

# WP 05-WH1758

Revision 8

## RH Waste Handling Abnormal Operations

Technical Procedure

EFFECTIVE DATE: 06/22/10

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APPROVED FOR USE

**CONTINUOUS USE PROCEDURE**

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**INTRODUCTION** <sup>1, 2, 3, 4, 5</sup>

This procedure provides instructions for abnormal operations that may be needed for remote-handled (RH) waste handling. Sections are provided for the following abnormal operations: operating the Hot Cell Crane in response to a hoist, trolley, bridge or grapple failure; installing and removing the Waste Transfer Machine Assembly (WTMA) wheels; retrieving a loaded RH-TRU (transuranic) 72-B from the Transfer Cell; returning a loaded CNS10-160B Cask to a generator site; and resetting the Transfer Cell Light Curtain.

Entry into this procedure will be determined by the Waste Handling Manager (WHM), Radiological Control Manager (RCM), Waste Handling Engineer (WHE), or Radiological Control Superintendent.

Performance of this procedure generates the following records, as applicable:

- Attachment 1 - RH-TRU 72-B Loading Data Sheet
- Attachment 2 - CNS10-160B Cask Data 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"
- 49 CFR Part 173, "General Requirements for Shipments and Packaging"
- DOE Order 5400.5, *Radiation Protection of the Public and the Environment*
- DOE Standard 1090-2007, *Hoisting and Rigging*
- NRC-Docket-71-9204, *Safety Analysis Report for the CNS 10-160B Shipping Package*
- 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*
- WTSD-TME-044, *Horizontal Emplacement and Retrieval Equipment Operation and Maintenance Manual*
- DOE/WIPP-02-3283, *RH Packaging Program Guidance*

- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- DOE/WIPP-09-3427, *Waste Data System User's Manual*
- Safety Analysis Report for Chem-Nuclear Systems Model CNS10-160B Type B Radwaste Shipping Cask
- WP 04-IM1000, Issues Management Processing of WIPP Forms

#### REFERENCED DOCUMENTS

- DOE/WIPP-02-3284, *RH Packaging Operations Manual*
- WP 05-WH1704, Facility Cask Transfer Car (41-H-003) Operation
- WP 05-WH1710, 72-B RH Processing
- WP 05-WH1717, Cask Unloading Room Shield Door Operation
- WP 05-WH1722, 10-160B RH Processing
- WP 05-WH1724, RH Hot Cell Complex Key Control
- WP 05-WH1743, Bridge Mounted Power Manipulator 41-T-101
- WP 05-WH1744, Surface RH Transuranic Mixed Waste Handling Area Inspections
- WP 05-WH1745, CNS 10-160B Trailer Loading
- WP 05-WH4401, Waste Handling Operator Event Response
- WP 08-NT3001, Volume Control of Parking Area Storage Unit
- WH 08-NT3111, Return of TRU Waste to the Generator
- WH 12-HP1100, Radiological Surveys
- WP 12-HP4000, Emergency Radiological Control Responses
- EA04AD3001-SR23, Surveillance Data Sheet
- EA04AD3001-SR37, Surveillance Data Sheet

## 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 per WP 04-AD3001.
- Only personnel qualified as a RH-TRU 72-B or CNS10-160B Cask Waste Handling Technician/Engineer (WHT/WHE), or trainees operating under the direct supervision of a qualified RH-TRU 72-B or CNS10-160B Cask WHT/WHE, are authorized to perform the waste handling (WH) activities involving the respective cask specified in this procedure.
- Each section of this procedure may be performed to conduct specific operations necessary to recover from an abnormal event or to allow for waste handling operations (WHO) to continue. Sections are not required to be performed in sequence except when radiological control steps are required.
- Abnormal events that require the cessation of this procedure, such as radiation/contamination levels above expected levels or loss of building ventilation, are to be addressed in accordance with WP 12-HP4000 and WP 05-WH4401.
- If additional abnormal conditions occur while performing this procedure, user shall stop work, and notify WHE.
- WP 08-NT3001 shall be used if WH activities are suspended or interrupted.
- The loading/unloading operation shall be performed only in a dry (no precipitation) environment. In the event of sudden precipitation during outdoor loading operations, precautions, such as covering the cavities, shall be implemented to prevent water from entering the cavities. If precipitation does enter interior cavities, all freestanding water shall be removed prior to loading package for shipment and handling according to the site's waste management procedure.
- A maximum of two loaded RH-TRU 72-B may be stored in RH Bay at any one time.

- While extending or retracting the Staging Platform (SP) or the Transfer Carriage (TC) on the Horizontal Emplacement and Retrieval Equipment (HERE), the operators must be alert to prevent personnel from being caught between the moving parts.
- Approximate weight of Facility Grapple is 350 lb.
- Once the HERE Control Console (CC) is set up and power is available, the CC must not be left unattended with the POWER switch turned **ON**.
- During HERE operations, the WHE will control the administrative Controlled Override Key.
- Spotters are required to assist the forklift drivers in maneuvering the facility cask and shield plug carriage (SPC) into place using standard forklift hand signals.
- Transfer mechanism (TM) position and hydraulic pressure are indicated on the HERE CC on digital displays.
- The Alignment Fixture Assembly (AFA) and the TC locking mechanisms switches must be held for at least 15 seconds to ensure full rotation of all locking mechanisms.
- Access to the Hot Cell complex will be conducted in accordance with WP 05-WH1724.
- RH-TRU 72-B that have been used for TRU mixed waste shipments are potentially contaminated within the Inner Containment Vessel (IV). CNS10-160B Casks that have been used for TRU mixed waste shipments are also potentially contaminated within the interior.
- Loaded and unloaded shipment transportation must be coordinated with contact-handled (CH) WHE.
- If the weight of the canister to be loaded into the facility cask exceeds 3,220 lb, hoisting supervisor must be notified for work bonnet removal prior to loading the facility cask containing RH waste onto the waste hoist conveyance.
- Mechanical means may be used to assist in the opening and closing of the facility cask lock pins, if necessary.
- Equipment weight:

Facility Cask	67,389 lb
Facility Cask Transfer Car	9,400 lb
Waste Hoist Work Bonnet	10,000 lb

- At any point during waste processing, the RH-TRU 72-B lid(s) can be installed and/or removed to maintain equipment configuration, as determined by the WHE.
- If the off-normal process cannot be completed in its entirety, the WHE shall determine where and when to start and stop the process during the shift, and where to stop the process for the end-of-shift.
- If the telescoping port shield is to be left unguarded for a period of time, the Facility Cask Rotating Device (FCRD) gates may be opened and closed as required.
- Door # 109 in the RH Bay must **NOT** be opened while handling a loaded cask.
- Suspended loads should not be placed over "No Load Areas" (grating) of Hot Cell floor. Loads shall only be placed on the concrete portion of the floor or, for facility canisters, in the storage well locations.
- A drum carriage that becomes suspended over another carriage must be positioned over the concrete portion of the floor prior to storage. Drums may not be stacked on top of each other in the Hot Cell.
- Safety glasses and a long-sleeve 100% cotton shirt must be worn when opening and closing breakers.
- Hearing and eye protection must be worn when using impact wrench.

