

WP 05-WH1083

Revision 7

CH Packaging Operations

Technical Procedure

EFFECTIVE DATE: 09/01/10

Randy Britain
APPROVED FOR USE

CONTINUOUS USE PROCEDURE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	ISSUED DATE	DESCRIPTION OF CHANGES
7	09/01/10	<ul style="list-style-type: none">● Added Precaution and Limitation bullet for the ACGLF lid placed anytime.● Added Precaution and Limitation bullet for the cycling of the vacuum valve.● Deleted Note above Step 1.2.8.

INTRODUCTION ¹

This procedure provides guidance for opening TRUPACT-IIs/HalfPACTs at the Waste Isolation Pilot Plant (WIPP) in support of contact-handled (CH) packaging maintenance activities and personnel training. This procedure is not used for loading or unloading payload assemblies containing transuranic (TRU) or TRU-mixed waste.

The following quality assurance record is generated as a result of performing this procedure:

- Attachment 1 - CH Packaging Disassembly Data Sheet

REFERENCES

BASELINE DOCUMENTS

- NRC-Docket-Number-71-9218, *Safety Analysis Report for the TRUPACT-II Shipping Package*
- NCR-Docket-Number-71-9279, *Safety Analysis Report for the HalfPACT Shipping Package*
- DOE/WIPP 02-3183, *CH Packaging Program Guidance*
- U.S. DOE Standard 1090-2007, *Hoisting and Rigging*
- WP 05-WH1011, CH Waste Processing
- WP 05-WH1015, Preparation of CH Packaging for Empty Shipment
- WP 05-WH4401, Waste Handling Operator Event Response
- WP 12-HP1100, Radiological Surveys
- WP 12-HP4000, Emergency Radiological Control Responses

REFERENCED DOCUMENTS

- DOE/WIPP 02-3184, *CH Packaging Operations Manual*

EQUIPMENT

- Inner containment vessel (ICV) vent port tool
- Outer containment vessel (OCV) vent port tool
- Radiological assessment filter (RAF) assembly
- Dry cloths

- Brushes
- Ladder

PRECAUTIONS AND LIMITATIONS

- Only personnel qualified as a Waste Handling Technician/Waste Handling Engineer (WHT/WHE), or trainees operating under direct supervision of a qualified WHT/WHE, are authorized to perform the waste handling activities specified in this procedure.
- ICV or OCA locking rings must not be rotated with mechanical force. Care must be used to prevent the locking ring from slamming into the stops.
- If procedure cannot be performed as written, WHE shall be contacted.
- Jack stands are required on freestanding trailers only when loading/unloading packaging on the trailer.
- Failure to rotate counter weights on ACGLF (adjustable center of gravity lifting fixture) to balance position may cause ACGLF to swing uncontrollably, resulting in equipment damage or personnel injury.
- ACGLF may be placed on lids at any time during process.
- Metal tools must not be used to remove O-rings.
- OCV/ICV lids shall be removed using a straight (vertical) pull; side pulls are not permitted.
- Cycling of the vacuum valve is permitted to ensure vacuum pressure is obtained.
- Performers of procedures may print name, sign, initial, and place date on Attachment 1 at any time during the performance of this procedure.
- Any step that results in N/A on Attachment 1 must be initialed by person performing the step.
- Forklift tip-back beyond level may damage package exterior surface.

PREREQUISITE ACTIONS

- 1.0 If required, configure TRUDOCK position to facilitate operations for specific type of CH package.
- 2.0 If required, dry packaging before transport to designated area.
- 3.0 Transfer packaging to designated area.

PERFORMANCE

1.0 OPENING CH WASTE PACKAGING

NOTE

Transport trailer operations, package loading and unloading from transport trailers, hoisting and rigging activities such as AGLF operations, equipment checkout and shutdown, and component inspection activities must be performed, but may be performed in any order and in parallel with other activities as long as radiological control steps are not bypassed. Steps involving outer container assembly (OCA)/ICV lid removal/installation and payload removal/loading may be performed in parallel if there are multiple operators working on the same packaging.

NOTE

The packaging loading/unloading operation shall only be performed in a dry environment. In the event of precipitation during outdoor operations, the OCV and ICV cavities shall be covered to prevent precipitation from entering the package interior cavities. If precipitation does enter the interior cavities, all freestanding water shall be removed before shipment and liquid handled according to the sites waste management procedures.

