

# WP 05-WH1709

Revision 13

## RH-TRU 72-B Trailer Unloading

Technical Procedure

EFFECTIVE DATE: 05/20/10

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APPROVED FOR USE

**CONTINUOUS USE PROCEDURE**

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## INTRODUCTION<sup>1,2</sup>

This procedure provides instructions for unloading the remote-handled transuranic (RH-TRU) 72-B from the shipping trailer.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules.

- Attachment 1 - RH-TRU 72-B Trailer Unloading Sheet

## REFERENCES

### BASELINE DOCUMENTS

- Title 10 *Code of Federal Regulations* (CFR) Part 71, "Packaging and Transportation of Radioactive Material"
- 10 CFR Part 835, "Occupational Radiation Protection"
- 40 CFR Part 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions"
- NRC-Docket-71-9212, *RH-TRU Certificate of Compliance*
- NRC-Docket-71-9212, *Safety Analysis Report for the RH-TRU 72-B Waste Shipping Package*
- DOE Order 5400.5, *Radiation Protection of the Public and the Environment*
- DOE Standard 1090-2007, *Hoisting and Rigging*
- DOE/WIPP-02-3283, *RH Packaging Program Guidance*
- DOE/WIPP-02-3284, *RH Packaging Operations Manual*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- WIPP-023, *Fire Hazards Analysis For the Waste Isolation Pilot Plant Carlsbad, New Mexico*
- WP 08-PT.03, WIPP Quality Assurance Program Plan for Type B Packaging

- WP 08-PT.11, RH-TRU 72-B Cask Trailer Operation and Maintenance Manual
- WP12-FP.01, WIPP Fire Protection Program
- WP 12-FP3003, Combustible Loading Controls for the Waste Handling Building and Underground
- WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description

#### REFERENCED DOCUMENTS

- WP 04-AD3001, Facility Mode Compliance
- WP 05-WH1701, Road Cask Transfer Car Operation
- WP 05-WH1741, 140/25-Ton Remote Handling Crane 41-T-001
- WP 05-WH1744, Surface RH Transuranic Mixed Waste Handling Area Inspections
- WP 05-WH4401, Waste Handling Operator Event Response
- WP 12-HP1100, Radiological Surveys
- WP 12-HP4000, Emergency Radiological Control Responses
- WI-RH.03, Replacement/Repair of Lid Closure and Impact Limiter Attachment Bolts

#### EQUIPMENT

- Appropriate rigging for handling the RH-TRU 72-B
- Clean, dry rags, if applicable
- Water, if applicable
- Calibrated load cell capable of indicating a weight up to 5,000 lb
- GENIE manlift, if necessary
- Work assist vehicle (WAVE) manlift, if necessary
- Roll-around ladders
- Impact Limiter Stands

- Wheel chocks
- Trailer stands
- Brush, if applicable

## PRECAUTIONS AND LIMITATIONS

The Technical Safety Requirements (TSRs) contain Limiting Conditions for Operation (LCOs) and Specific Administrative Controls (SACs) which provide specific preventative or mitigative limits and required actions for identified accident scenarios. Failure to comply with LCOs or SACs may constitute a violation and must be immediately reported to the Facility Shift Manager (FSM). The step affected by the LCO/SAC is followed by the LCO/SAC number in bold brackets (e.g. [**LCO 3.X.X**]). Applicable LCO/SAC Surveillance Data Sheets SHALL be completed as required by WP 04-AD3001.

- Only personnel qualified on the RH-TRU 72-B as a Waste Handling Technician/Engineer (WHT/WHE), or trainees operating under the direct supervision of a RH-TRU 72-B qualified WHT/WHE, are authorized to perform the waste handling (WH) activities specified in this procedure.
- If procedure cannot be performed as written, WHE shall be contacted.
- Liquid-fueled vehicles loading or unloading RH shipping containers in the RH Bay SHALL BE ATTENDED at all times. [**LCO 3.4.1**]
- If abnormal conditions are found during the performance of this procedure, WHE shall be contacted.
- When RH-TRU 72-B is being rotated, all personnel should stand clear of trailer.
- Roll-around ladders should be used when accessing the trailer.
- Hearing and eye protection must be worn when using impact wrench.
- When performing lift operations with 140/25-ton crane, a tag line or stabilizing bar should be used.
- RH waste shall be transferred into the Waste Handling Building (WHB) via the RH Bay shield door.
- Trailer stands are required for freestanding trailers when loading/unloading packaging on the trailer.
- If WH activities are suspended or interrupted, the Transportation Engineer (TE) shall be contacted.