## PERFORMANCE

### 1.0 FAILURE OF HOT CELL GRAPPLE

#### CAUTION

Visual observation may be the only method to ensure grapple load, canister, plugs, etc., are fully seated and supported prior to releasing grapple. Care must be exercised to prevent loads from being dropped while overriding grapple.

#### NOTE

The grapple must be in a position where it is accessible by the Bridge Mounted Power Manipulator.

- 1.1 **IF** a load is **NOT** suspended from grapple,  
**THEN GO TO** Step 1.3.

1.2 **IF** a load **IS** suspended from grapple,  
**THEN** perform the following:

1.2.1 Rotate block in desired direction to place grapple override mechanism so that it is accessible by power manipulator.

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**NOTE**

Any waste drums and the shield plugs must only be placed on concrete portions of the floor. Canisters shall be placed in the storage well locations.

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1.2.2 Place load on a safe lay-down area while observing from Hot Cell gallery and with use of closed circuit TV (CCTV) system.

1.2.3 Attach impact wrench with override socket adaptor installed to power manipulator per WP 05-WH1743.

1.2.4 Access override drive nut on side of grapple with power manipulator.

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**NOTE**

The grapple can be operated by rotating manipulator wrist alone to open or close grapple.

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1.2.5 Open grapple using power manipulator.

1.2.6 Raise hoist slowly and visually verify grapple is free from load while observing from Hot Cell gallery and with use of CCTV system.

1.3 **IF** a load is not suspended from grapple,  
**THEN** perform following:

1.3.1 Place grapple on Hot Cell floor next to spare grapple located on grapple maintenance stand.

1.3.2 Place Hot Cell crane disconnect on power distribution panel of 41-P-001 in the **OFF** position.

**WARNING**

Handling energized cables can cause dangerous electrical shock. Prior to handling connections on grapple power cable, user must first ensure Hot Cell bridge crane disconnect on power distribution panel of 41-P-001 is **OFF**.

- 1.3.3 Remove grapple power cable from grapple using master/slave manipulator.
- 1.3.4 Back up the bolt that attaches grapple to rotating block using master/slave manipulator.
- 1.3.5 Remove nut using power manipulator equipped with impact wrench and override socket adaptor or with the use of a master/slave manipulator.
- 1.3.6 **IF** impact wrench is not to be used, **THEN** replace impact wrench with parallel jaw hand on power manipulator per WP 05-WH1743.
- 1.3.7 Grasp bolt with parallel jaw hand or with master/slave manipulator and remove from rotating block and grapple.
- 1.3.8 Place Hot Cell crane disconnect on power distribution panel of 41-P-001 in the **ON** position.
- 1.3.9 Raise rotating block slowly from grapple until rotating block is free from grapple.
- 1.3.10 Move rotating block over and align with spare grapple.
- 1.3.11 Lower rotating block slowly over spare grapple until bolt hole on grapple is aligned with bolt holes on rotating block.
- 1.3.12 Place bolt back into rotating block and grapple using power manipulator or with masterslave manipulator.
- 1.3.13 Start nut onto bolt using master/slave manipulator.
- 1.3.14 Back up the bolt that attaches grapple to rotating block using master/slave manipulator.
- 1.3.15 Tighten nut using impact wrench or with master/slave manipulator.

- 1.3.16 Place Hot Cell crane disconnect on power distribution panel of 41-P-001 in the **OFF** position.
- 1.3.17 Ensure absence of power at crane CC.

**WARNING**

Handling energized cables can cause dangerous electrical shock.

- 1.3.18 Ensure Hot Cell bridge crane disconnect 41- P-001 is **OFF** prior to handling connections on grapple power cable.
- 1.3.19 Place grapple power cord onto spare grapple using master/slave manipulator.
- 1.3.20 Place Hot Cell crane disconnect on power distribution panel of 41-P-001 in the **ON** position.
- 1.3.21 Verify GRAPPLE FULLY CLOSED light is **ON**.
- 1.3.22 Verify GRAPPLE CONTACT light is **ON**.
- 1.3.23 Rotate GRAPPLE OPEN-CLOSE switch to **OPEN** position.
- 1.3.24 Verify GRAPPLE FULLY CLOSED light goes **OFF** and GRAPPLE FULLY OPEN light comes **ON**.
- 1.3.25 Raise hoist slowly and ensure maintenance stand is free from grapple.

## 2.0 FAILURE OF BRIDGE DRIVE

**NOTE**

A drum carriage that becomes suspended over another carriage must be positioned over the concrete portion of the floor prior to storage. Drums may not be stacked on top of each other in the Hot Cell.

- 2.1 Using appropriate controls, locate attached load, if necessary, over concrete portion of floor.
- 2.2 Lower load until it is safely placed on floor or canister is in storage well.
- 2.3 Ensure crane is not connected to the load.
- 2.4 Place 41-HM-105 BRIDGE CRANE WINCH RETRIEVAL WINCH MOTOR DISCONNECT to **ON**.