1.1 Outer Containment Assembly Lid Removal

- 1.1.1 Record OCA serial number on Attachment 1.

WH SIGN-OFF

- 1.1.2 Verify maintenance labels are legible and maintenance is current by checking maintenance labels adjacent to nameplate, and initial Attachment 1.

WH SIGN-OFF

- 1.1.3 **IF** Radiological Control Team Leader/Radiological Control Manager (RCTL/RCM) deems survey is necessary, **THEN** Radiological Control Technician (RCT), record survey number, survey date and any comments on Attachment 1.

RCT SIGN-OFF OR N/A

- 1.1.4 RCT, **IF** Step 1.1.3 is N/A, **THEN** N/A Steps 1.2.4, 1.2.8 and 1.2.22 on Attachment 1.

1.1.5 Prepare OCA lid by removing the following:

- OCA lid lift pocket covers, if not previously removed
- OCV lock ring bolts (6)
- OCA test port access plug and thermal plug
- OCA vent port access plug and thermal plug

NOTE

If OCA lid is turned so that the OCV seal test port plug is not accessible, Step 1.1.6 cannot be performed; User should proceed to Step 1.1.7.

1.1.6 Ensure OCV seal test port plug is fully seated.

1.1.7 Remove OCV vent port cover.

1.1.8 Remove OCV vent port plug.

CAUTION

To prevent weight from shifting, operator must ensure the two ACGLF counterweights are at 180 degrees and 000 degrees (± 2 degrees) **BEFORE** lifting ACGLF or lid.

1.1.9 Attach ACGLF to OCA lid.

1.1.10 Install OCV vent port tool.

1.1.11 Connect vacuum line to vent port tool.

1.1.12 Start vacuum pump and evacuate to 3 in. to 15 in. Hg vacuum gauge.

1.1.13 Rotate OCV lock ring to UNLOCKED position.

1.1.14 Stop vacuum pump.

1.1.15 Disconnect vacuum line from vent port tool.

1.1.16 Remove vent port tool.

1.1.17 Let OCV vent to atmosphere.

CAUTION

To avoid shearing of lid lift pins when lifting OCA lid, the crane load cell reading must NOT exceed 7,500 lb when weight of ACGLF is zeroed out, or 10,000 lb when weight of ACGLF is included.

1.1.18 Remove OCA lid.

1.1.19 **IF** lid does not lift off,
THEN perform the following:

[A] Contact WHE.

[B] **GO TO** DOE/WIPP 02-3184, Subsection 3.2, Using Heat Guns to Remove Stuck Lids; or Subsection 3.3, Pressurizing with Nitrogen or Compressed Air to Remove Stuck Lids; attempt to remove lid, and **RETURN TO** Step 1.1.20.

1.1.20 **IF** survey is necessary,
THEN RCT perform contamination survey of OCV lid interior and ICV lid exterior.

1.1.21 Place OCA lid on storage stand.

1.1.22 RCT, **IF REQUIRED**, monitor smears for gross levels of activity.

1.2 ICV Lid Removal

CAUTION

To prevent weight from shifting, operator must ensure two ACGLF counterweights are at 180 degrees and 000 degrees (± 2 degrees) **BEFORE** lifting ACGLF or lid.

1.2.1 Attach ACGLF to ICV lid.

1.2.2 Remove ICV vent port cover.

1.2.3 Remove the following:

- ICV outer vent port plug
- ICV seal test port plug
- OCV seal test port plug
- ICV lock ring bolts (3)

- 1.2.4 RCT, **IF REQUIRED**, verify activity on smears of OCA lid interior and ICV lid exterior are below limits requiring radiological controls.

RCT SIGN OFF OR N/A

- 1.2.5 **IF** RAF sample is not required
THEN remove ICV inner vent port plug **AND** proceed to Step 1.2.10.

NOTE

RAF samples may be taken if deemed necessary by Waste Handling Manager (WHM).

WARNING

ICV inner vent port plug **MUST NOT** be removed if torque is relieved prior to installing ICV vent port tool. Plug removal may result in contamination of personnel and area.

