	
Were there Non-approved Closure Methods used on liner bags or inner bags greater than 4 liters?	<input type="checkbox"/>	<input type="checkbox"/>	
Are there sealed containers GREATER than 4 liters?	<input type="checkbox"/>	<input type="checkbox"/>	
Are there indications of inadequate protection (blocked or braced) for heavy and/or sharp objects?	<input type="checkbox"/>	<input type="checkbox"/>	
Comments:			
NDE Reviewer:			
_____	_____	_____	
Print Name	Signature	Date	

| Attachment 2 – CCP RTR Independent Review

Page 1 of 1

Waste Container ID: _____

Based on independent review of audio/video of this container, it is determined that this container will:

PASS

FAIL

| Independent Reviewer:

Printed Name

Signature

Date