- 2.5 Place main disconnect to **ON** at retrieval winch main disconnect and control panel.
  - 2.6 Place WINCH DIRECTION keylock in NORMAL on retrieval winch main disconnect and control panel.
  - 2.7 Place ON/OFF keylock on control pendant to **ON**.
  - 2.8 Ensure bridge hard stops are in raised position.
  - 2.9 Hold pendant START pushbutton to winch bridge into desired position.
  - 2.10 Verify POWER ON light comes **ON**.
  - 2.11 Place ON/OFF keylock in **OFF**.
  - 2.12 Place main disconnect in OFF/RESET position at retrieval winch main disconnect and control panel.
  - 2.13 Place 41-HM-105 BRIDGE CRANE WINCH RETRIEVAL WINCH MOTOR DISCONNECT in **OFF** position.
- 3.0 FAILURE OF HOIST DRIVE MOTOR
- 3.1 **IF** the hoist is connected to a load,  
**THEN** position the load using the bridge and trolley over an appropriate storage area, as follows:
    - 3.1.1 Place Hot Cell Crane disconnect, 41-P-001, to **OFF**.
    - 3.1.2 At 41P-CP03/238, Hot Cell Crane Override Control Panel, place Override disconnect switch to **ON**.
    - 3.1.3 Verify SYSTEM ACTIVE light is **ON**.
    - 3.1.4 Turn OVERRIDE HOIST switch to **DOWN**.
    - 3.1.5 Lower the load to a safe position.
    - 3.1.6 Disconnect the load from the hoist.
  - 3.2 **IF** the hoist is **NOT** connected to a load,  
**THEN** perform applicable steps to remove grapple or hook and return to Step 3.2.1.
    - 3.2.1 Place Hot Cell Crane disconnect, 41-P-001, to **OFF**.

- 3.2.2 At 41P-CP03/238, Hot Cell Crane Override Control Panel, place Override disconnect switch to **ON**.
- 3.2.3 Verify SYSTEM ACTIVE light is **ON**.
- 3.2.4 Turn OVERRIDE HOIST switch to **UP**.
- 3.2.5 Raise hoist to upper limit to allow entry into crane maintenance room.
- 3.2.6 Turn OVERRIDE HOIST switch to **OFF**.

#### 4.0 FAILURE OF TROLLEY DRIVE MOTOR

- 4.1 Place Hot Cell Crane disconnect, 41-P-001, to **OFF**.
- 4.2 At 41P-CP03/238, Hot Cell Crane Override Control Panel, place Override disconnect switch to **ON**.
- 4.3 Verify SYSTEM ACTIVE light is **ON**.
- 4.4 **IF** load is connected to the hoist,  
**THEN** turn OVERRIDE TROLLEY switch to **UP** (North) or **DOWN** (South) to position load so it can be safely stored using the bridge and hoist.
- 4.5 **IF** load is **NOT** connected to hoist,  
**THEN** turn OVERRIDE TROLLEY switch to **UP** (North) or **DOWN** (South) to position trolley for movement of crane into crane maintenance room.
- 4.6 When trolley is positioned in appropriate location, turn OVERRIDE TROLLEY switch to **OFF**.

#### 5.0 INSTALLATION OF WTMA WHEELS

- 5.1 Using the 41-ton forklift, position the WTMA where the front of the machine is accessible for wheel installation.
- 5.2 Place the WTMA on cribbing high enough to support wheel installation.
- 5.3 Perform the following:
  - 5.3.1 Using a second forklift, align the wheel axle of one front wheel with the axle port.
  - 5.3.2 Set the wheel upright and maneuver the forklift to install the wheel.

- 5.3.3 Install wheel axle lock pin.
- 5.3.4 Repeat Steps 5.3.1 through 5.3.3 to install opposite front wheel.
- 5.4 Maneuver the WTMA to support rear wheel assembly installation, if necessary.
- 5.5 Place the WTMA on cribbing so the rear brace assembly can be removed.
- 5.6 Position forklift under the brace assembly on the rear of the WTMA and raise forks to transfer weight of the brace assembly to forks.
- 5.7 Unbolt the brace assembly from the rear of the WTMA and transport brace assembly to staging area.
- 5.8 Using forklift, place the rear wheel assembly under the WTMA and align WTMA and rear wheel assembly bolt holes.
- 5.9 Install rear wheel assembly bolts.
- 5.10 Remove WTMA from cribbing.
- 6.0 TRANSPORTING THE WTMA
  - 6.1 Verify inspection due date of all rigging is current.
  - 6.2 Inspect all rigging prior to use.
  - 6.3 Using a piece of equipment large enough to pull the WTMA, attach the rear wheel assembly to the haul equipment.
  - 6.4 Transport the WTMA to desired location utilizing the 20-ton or 41-ton forklift to assist, if necessary.
- 7.0 WTMA WHEEL REMOVAL
  - 7.1 Position WTMA in area where the front of the machine is accessible for wheel removal.
  - 7.2 Place the WTMA on cribbing high enough to support the wheel removal process.

- 7.3 Perform the following:
    - 7.3.1 Remove wheel axle lock pin.
    - 7.3.2 Position forklift under wheel and raise forks until wheel weight is transferred to forks.
    - 7.3.3 Maneuver forklift to remove the wheel from the WTMA.
    - 7.3.4 Repeat Steps 7.3.1 through 7.3.3 to remove opposite front wheel.
  - 7.4 Maneuver the WTMA to support rear wheel removal, if needed.
  - 7.5 Place WTMA on cribbing so wheel assembly can be removed.
  - 7.6 Position forklift under rear wheel assembly and raise forks to transfer weight of the rear wheel assembly to the forks.
  - 7.7 Unbolt the rear wheel assembly from the rear of the WTMA and transport rear wheel assembly to staging area.
  - 7.8 Using a forklift, place the brace assembly under the WTMA and align the WTMA and brace assembly bolt holes.
  - 7.9 Install the brace assembly bolts.
  - 7.10 Remove WTMA from cribbing.
- 8.0 RESETTING TRANSFER CELL LIGHT CURTAIN

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**NOTE**

Checkout and return of key will be performed in accordance with WP 05-WH1724.

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- 8.1 WHE, obtain Radiological Work Permit (RWP) for accessing the Transfer Cell.
- 8.2 Place CANISTER SHUTTLE CAR AUTO - MANUAL switch in **NEUT**.
- 8.3 Obtain key from Facility Shift Manager (FSM) to unlock Door #70 leading to the Transfer Cell.
- 8.4 WH, enter Transfer Cell with observing job-specific RWP requirements, as applicable.