- 1.2.6 WH, **IF** RAF sample is to be taken,
THEN perform the following:
- [A] If required, relieve torque on ICV inner vent port plug.
 - [B] Install ICV vent port tool.
 - [C] Install RAF assembly onto ICV vent port tool.
 - [D] Install vacuum hose to RAF.
 - [E] Retrieve ICV inner vent port plug into ICV vent port tool.
 - [F] Start vacuum pump and evacuate to 3 to 15 in. Hg vacuum gauge.
 - [G] Rotate ICV lock ring to UNLOCKED position.
 - [H] Stop vacuum system.
 - [I] Disconnect vacuum line from RAF assembly.
 - [J] Remove RAF assembly from ICV vent port tool.

1.2.7 RCT, perform the following:

- [A] Contamination smear of RAF assembly quick connect.
- [B] Monitor smear and RAF for gross levels of contamination.
- [C] Place filter in Alpha-6 monitor with no flow, or into an equivalent instrument.
- [D] Let filter count for at least five minutes.
- [E] Examine spectrum for TRU activity.
- [F] If there is observable TRU activity, notify WHM, Central Monitoring Room Operator (CMRO), and **STOP** processing on affected TRUDOCK position.

1.2.8 RCT, verify activity on smears and RAF is below acceptable limits, if applicable.

RCT SIGN-OFF or N/A

1.2.9 WH, proceed to Step 1.2.16.

1.2.10 Install ICV vent port tool.

1.2.11 Connect vacuum line to vent port tool

1.2.12 Start vacuum pump and evacuate to 3 in. to 15 in. Hg vacuum gauge.

1.2.13 Rotate ICV lock ring to UNLOCKED position.

1.2.14 Stop vacuum pump.

1.2.15 Disconnect vacuum line from vent port tool.

1.2.16 Remove vent port tool.

1.2.17 Vent ICV to atmosphere.

CAUTION

To avoid shearing of lid lift pins when lifting ICV lid, the crane load cell reading must not exceed 5,000 lb when weight of ACGLF is zeroed out, or 7,500 lb when weight of ACGLF is included.

- 1.2.18 Remove ICV lid using ACGLF and crane.
- 1.2.19 **IF** lid does not lift off ICV,
THEN perform the following:
- [A] Contact WHE.
 - [B] **GO TO** DOE/WIPP 02-3184, Subsection 3.2, Using Heat Guns to Remove Stuck Lids; or Subsection 3.3, Pressurizing with Nitrogen or Compressed Air to Remove Stuck Lids; attempt to remove lid, and **RETURN TO** Step 1.2.16.
- 1.2.20 **IF** survey is necessary,
THEN RCT, perform contamination survey on ICV lid interior and ICV payload area.
- 1.2.21 Place ICV lid on storage stand.
- 1.2.22 RCT, **IF REQUIRED**, verify activity on smears of ICV lid interior and ICV payload area are below limits requiring radiological controls.

RCT SIGN-OFF or N/A

NOTE

Use of the ACGLF with short legs to remove items from the ICV is **NOT** permitted.

- 1.2.23 If applicable, remove items from ICV.
- 1.2.24 Performers of procedure, enter printed name, signature, date, and initials on Attachment 1.
- 1.2.25 WHE, perform the following:
- [A] Review Attachment 1 for completeness and sign Review/Validation block.
 - [B] Forward Attachment 1 to Records Coordinator.

Attachment 1 - CH Packaging Disassembly Data Sheet

Step No.	Action	Initial
1.1.1	OCA Serial Number: _____	WHT _____
1.1.2	Maintenance labels present and maintenance is current.	WHT _____
1.1.3	Survey Number: _____ Date: _____ Comments: _____	RCT or N/A _____
1.2.4	Activity on smears for OCA lid interior and ICV lid exterior are below limits requiring radiological controls.	RCT or N/A _____
1.2.8	Activity on smears and RAF are below acceptable limits.	RCT or N/A _____
1.2.22	Activity on smears for ICV lid interior are below limits requiring radiological controls.	RCT or N/A _____

Performers enter printed name, signature, date, and initials:

Print Name	Signature	Date	Initials
Print Name	Signature	Date	Initials
Print Name	Signature	Date	Initials

Remarks: _____

REVIEW/VALIDATION: _____

WHE: (Print Name) Signature Date