

# WP 05-WH1712

Revision 3

## RH-TRU 72-B Cask Operation

Technical Procedure

EFFECTIVE DATE: 05/20/10

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APPROVED FOR USE

**CONTINUOUS USE PROCEDURE**

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## INTRODUCTION<sup>1</sup>

This procedure provides guidance for opening the RH-TRU (remote-handled transuranic) 72-B at the Waste Isolation Pilot Plant (WIPP) in support of maintenance activities and personnel training. This procedure is not used for loading or unloading payload assemblies.

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, Sign-Off Sheet

## REFERENCES

### BASELINE DOCUMENTS

- DOE Standard 1090-2004, *Hoisting and Rigging*
- Docket #71-9212, *Safety Analysis Report for the RH-TRU 72-B Road Cask Shipping Package*
- DOE/WIPP-02-3283, *Remote Handled (RH) Packaging Program Guidance*
- DOE/WIPP-02-3284, *Remote Handled (RH) Packaging Operations Manual*
- WP 08-PT.03, Waste Isolation Pilot Plant Quality Assurance Program Plan for Type "B" Packaging

### REFERENCED DOCUMENTS

- WP 05-WH1701, Road Cask Transfer Car Operation 41-T-157
- WP 05-WH1714, RH Cask Preparation Station 41-Z-076
- WP 05-WH1741, 140/25-Ton Remote Handling Crane 41-T-001
- WP 05-WH1746, 2.5-Ton Jib Crane 41-T-201
- WP 05-WH4401, Waste Handling Operator Event Response
- WP 12-HP1100, Radiological Surveys
- WP 12-HP4000, Emergency Radiological Control Responses

## EQUIPMENT

- Calibrated Load Cell
- Appropriate rigging for lid operations
- Outer Containment (OC) Lid Lift Fixture
- Test Port tool
- Quick Connect Insert
- Radiological Assessment Filter (RAF) Assembly
- OC Lid Stand
- Inner Containment Vessel (IV) Lid Stand
- 15/16 in. 12 point socket
- 7/8 in. 6 point hex bit

## PRECAUTIONS AND LIMITATIONS

- RH-TRU 72-B that have been used for TRU-mixed waste shipments may be contaminated within the IV.
- Only personnel qualified on the RH-TRU 72-B as a Waste Handling Technician/Engineer (WHT/WHE), or trainees operating under direct supervision of a RH-TRU 72-B qualified WHT/WHE, are authorized to perform the waste handling (WH) activities specified in this procedure.
- The opening operation shall only be performed in a dry (no precipitation) environment. In the event of sudden precipitation during outdoor operations, precautions, such as covering the OC and IV cavities, shall be implemented to prevent water from entering the cavities. If precipitation enters the cavities, the free-standing water shall be removed.
- Quality Assurance (QA) is to be notified of any abnormal conditions found during inspections.
- If procedure cannot be performed as written, WHE shall be contacted.
- 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.

- Activities involving abnormal events that require cessation of this procedure, such as a radiological event, shall be performed in accordance with WP 05-WH4401 and WP 12-HP4000.

## PREREQUISITE ACTIONS

1.0 WHE, Verify all preoperational checks have been completed on the following:

- 140/25-Ton Remote Handling Crane 41-T-001 per WP 05-WH1741
- Road Cask Transfer Car 41-T-157 per WP 05-WH1701
- 2.5-Ton Jib Crane 41-T-201 per WP 05-WH1746
- Cask Preparation Station 41-Z-076 per WP 05-WH1714

## PERFORMANCE

1.0 OC LID REMOVAL

1.1 Ensure Cask Transfer Car with RH-TRU 72-B Cask is positioned in prep stand.

1.2 Record the following on Attachment 1:

- RH-TRU 72-B Serial Number
- Load Cell ID Number and Calibration Due Date

## SIGN-OFF WH

1.3 **IF** Radiological Control Superintendent/Radiological Control Manager (RCS/RCM) deems survey is necessary, **THEN** Radiological Control Technician (RCT), record survey number, date, and any remarks on Attachment 1.

## SIGN-OFF RCT or N/A

1.4 RCT, **IF** Step 1.3 is N/A, **THEN** N/A Steps 2.2.16 and 2.14.

1.5 Install test port tool and quick connect insert into OC lid gas sampling port turning collar as necessary to seat tool in test port.

1.6 Unscrew the OC gas sampling port closure bolt, using test port tool.

1.7 Wait for pressure to equalize.

1.8 Remove test port tool from OC lid gas sampling port closure bolt.

- 1.9 Detention 18 closure bolts following number sequence in a star pattern on lid, one at a time until all bolts have been turned at least one full turn.
- 1.10 Remove the 18 closure bolts from the OC lid.
- 1.11 Connect appropriate lid lift fixture and load cell to the OC lid and Jib Crane.