- 8.5 Perform the following at Control Panel 41P-CP03/002.
    - 8.5.1 Ensure keyswitch is in **ENABLE**.
    - 8.5.2 Press RESET button.
    - 8.5.3 Verify light tower green light is **ON**.
  - 8.6 Push RESET button on Detension Robot Control Panel 41P-CP03/236A.
  - 8.7 Verify light tower green light is **ON**.
  - 8.8 Push RESET button on Swipe Robot Control Panel 41P-CP03/237.
  - 8.9 Reset the nut runner controls 41P-CP03/236B.
  - 8.10 Verify light tower green light is **ON**.
  - 8.11 Ensure all personnel have exited Transfer Cell, as applicable.
  - 8.12 Exit Transfer Cell in accordance with RWP requirements.
  - 8.13 Lock Door #70.
  - 8.14 Return Door #70 key to FSM.
  - 8.15 Resume operations at appropriate step of WP 05-WH1710 or WP 05-WH1722, if applicable.
- 9.0 RETURN OF RH-TRU 72-B LOADED SHIPMENT
- 9.1 Ensure the applicable sections of WP 05-WH1744 have been completed.
  - 9.2 WHE, ensure an adequate number of WHO personnel are available to support RH-TRU 72-B loading and initial on Attachment 1.
- SIGN-OFF WHE**
- 9.3 WHE, verify the RH Waste Handling Building (WHB) is in RH Waste Handling Mode by contacting the CMRO, and initial on Attachment 1.
- SIGN-OFF WHE**
- 9.4 WHE, verify a site Transportation Representative (TR) is present and has approved the loading process, and initial on Attachment 1.
- SIGN-OFF WHE**

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**NOTE**

In Step 9.5, required information may be transferred from existing documents (copy of generator's waste certification documents, Payload Assembly Transportation Document [PATD], Waste Isolation Pilot Plant (WIPP) Waste Information System [WWIS]/Waste Data System [WDS] printouts, or verified through other means [visual, physical, etc.]).

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- 9.5 WHE, record Payload Assembly identification numbers and total payload weight on Attachment 1.

**SIGN-OFF WHE**

- 9.6 WHE, record RH-TRU 72-B serial number and empty weight on Attachment 1.

**SIGN-OFF WHE**

- 9.7 WHE, calculate RH-TRU 72-B total weight by adding payload weight and RH-TRU 72-B empty weight on Attachment 1.

**SIGN-OFF WHE**

- 9.8 WHE, verify RH-TRU 72-B total weight is less than or equal to 45,000 lb and record on Attachment 1.

**SIGN-OFF WHE**

- 9.9 Ensure the Facility Cask Transfer Car (FCTC) and Facility Cask are clear of the FCRD.
- 9.10 Ensure the FCRD is in the full down position (horizontal).
- 9.11 Ensure the Cask Transfer Car (CTC) is in the Cask Unloading Room (CUR).
- 9.12 Ensure the Hot Cell Shield Valve, 41-N-101, is closed.
- 9.13 Ensure the Hot Cell floor Shield Plugs are installed.

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**NOTE**

During the performance of this procedure, if proper indications are not received, the WHE may authorize performing steps or repeating steps of this procedure to ensure proper indications are received. This is not intended to circumvent the intent of a "continuous use" procedure and prior to restarting the procedure, it must be re-entered at the same point it was stopped. Radiological control hold points may not be bypassed. This includes, but is not limited to:

- Moving/repositioning the Canister Shuttle Car
- Raising/lowering a grapple
- Opening and closing a grapple not under a load
- Resetting a robot and repeating robot sequence, as necessary

Any step or steps performed at the discretion of the WHE will be documented in the RH Waste Handling narrative log.

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- 9.14 At Control Panel 411-CP-264-04, in the Cask Loading Room, verify the following:
- 9.14.1 CUR VALVE CLOSED lamp is **ON**.
  - 9.14.2 SHIELD VALVE 41-N-003 CLOSE lamp is **ON**.
  - 9.14.3 CANISTER TRANSFER SYSTEM MODE switch is in **XFER**.
  - 9.14.4 CANISTER SHUTTLE CAR AUTO - MANUAL switch is in **AUTO**.
  - 9.14.5 GRAPPLE HOIST 41-H-022 MAN - OFF - AUTO switch is in **AUTO**.
  - 9.14.6 ROBOTS HOME lamp is **ON**.
- 9.15 At Control Panel 411-CP-264-04, push the TEL PORT SHIELD 41-N-013 **UP** button.
- 9.16 Verify TEL PORT SHIELD 41-N-013 UP lamp is **ON**.
- 9.17 Verify FACILITY GRAPPLE 41-T-022 OPEN lamp is **ON**.
- 9.18 Push HOIST POS E button to lower Grapple Hoist and Shield Bell to position E.
- 9.19 Verify HOIST LOWERING indicating lamp is **ON**.
- 9.20 Verify HOIST POS E indicating lamp is flashing.

- 9.21 When hoist and Shield Bell reach position E, verify HOIST POS E lamp is **ON**.
- 9.22 Push CLR PORT LID STORAGE POS Y2 button.
- 9.23 Verify green CLR PORT LID STORAGE POS Y2 lamp is **ON**.
- 9.24 Verify position Y camera shows alignment with the lid platform (camera #5, diamond marker #2).
- 9.25 **IF** laser indication is not in alignment,  
**THEN** perform the following:
  - 9.25.1 Verify CANISTER TRANSFER SYSTEM MODE switch is in **XFER**.
  - 9.25.2 Verify CANISTER SHUTTLE CAR switch is in **MAN**.
  - 9.25.3 Press FORWARD or REVERSE button until laser indication is aligned properly.
  - 9.25.4 Place CANISTER SHUTTLE CAR switch in **AUTO**.
  - 9.25.5 Place CANISTER TRANSFER SYSTEM MODE switch in **ASSY**.
- 9.26 Push SHIELD VALVE 41-N-003 OPEN button to initiate opening of the Shield Valve.
- 9.27 Ensure SHIELD VALVE 41-N-003 is fully OPEN.
- 9.28 Place CANISTER TRANSFER SYSTEM MODE switch in **XFER** position.
- 9.29 Push HOIST POS G button to lower Grapple Hoist to position G.
- 9.30 Verify PINTLE GRAPPLE CONTACT lamp is **ON**.
- 9.31 **IF** PINTLE GRAPPLE CONTACT lamp is **NOT ON**,  
**THEN** perform the following:
  - 9.31.1 Place GRAPPLE HOIST MAN-OFF-AUTO switch in MAN.
  - 9.31.2 Press JOG LIFT and/or JOG LOWER button to set grapple properly on pintle until PINTLE GRAPPLE CONTACT lamp is **ON**.
  - 9.31.3 Place GRAPPLE HOIST MAN-OFF-AUTO switch in AUTO.