- Emergency Response events that require cessation of this procedure, such as a radiological event, are to be performed in accordance with WP 05-WH4401 and WP 12-HP4000.
- Maximum allowable weight of loaded canister is 8,000 lb.
- Maximum allowable gross shipping weight for loaded packaging, including tractor and trailer, is 80,000 lb.
- A spotter must be used when the trailer jockey or transport tractor are used to position the trailer into, or remove a trailer from, the RH Bay.
- Doors 145 and 146 must be closed prior to bringing the RH-TRU 72-B Trailer into the RH Bay or removing the trailer from the RH Bay with the trailer jockey or transport tractor.
- Maximum individual RH-TRU 72-B weight is 45,000 lb.
- Any step that results in N/A on Attachment 1 must be initialed by person performing step.
- Performers of procedure may print, sign, initial, and place date on Attachment 1 at any time during the performance of this procedure, except for those steps which document compliance to an LCO.
- The storage limit in the RH Bay is two loaded RH packages and one site-derived waste drum.
- Loaded RH packages shall not be stored in the RH Bay for longer than 60 days.
- A minimum spacing of 44 in. shall be maintained between loaded RH packages in the RH Bay.
- All toolboxes/storage compartments on trailer must be inspected for prohibited items before staging trailer in RH Bay.

## PREREQUISITE ACTIONS

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### NOTE

Prerequisite actions must be performed, but may be performed in any order and in parallel as long radiological control steps are not bypassed.

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#### 1.0 WHE, perform the following:

- Ensure the applicable section of WP 05-WH1744 has been completed, if necessary.

- Ensure WP 05-WH1741 preoperational checks are completed.
- Ensure WP 05-WH1701 preoperational checks are completed, if necessary.
- Ensure preoperational checks are completed on the GENIE and WAVE manlifts, if necessary.
- Ensure impact limiter stands are available in RH Bay.
- Obtain RH-TRU 72-B release for unloading from TE.
- Enter shipment arrival date into the Waste Isolation Pilot Plant (WIPP) Waste Information System/Waste Data System (WWIS/WDS), as provided by TE.
- Obtain WWIS/WDS Shipment Summary Report.

2.0 WH, perform the following:

- Record Outer Container (OC) serial number on Attachment 1.
- Record load cell identification number (ID) and calibration due date on Attachment 1.

**SIGN-OFF WH**

3.0 WASTE HANDLING MODE VERIFICATION

3.1 WH, verify adequate waste handling operations staff is available to support RH Waste Handling.

**SIGN-OFF WH**

3.2 WH, verify WHB is configured for RH WH mode.

**SIGN-OFF WH or N/A**

3.3 WH, initial Attachment 1 when CMRO announces RH WH mode.

**SIGN-OFF WH or N/A**

**PERFORMANCE**

1.0 RH-TRU 72-B TRAILER HANDLING

1.1 Inspect any toolboxes/storage compartments for prohibited items.

**CAUTION**

A physical check must be made to ensure air bags on trailer have fully inflated before trailer is moved by a user-site trailer jockey. Failure to do so may damage the trailer.

**CAUTION**

A spotter must be used when backing trailer into RH Bay to avoid equipment damage.

**NOTE**

The Trailer Jockey fifth wheel may be used to assist the leveling of the trailer.

1.2 **IF** transport trailer is not positioned in the RH Bay, **THEN** back trailer into RH Bay using the liquid-fueled tractor or trailer jockey **AND** document start of attendance. **[LCO 3.4.1]**

**SIGN-OFF WH or N/A**

**WARNING**

Trailer wheels shall be chocked anytime prior to the performance of Step 1.7, ensuring safety of personnel during the performance of this procedure.

1.3 Ensure trailer wheels are chocked.

1.4 Visually verify no sharp edges exist on the crank handles.

**CAUTION**

Although the trailer is equipped with landing gear, unloading the trailer on level ground is recommended. Trailer tires should never be lifted off the ground using the landing gear to avoid damage to the equipment.

- 1.5 Ensure front landing gear is lowered.
- 1.6 Remove liquid-fueled tractor or trailer jockey from the RH Bay and document end of attendance. **[LCO 3.4.1]**

**SIGN-OFF WH or N/A**

- 1.7 WH, perform the following:
  - Ensure trailer wheels are chocked.
  - Install trailer stands on freestanding trailers.
  - Lower rear landing gear.
  - Install applicable work platforms on trailer (optional).
  - Ensure center trunnion cap shelves are installed.

**CAUTION**

Although the trailer is equipped with landing gear, unloading the trailer on level ground is recommended. Trailer tires should never be lifted off the ground using the landing gear to avoid damage to the equipment.