**CAUTION**

Exceeding a crane load cell indication of 3,670 lb while lifting OC lid by lift points may damage the cask. Exceeding 3,670 lb can be an indication of lid binding. Average weight of the OC lid is 1,580 lb.

- 1.12 **IF** the OC lid does **NOT** release, **STOP**, and **THEN** contact WHE and Packaging Maintenance Engineer.
- 1.13 Remove the OC lid.
- 1.14 **IF** survey is necessary, **THEN** RCT perform contamination smears of OC lid interior and IV lid exterior per WP 12-HP1100.
- 1.15 Place the OC lid on the storage stand.
- 1.16 Remove the OC lid lift fixture.
- 1.17 RCT, if required, monitor smears for gross level activity.
- 1.18 RCT, if required, verify activity on smears of OC lid interior and IV lid exterior is below acceptable limits.

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

## 2.0 IV LID REMOVAL

### CAUTION

Socket wrenches used on IV lid must have rubber handle covers to help protect OC seal surfaces from gouges and dings. (If socket wrench has an extension that puts it above lip of cask, a rubber cover is not required.)

- 2.1 WH, **IF** RAF sample is not going to be taken,  
**THEN, GO TO** Step 2.3.

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### NOTE

RAF samples may be taken if deemed necessary by RCT or WHM.

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- 2.2 WH, **IF** RAF sample is to be taken,  
**THEN** perform the following:
- 2.2.1 Install test port tool and RAF assembly on the gas sampling port closure bolt turning collar as necessary to seat tool in test port.
  - 2.2.2 Unscrew the IV lid gas sampling port closure bolt.
  - 2.2.3 Place vacuum pump switch on PUMP and MAGNET.
  - 2.2.4 Evacuate sufficient amount to make TRU activity determination on multi-channel analyzer (MCA) or as directed by RCT.
  - 2.2.5 Turn vacuum pump switch to OFF.
  - 2.2.6 Disconnect vacuum line from RAF assembly.
  - 2.2.7 Remove RAF assembly from test port tool.
  - 2.2.8 RCT, perform contamination smear of RAF assembly quick connect.
  - 2.2.9 Remove filter from RAF assembly.
  - 2.2.10 Monitor smear and RAF for gross level of activity.
  - 2.2.11 Place filter in Alpha-6 monitor with no flow, or into an equivalent MCA instrument.
  - 2.2.12 Let filter count at least five minutes on Alpha-6 monitor or the determined amount of time for an equivalent MCA instrument.
  - 2.2.13 Examine for TRU activity.

2.2.14 **IF** there is observable TRU activity, **STOP** and notify WHM, Central Monitoring Room Operator (CMRO), and RCM.

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**NOTE**

Additional RAF samples may be taken as directed by WHM or RCM to determine TRU activity.

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2.2.15 RCT, if required record the following on Attachment 2, Radiological Survey Report, Section B, of WP 12-HP1100.

- Time
- Pu<sup>239</sup> counts per minute (cpm)
- Peak channel or peak energy, as applicable

2.2.16 RCT, if required, verify activity on smear and RAF is below acceptable limits.

**SIGN OFF RCT or N/A**

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**NOTE**

IV lid port closure bolts may be removed in any order.

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- 2.3 Remove the IV lid gas sampling port closure bolt.
- 2.4 Remove the IV lid backfill port closure bolt.
- 2.5 Remove the IV lid seal test port closure bolt.
- 2.6 Detention the eight IV lid closure bolts following the number sequence in a star pattern on lid until bolts are retracted into springs.
- 2.7 Connect the appropriate lid lift fixture and load cell to the IV lid.

**CAUTION**

Exceeding a crane load cell indication of 2,390 lb while lifting IV lid by lift points may damage the RH-TRU 72-B. Exceeding 2,390 lb can be an indication of lid binding. Average weight of the IV lid is 1,330 lb.

2.8 **IF** the IV lid does **NOT** release, **STOP**, and **THEN** contact WHE.

2.9 Remove the IV lid.

- 2.10 **IF** survey is necessary,  
**THEN** RCT perform contamination smears of IV lid interior and Cask interior.
- 2.11 Place the IV lid on the storage stand.
- 2.12 Remove the lid lift fixture.
- 2.13 RCT, if required, monitor smears for gross level activity.
- 2.14 RCT, if required, verify activity on smears of IV lid interior and IV body interior is below acceptable limits.

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

2.14.1 **GO TO** Attachment 1, enter the following information:

- Printed name
- Signature
- Date
- Initials

3.0 REVIEW

3.1 WHE, perform the following:

- 3.1.1 Review Attachment 1 for completeness.
- 3.1.2 Sign review/validation block.
- 3.1.3 Forward Attachment 1 to Records Coordinator.