- 9.32 Place the FACILITY GRAPPLE 41-T-022 OPEN - CLOSE switch in the **CLOSE** position.
- 9.33 Ensure FACILITY GRAPPLE 41-T-022 is fully **CLOSED**.
- 9.34 Push HOIST POS F button to raise Grapple Hoist to position F.
- 9.35 When hoist reaches position F, verify HOIST POS F lamp is **ON**.
- 9.36 Place CANISTER TRANSFER SYSTEM MODE switch in the **ASSY** position.
- 9.37 Push SHIELD VALVE 41-N-003 CLOSE button.
- 9.38 Ensure SHIELD VALVE 41-N-003 is fully CLOSED.
- 9.39 Push CLR PORT ROAD CASK POS Y1 button to initiate CSC movement to position Y1.
- 9.40 Verify CLR PORT ROAD CASK POS Y1 lamp is **ON**, indicating the Canister Shuttle Car is at position Y1.
- 9.41 Ensure the position Y camera shows alignment with the cask basket (camera #5, diamond marker #1).
- 9.42 **IF** laser indication is not in alignment, **THEN** perform the following:
  - 9.42.1 Ensure CANISTER TRANSFER SYSTEM MODE switch is in **XFER**.
  - 9.42.2 Ensure CANISTER SHUTTLE CAR switch is in **MAN**.
  - 9.42.3 Press FORWARD or REVERSE button until laser indication is aligned properly.
  - 9.42.4 Place CANISTER SHUTTLE CAR switch in **AUTO**.
  - 9.42.5 Place CANISTER TRANSFER SYSTEM MODE switch in **ASSY**.
- 9.43 Push SHIELD VALVE 41-N-003 OPEN button to initiate opening of the Transfer Cell Shield Valve.
- 9.44 Ensure SHIELD VALVE 41-N-003 is fully **OPEN**.
- 9.45 Place CANISTER TRANSFER SYSTEM MODE switch in the **XFER** position.

9.46 Push HOIST POS G button to lower Grapple Hoist and IV lid to position G, on top of RH-TRU 72-B.

**CAUTION**

Failure to verify lid is properly seated may result in damage to the lid.

9.47 Using the CCTV cameras, verify inner lid is properly seated on top of RH-TRU 72-B.

9.48 **IF** lid is **NOT** properly seated, **THEN** perform the following:

9.48.1 At Control Panel 411-CP-264-04, in the Cask Loading Room, place the GRAPPLE HOIST 41-H-022 MAN-OFF-AUTO switch in **MAN**.

9.48.2 Operate the appropriate controls for the Grapple Hoist to properly position the lid on top of RH-TRU 72-B.

9.49 **WHEN** lid is properly seated, **THEN** place the GRAPPLE HOIST 41-H-022 switch in **AUTO**.

9.50 Verify PINTLE GRAPPLE CONTACT lamp is **ON**.

9.51 Place FACILITY GRAPPLE 41-T-022 OPEN - CLOSE switch in **OPEN** position.

**CAUTION**

Failure to ensure the grapple is open may result in damage to the lid.

9.52 Ensure FACILITY GRAPPLE 41-T-022 is fully **OPEN**.

**CAUTION**

Failure to verify there is no load on the grapple may result in damage to the lid.

9.53 Visually verify no load on grapple using grapple weight indicator and CCTV.

9.54 Push HOIST POS E button to lift Grapple Hoist to position E.

- 9.55 When hoist reaches position E, verify HOIST POS E lamps is **ON**.
- 9.56 Place CANISTER TRANSFER SYSTEM MODE switch in **ASSY** position.
- 9.57 Push SHIELD VALVE 41-N-003 CLOSE button.
- 9.58 Ensure SHIELD VALVE 41-N-003 is fully **CLOSED**.
- 9.59 Push HOIST POS A button to lift Grapple Hoist and Shield Bell to position A.
- 9.60 When hoist and Shield Bell reach position A, verify HOIST POS A lamp is **ON**.
- 9.61 Push TEL PORT SHIELD 41-N-013 **DOWN** button.
- 9.62 Ensure TEL PORT SHIELD 41-N-013 is **DOWN**.
- 9.63 Push HOT CELL PORT LID DETENSION POS X button.
- 9.64 Verify HOT CELL PORT LID DETENSION POS X indicating lamp is **ON**.
- 9.65 Ensure CTS mode switch is in NEUT.
- 9.66 Ensure TRANSFER CELL SHUTTLE CAR switch is in AUTO.
- 9.67 Ensure ENABLE DETEN switch is in DISABLE.
- 9.68 Push INITIATE/CONT button.
- 9.69 When robot finds bolt, and STEP INITIATED and STEP COMPLETE lights are **OFF**, place ENABLE DETEN switch in ENABLE.
- 9.70 Push INITIATE/CONT button.
- 9.71 After robot has stopped, place ENABLE DETEN switch in DISABLE.
- 9.72 Repeat Steps 9.69 through 9.71 until all bolts are tightened.
- 9.73 Ensure both robots are at HOME.
- 9.74 Push CUR PORT ROAD CASK POS W button.
- 9.75 Verify CUR PORT ROAD CASK POS W indicating lamp is **ON**.
- 9.76 Verify position W camera shows alignment with the cask basket.

- 9.77 **IF** laser indication is not in alignment,  
**THEN** perform the following:
- 9.77.1 Ensure CANISTER TRANSFER SYSTEM MODE switch is in **XFER**.
  - 9.77.2 Ensure CANISTER SHUTTLE CAR switch is in **MAN**.
  - 9.77.3 Press FORWARD or REVERSE button until laser indication is aligned properly.
  - 9.77.4 Place CANISTER TRANSFER SYSTEM MODE switch in **XFER**.
  - 9.77.5 Place CANISTER SHUTTLE CAR switch in **AUTO**.
- 9.78 At Control Panel 411-CP04/157 in the CUR, perform the following:
- 9.78.1 Place EMERGENCY STOP button in the **OUT** position.
  - 9.78.2 Place Key switch in the **MAN** position.
  - 9.78.3 Ensure the CUR shield valve (41-N-165) is **CLOSED**.
  - 9.78.4 Ensure CCTV system is **ON** and operable.
  - 9.78.5 Press START pushbutton.
  - 9.78.6 Verify POWER ON light is **ON**.
  - 9.78.7 Verify both green TROLLEY IN POSITION lamps are illuminated.
  - 9.78.8 Verify white HOIST IN POSITION lamp is **ON**.
  - 9.78.9 Verify OPEN PERMISSIVE lamp is **ON**.
- 9.79 Open the CUR Shield Valve.
- 9.80 Using appropriate controls, engage the RH-TRU 72-B trunnions.
- 9.81 Lift RH-TRU 72-B to upper limit to clear the CUR Shield Valve.
- 9.82 Close the CUR Shield Valve.
- 9.83 Bridge east to align with the CTC.
- 9.84 Lower the RH-TRU 72-B into the CTC with the CUR Crane.