- 1.8 If necessary, adjust landing gear until RH-TRU 72-B is level, using a hand-held level or leveling indicators on trailer.
- 1.9 If needed, clean RH-TRU 72-B using:
  - Damp wiping cloths
  - Brush and water
- 1.10 If needed, dry RH-TRU 72-B using dry rags.
- 1.11 Ensure Door 109 is closed.

1.12 Radiological Control Technician (RCT), record survey number/date on Attachment 1, if necessary.

**SIGN-OFF RCT or N/A**

2.0 RH-TRU 72-B IMPACT LIMITER REMOVAL

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**NOTE**

Trailer work platforms, both front and rear, may be removed or installed as necessary to accommodate impact limiter removal.

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**NOTE**

Waste Handling activities may be performed in any order or in parallel with other activities as long as radiological control steps are not bypassed.

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2.1 WH, verify anti-tamper seal is in place and installed properly, **IF NOT**, contact WHE for resolution and **THEN** record findings in the Remarks section of Attachment 1, if applicable.

**SIGN-OFF WH or N/A**

2.2 For a loaded shipment, remove and dispose of security seal.

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**NOTE**

Removal of bolt, nut, and flat washers may be performed out of sequence, as long as they are removed prior to attaching rigging.

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2.3 Remove the bolt, flat washers, and nut from each lifting lug on **LOWER AND UPPER** impact limiters.

2.4 Attach rigging (two shackles and two slings, each rated to lift a minimum of 2,500 lb) and load cell to **LOWER** impact limiter.

**CAUTION**

Exceeding a pull limit of 4,000 lb may damage the RH-TRU 72-B impact limiter lifting lugs. Average weight of impact limiter is 2,560 lb.

**CAUTION**

A spotter must be used when removing **LOWER** impact limiter.

- 2.5 Lift up on rigging until weight of impact limiter has been lifted.
- 2.6 Detension attachment bolts following number sequence one at a time until all bolts have been turned a maximum of one full turn.

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**NOTE**

Bolts may be left in the impact limiter access ports after being detached from the RH-TRU 72-B.

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- 2.7 **IF** bolt(s) will not unscrew, contact WHE,  
**THEN** use WI-RH.03 to remove stuck bolts.
- 2.8 Completely unscrew attachment bolts from inserts until all bolts are loose.
- 2.9 Remove work platform from trailer.
- 2.10 RCT, perform dose rate surveys during impact limiter removal, per WP 12-HP1100, if applicable.

**CAUTION**

Exceeding a pull limit of 4,000 lb may damage the RH-TRU 72-B impact limiter lifting lugs. Average weight of impact limiter is 2,560 lb.

**CAUTION**

A spotter must be used when removing **LOWER** impact limiter.

2.11 Remove **LOWER** impact limiter by using the crane to slide it off the RH-TRU 72-B body.

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**NOTE**

At the discretion of the operator, the crane may be operated in **MICRO** or **NORMAL** mode at any performance step except when noted.

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2.12 Place **LOWER** impact limiter on storage cradle on trailer **OR** on the impact limiter stand.

2.13 Remove rigging from **LOWER** impact limiter.

2.14 RCT, perform the following, if applicable:

2.14.1 Perform contamination smears on newly exposed areas of the RH-TRU 72-B.

2.14.2 Monitor smears for gross levels of activity.

2.14.3 Verify, on Attachment 1, that activity on smears is below the acceptable limits.

**SIGN-OFF RCT or N/A**

2.15 Attach rigging (two shackles and two slings, each rated to lift a minimum of 2,500 lb) and load cell to **UPPER** impact limiter.

**CAUTION**

Exceeding a pull limit of 4,000 lb may damage the RH-TRU 72-B impact limiter lifting lugs. Average weight of impact limiter is 2,560 lb.

**CAUTION**

A spotter must be used when removing UPPER impact limiter.

- 2.16 Once rigging is attached, ensure crane control is on MICRO.
- 2.17 Lift up on rigging until weight of impact limiter has been lifted.

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**NOTE**

Tension may be placed on rigging, as necessary, to assist with bolt removal.

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- 2.18 Detension attachment bolts following number sequence one at a time until all bolts have been turned a maximum of one full turn.
- 2.19 **IF** bolt(s) will not unscrew, contact WHE,  
**THEN** use WI-RH.03 to remove stuck bolts.

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**NOTE**

Bolts may be left in the impact limiter access ports after being detached from the RH-TRU 72-B.

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- 2.20 Completely unscrew attachment bolts from inserts until all bolts are loose.
- 2.21 RCT, perform dose rate surveys during impact limiter removal, if applicable.

**CAUTION**

Exceeding a pull limit of 4,000 lb may damage the RH-TRU 72-B impact limiter lifting lugs. Average weight of impact limiter is 2,560 lb.