- 9.85 Disengage the CUR Crane lifting yoke from the RH-TRU 72-B.
- 9.86 Using the appropriate controls on Control Panel 411-CP04/157, position the CUR Crane so it will not interfere with personnel or equipment.
- 9.87 Place the Key switch in the **OFF** position.
- 9.88 Verify POWER ON light goes **OFF**.
- 9.89 Position the CTC with the RH-TRU 72-B in the RH Cask Preparation Station.
- 9.90 RCT, perform dose rate of RH-TRU 72-B IV lid.
- 9.91 RCT, perform contamination smears on IV lid exterior.
- 9.92 RCT, monitor smears for gross levels of activity.
- 9.93 RCT, verify activity is below acceptable limits and initial on Attachment 1.

**SIGN-OFF RCT**

- 9.94 Record torque wrench ID number and calibration due date on Attachment 1.

**SIGN-OFF WH**

- 9.95 Match IV lid and OC body serial numbers (S/Ns) and record S/N on Attachment 1.

**SIGN-OFF WH**

- 9.96 Disconnect IV lid lift fixture from IV lid.
- 9.97 Remove IV lid alignment tool.
- 9.98 Install eight IV lid closure bolts following the numbering system on lid until all bolts are hand-tight.
- 9.99 Torque eight IV lid closure bolts in star pattern, following the number system on lid, to 100 to 200 lb-ft.

**SIGN-OFF WH**

- 9.100 **GO TO** DOE/WIPP-02-3284, Pre-shipment Leakage Rate Testing, and WHE contact Transportation Engineer (TE) to arrange leak testing.
- 9.101 Qualified individual, perform IV pre-shipment leakage rate test, and return to Step 9.102.

9.102 WHE, initial on Attachment 1 that leak test is complete.

### **SIGN-OFF WHE**

9.103 Outer Containment Vessel (OC) Lid Inspection:

9.103.1 RCT, perform contamination smears on interior and exterior of OC lid.

9.103.2 RCT, monitor smears for gross levels of activity.

9.103.3 RCT, verify activity is below acceptable limits and initial on Attachment 1.

### **SIGN-OFF RCT**

9.103.4 WH, inspect OC Lid for the following:

- No visible deformation
- No abnormal flat spots or dents > ½ inch
- No abnormal scratches or gouges
- No distortions on or around lifting tabs

9.103.5 Clean and Inspect the following components for deformation, scratches and/or burrs:

- Closure Bolt threads
- Seal Test Port Insert threads (if plug was removed)
- Gas Sampling Port Insert Threads
- Seal Test Port Closure Bolt and O-ring (if bolt was removed)
- Gas Sampling Port Closure Bolt and O-ring
- Lid O-ring seal grooves

9.103.6 Sparingly apply high vacuum grease to all O-rings that were previously inspected.

- 9.103.7 Remove and inspect OC lid main O-rings for the following:
  - Cleanliness (no visible dirt or debris)
  - Damage (voids, cracks, and gouges)
- 9.103.8 **IF** O-ring is found to be damaged, contact WHE, **THEN** record findings in the Remarks section on Attachment 1.
- 9.103.9 **IF** O-ring is acceptable, **THEN** apply high vacuum grease before installing.
- 9.103.10 After OC lid inspections are completed, clean OC lid with lint-free rags and alcohol, as applicable.
- 9.103.11 Install OC lid seal O-rings.
- 9.103.12 Initial Attachment 1 to document OC Lid components and hardware satisfactory.

**SIGN-OFF WH**

- 9.103.13 Match OC lid and body S/N and record OC S/N on Attachment 1.

**SIGN-OFF WH**

- 9.103.14 Install OC lid.
- 9.103.15 Remove OC lid lift fixture.
- 9.103.16 Install 18 OC lid closure bolts following the number sequence on lid until all bolts are hand-tight against lid.

<p><b>CAUTION</b></p> <p>Torque should be applied in these steps of about 220 lb-ft per load step.</p>
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- 9.103.17 Torque 18 OC closure bolts, following the numbering system on lid using 220 ft-lb each step until the 600 to 700 ft-lb of torque is reached, and sign off on Attachment 1.

**SIGN-OFF WH**

9.103.18 **GO TO** DOE/WIPP-02-3284, OC Inner main O-ring seal, and WHE contact TE to arrange leak testing.

9.103.19 Qualified individual, perform OC pre-shipment leakage rate test and return to Step 9.103.20.

9.103.20 WHE, initial on Attachment 1 that leak test is complete.

### **SIGN-OFF WH**

#### 10.0 RH-TRU 72-B LOADED FINAL PREPARATION FOR SHIPMENT

10.1 Perform RH-TRU 72-B trailer loading per applicable procedure and return to Step 10.2.

### **SIGN-OFF WH**

10.2 RCT, perform contamination smears on RH-TRU 72-B exterior and trailer.

10.3 RCT, monitor smears for gross levels of activity.

10.4 RCT, verify activity is below U.S. Department of Transportation (DOT) acceptable limits and record results and initial on Attachment 1.

### **SIGN-OFF RCT**

10.5 RCT, perform dose rate survey on surface and at 1 meter (2 meters if Transportation Index [T. I.] Is greater than 10) on RH-TRU 72-B exterior and record highest reading results on Attachment 1.

### **SIGN-OFF RCT**

10.6 WIPP TE, for return of waste to the generator site, **GO TO** WP 08-NT3111, perform procedure, and **RETURN TO** Step 10.7.

10.7 RCT, if operators are not in WIPP dosimetry program, verify dose rates in occupied area of transport vehicle are below DOT acceptable limits and record on Attachment 1.

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

10.8 WH, record that shipment is complete and unit is ready for transport on Attachment 1.

### **SIGN-OFF WH**

## 11.0 REVIEW OF RH-TRU 72-B LOADING DATA SHEET

### 11.1 WHE perform the following:

- Review Attachment 1 for completeness.
- Print name, sign, and date Attachment 1.
- Fax or hand carry copy of completed Attachment 1 to TE.
- Forward Attachment 1 to Records Coordinator.

## 12.0 CNS10-160B CASK INSPECTIONS

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### **NOTE**

Any issues found during the following inspections will be reported to the WHE. The WHE will be responsible for resolving all issues with the Packaging Maintenance Engineer.

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### 12.1 Inspect impact limiters in the RH Bay for the following:

- Punctures
- Abnormal flat spots or dents
- Abnormal gouges or scratches
- Distortion on or around lifting attachments
- Plastic burnout plugs in place

### 12.2 Inspect ratchet binders for the following:

- Ease of operation
- Excessive wear
- Cracks in jaws or joining bolts
- Deformation of jaws or joining bolts
- Excessive rust or corrosion

12.3 Perform primary lid inspections as follows:

12.3.1 WH, inspect primary lid via CCTV for the following:

[ A ] No cracks, tears, cuts, or discontinuities on O-rings

[ B ] O-rings in proper position

[ C ] Lid components and hardware for damage

[ D ] Seal seating surface is free of damage, debris, gravel, or foreign matter that may cause damage

12.3.2 **IF** O-ring is found to be damaged, contact WHE,  
**THEN** record findings in "Remarks" section on Attachment 2.

12.3.3 Initial Attachment 2 to indicate lid components and hardware are satisfactory; record discrepancies in "Remarks" section of Attachment 2.

#### **SIGN-OFF WH**

12.4 Perform cask inner body inspection via CCTV as follows:

12.4.1 Inspect inner body for damage, water, or debris.

12.4.2 Initial Attachment 2 to indicate inner body is satisfactory; record discrepancies in "Remarks" section of Attachment 2.

#### **SIGN-OFF WH**

12.5 Initial Attachment 2 to indicate impact limiters and hardware are satisfactory; record discrepancies in "Remarks" section of Attachment 2.

#### **SIGN-OFF WH**

12.6 Perform cask outer body inspections via CCTV as follows:

- Punctures
- Abnormal flat spots or dents
- Abnormal gouges or scratches
- Distortion on or around lifting attachments
- Alignment pins, if installed

- 12.7 Initial Attachment 2 to indicate outer body components are satisfactory; record discrepancies in "Remarks" section of Attachment 2.

**SIGN-OFF WH**

13.0 LOADING CNS10-160B Cask

- 13.1 Ensure the applicable sections of WP 05-WH1744 have been completed.
- 13.2 WH, ensure adequate WHO staff is available to support CNS10-160B Cask loading and record on Attachment 2.

**SIGN-OFF WHE**

- 13.3 WH, verify the RH Waste Handling Building is in RH WH mode by contacting the CMRO and record on Attachment 2.

**SIGN-OFF WHE**

- 13.4 Verify trailer to be loaded has current quarterly inspection.
- 13.5 Ensure crane Maintenance Room Shield Door 41-N-007/Door #404 is **CLOSED** as indicated by green **CLOSED** status light illuminated, **AND** red OPEN status is **OFF** on 411-CP-236-26 located outside Hot Cell Crane Maintenance Room.
- 13.6 Ensure Shield Door 41-N-001 is **CLOSED**.
- 13.7 Ensure Hot Cell Shield Valve 41-N-101 is **CLOSED** as indicated by green **CLOSED** status light illuminated, **AND** red OPEN status is **OFF** on Hot Cell Gallery CC 411-CP-309-22.

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**NOTE**

In Steps 13.8 and 13.9 required information may be transferred from existing documents (copy of generator's waste certification documents, WWIS/WDS printouts, etc.) or verified through other means (visual, physical, etc.).

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- 13.8 WH, record payload container ID numbers on Attachment 2.

**SIGN-OFF WH**

- 13.9 WH, calculate CNS10-160B Cask total weight by adding payload weight and CNS10-160B Cask weight on Attachment 2.

**SIGN-OFF WH**

- 13.10 WH, verify CNS10-160B Cask total weight is less than or equal to 72,000 lb and record on Attachment 2.

**SIGN-OFF WH**

- 13.11 Record CNS10-160B Cask Serial Number on Attachment 2.

**SIGN-OFF WH**

- 13.12 Perform removal of Hot Cell shield plug as follows:
- 13.12.1 Remove shield plug using large shield plug lift fixture and stage in shield plug laydown area.
  - 13.12.2 Lower grapple onto large plug lift fixture pintle until green GRAPPLE CONTACT light comes **ON** and HOIST LOAD digital display goes below grapple weight.
  - 13.12.3 Rotate GRAPPLE OPEN-CLOSE switch to **OPEN** position.

**CAUTION**

Prior to attempting to open grapple, HOIST LOAD display indication must be equal to or less than grapple weight to ensure the load is seated and will not be dropped.

- 13.12.4 Verify GRAPPLE FULLY CLOSED light goes **OFF** and GRAPPLE FULLY OPEN light comes **ON**.
  - 13.12.5 Slowly raise grapple approximately 6 in.
  - 13.12.6 Verify load is actually released by observing the following:
    - [ A ] HOIST LOAD indication remains at approximately grapple weight.
    - [ B ] GRAPPLE CONTACT light goes **OFF**.
    - [ C ] Load is free from grapple.
- 13.13 Load five-pack drum carriage as follows:
- 13.13.1 Inspect payload for damage by utilizing CCTV cameras.

- 13.13.2 **IF** five-pack drum carriage is not suspended from grapple, **THEN** perform the following:
- [ A ] Center Pentapod over five-pack drum carriage.
  - [ B ] Lower Pentapod into five-pack drum carriage.
  - [ C ] Grasp five-pack drum carriage with Pentapod.
  - [ D ] Slowly raise five-pack drum carriage until it is clear of Hot Cell floor.
- 13.13.3 **IF** five-pack drum carriage is suspended from grapple, **THEN** perform the following:
- [ A ] Stage five-pack drum carriage over zero indexing point (ZIP).
  - [ B ] Slowly lower five-pack drum carriage into CNS10-160B Cask until weight of drum carriage is resting on bottom of CNS10-160B Cask.
  - [ C ] Release Pentapod from five-pack drum carriage.
- 13.13.4 **IF** a second five-pack is to be loaded, **THEN** perform Steps 13.13.2 and 13.13.3, and **RETURN TO** Step 13.13.5.
- 13.13.5 Stage Pentapod in designated laydown.
- 13.13.6 Lower grapple onto Pentapod pintle until green GRAPPLE CONTACT light comes **ON** and HOIST LOAD digital display goes below grapple weight.