**CAUTION**

A spotter must be used when removing **UPPER** impact limiter.

2.22 Remove **UPPER** impact limiter by using the crane to slide it off the RH-TRU 72-B body.

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**NOTE**

At the discretion of the operator, the crane may be operated in **MICRO** or **NORMAL** mode at any performance step except when noted.

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2.23 Place **UPPER** impact limiter on storage cradle on trailer **OR** on the impact limiter stand.

2.24 Remove rigging from **UPPER** impact limiter.

2.25 RCT, perform the following, if applicable:

2.25.1 Perform contamination smears on newly exposed areas of the RH-TRU 72-B.

2.25.2 Monitor smears for gross levels of activity.

2.25.3 Verify, on Attachment 1, that activity on smears is below the acceptable limits.

**SIGN-OFF RCT or N/A**

3.0 REMOVAL OF RH-TRU 72-B FROM TRAILER

3.1 Engage crane hook to lifting yoke.

3.2 WH, place trunnion inserts on rear trunnions.

**CAUTION**

Crane must be centered on RH-TRU 72-B before attempting to lift RH-TRU 72-B off trailer to prevent damage to RH-TRU 72-B or trailer.

- 3.3 WH, perform the following:
- Remove the caps from RH-TRU 72-B center support trunnions and place on shelves.
  - Engage upper trunnions with lifting yoke.

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**NOTE**

A spotter must be used when rotating the RH-TRU 72-B.

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**WARNING**

Personnel must stay clear of trailer while RH-TRU 72-B is rotating to prevent injury.

- 3.4 Rotate the RH-TRU 72-B to vertical position about its forward support trunnions.
- 3.5 Remove forward trunnion caps.

**CAUTION**

Crane must be centered on RH-TRU 72-B before attempting to lift it off trailer. If not centered, it could cause RH-TRU 72-B to lift off unevenly and damage the trailer.

- 3.6 Remove RH-TRU 72-B from the trailer, and place on the Cask Transfer Car or storage rack supported by center trunnion.
- 3.7 Disengage the lifting yoke from the RH-TRU 72-B.
- 3.8 WH, perform the following:
- Remove the lifting yoke from the 140/25-ton crane.
  - Placard trailer for empty shipment.
- 3.9 Enter printed name, signature, date, and initials on Attachment 1.

3.10 Back liquid-fueled tractor or trailer jockey into RH Bay, attach to trailer, and document start of attendance. **[LCO 3.4.1]**

**SIGN-OFF WH or N/A**

3.11 With liquid-fueled tractor or trailer jockey attached, remove from the RH Bay, and document end of attendance. **[LCO 3.4.1]**

**SIGN-OFF WH or N/A**

4.0 REVIEW

4.1 WHE, perform the following:

4.1.1 Review Attachment 1 for completeness and sign Review/Validation block.

4.1.2 Forward Attachment 1 to Records Coordinator.

Attachment 1 - RH-TRU 72-B Trailer Unloading Sheet

STEP	DESCRIPTION	INITIAL
PREREQUISITE ACTIONS		
2.0	OC Serial No. _____ Load Cell ID No. _____ Calibration due date: _____	WH WH WH
3.1	Adequate WHO staff available to support RH WH.	WH
3.2	WHB is configured for RH WH mode.	WH or N/A
3.3	CMR announced RH WH mode	WH or N/A
PERFORMANCE		
1.2	<b>IF</b> transport trailer is not positioned in the RH Bay, <b>THEN</b> back trailer into RH Bay using the liquid-fueled tractor or trailer jockey <b>AND</b> document start of attendance. <b>[LCO 3.4.1]</b>  Sign:_____ Date:_____ Time:_____	WH or N/A
1.6	Remove liquid-fueled tractor or trailer jockey from the RH Bay and document end of attendance. <b>[LCO 3.4.1]</b>  Sign:_____ Date:_____ Time:_____	WH or N/A
1.12	Survey number/date _____	RCT or N/A
2.1	Anti-tamper seal is in place and properly installed.	WH or N/A
2.14.3	Activity is below acceptable limits.	RCT or N/A
2.25.3	Activity is below acceptable limits.	RCT or N/A
3.10	Back liquid-fueled tractor or trailer jockey into RH Bay, attach to trailer, and document start of attendance. <b>[LCO 3.4.1]</b>  Sign:_____ Date:_____ Time:_____	WH or N/A
3.11	With liquid-fueled tractor or trailer jockey attached, remove from the RH Bay, and document end of attendance. <b>[LCO 3.4.1]</b>  Sign:_____ Date:_____ Time:_____	WH or N/A

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

Remarks: \_\_\_\_\_  
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Review/Validation: \_\_\_\_\_  
WHE (Print Name) Signature Date