**CAUTION**

Prior to attempting to open grapple, HOIST LOAD display indication must be equal to or less than grapple weight to ensure load is seated and will not be dropped.

- 13.13.7 Rotate GRAPPLE OPEN-CLOSE switch to **OPEN** position.
- 13.13.8 Verify GRAPPLE FULLY CLOSED light goes **OFF** and GRAPPLE FULLY OPEN light comes **ON**.
- 13.13.9 Slowly raise grapple approximately 6 in.

13.13.10 Verify load is actually released by observing the following:

[ A ] HOIST LOAD indication remains at approximately grapple weight.

[ B ] GRAPPLE CONTACT light goes **OFF**.

[ C ] Load is free from grapple.

#### 13.14 Reinstall Primary Lid

13.14.1 Verify GRAPPLE FULLY OPEN green light is **ON**.

13.14.2 Lower grapple onto Primary Lid Lift Fixture pintle until green GRAPPLE CONTACT light comes **ON** and HOIST LOAD digital display goes below grapple weight.

13.14.3 Rotate GRAPPLE OPEN-CLOSE switch to **CLOSE**

13.14.4 Verify GRAPPLE FULLY OPEN light goes **OFF** and GRAPPLE FULLY CLOSED light comes **ON**.

13.14.5 Slowly lift primary lid until it is clear of Hot Cell floor.

13.14.6 Align primary lid over shield plug port.

13.14.7 Slowly lower primary lid using alignment marks on cask body and lid until primary lid is resting in place on cask body.

13.14.8 Lower grapple onto primary lid lift fixture pintle until green GRAPPLE CONTACT light comes **ON** and HOIST LOAD digital display goes below grapple weight.

#### **CAUTION**

Prior to attempting to open grapple, HOIST LOAD display indication must be equal to or less than grapple weight to ensure the load is seated and will not be dropped.

13.14.9 Rotate GRAPPLE OPEN-CLOSE switch to **OPEN** position.

13.14.10 Verify GRAPPLE FULLY CLOSED light goes **OFF** and GRAPPLE FULLY OPEN light comes **ON**.

13.14.11 Slowly raise grapple approximately 6 in.

13.14.12 Verify load is actually released by observing the following:

- [ A ] HOIST LOAD indication remains at approximately grapple weight.
- [ B ] GRAPPLE CONTACT light goes **OFF**.
- [ C ] Load is free from grapple.

13.14.13 Raise Hot Cell crane grapple until it is clear of Hot Cell floor.

13.15 Install Hot Cell shield plugs as follows:

13.15.1 Verify GRAPPLE FULLY OPEN green light is **ON**.

13.15.2 Lower grapple onto shield plug lift fixture pintle until green GRAPPLE CONTACT light comes **ON** and HOIST LOAD digital display goes below grapple weight.

13.15.3 Rotate GRAPPLE OPEN-CLOSE switch to **CLOSE** position.

13.15.4 Verify GRAPPLE FULLY OPEN light goes **OFF** and GRAPPLE FULLY CLOSED light comes **ON**.

13.15.5 Slowly lift shield plug until it is clear of Hot Cell floor.

13.15.6 Stage shield plug over large shield plug port at ZIP.

13.15.7 Slowly lower shield plug into shield plug port until shield plug is flush with Hot Cell floor.

13.15.8 Disengage shield plug lift fixture from shield plug.

13.15.9 Stage shield plug lift fixture at designated laydown area.

13.15.10 Lower grapple onto plug lift fixture pintle until green GRAPPLE CONTACT light comes **ON** and HOIST LOAD digital display goes below grapple weight.

### CAUTION

Prior to attempting to open grapple, HOIST LOAD display indication must be equal to or less than grapple weight to ensure the load is seated and will not be dropped.

13.15.11 Rotate GRAPPLE OPEN-CLOSE switch to **OPEN** position.

- 13.15.12 Verify GRAPPLE FULLY CLOSED light goes **OFF** and GRAPPLE FULLY OPEN light comes **ON**.
- 13.15.13 Slowly raise grapple approximately 6 in.
- 13.15.14 Verify load is actually released by observing the following:
  - [ A ] HOIST LOAD indication remains at approximately grapple weight.
  - [ B ] GRAPPLE CONTACT light goes **OFF**.
  - [ C ] Load is free from grapple.
- 13.15.15 Verify GRAPPLE FULLY OPEN green light is **ON**.
- 13.15.16 Turn **OFF** Hot Cell crane.

#### 14.0 CNS10-160B CASK LEAK TESTING

- 14.1 WH, **GO TO** WP 05-WH1717 and perform steps required to OPEN Cask Unloading Room Shield Door.
- 14.2 WH, ensure cask lift lug cover plates are **NOT** in place.
- 14.3 WH, position CNS10-160B Cask and CTC in Cask Prep Station.
- 14.4 WH, install cask lift lug cover plates.
- 14.5 RCT, perform dose rate on CNS10-160B Cask.
- 14.6 RCT, perform contamination smears on CNS10-160B Cask primary lid exterior.
- 14.7 RCT, monitor smears for gross levels of activity.
- 14.8 RCT, verify activity is below acceptable limits and initial on Attachment 2.

#### **SIGN-OFF RCT**

- 14.9 WHE, contact TE to arrange leak testing.
- 14.10 Qualified Individual, perform leak testing as required.
- 14.11 WH, remove cask lift lug cover plates.
- 14.12 WH, raise cask prep stand to PASS-THRU.
- 14.13 WH, position CNS10-160B Cask at South end of rails.

**15.0 CNS10-160B CASK FINAL PREPARATION FOR SHIPMENT**

- 15.1 **GO TO** WP 05-WH1745 to perform CNS10-160B Cask trailer loading and return to Step 15.2.

**SIGN-OFF WH**

- 15.2 RCT, perform contamination smears on CNS10-160B Cask exterior and trailer.
- 15.3 RCT, monitor smears for gross levels of activity.
- 15.4 RCT, verify activity is below DOT acceptable limits, enter information from survey and initial Attachment 2.

**SIGN-OFF RCT**

- 15.5 RCT, perform dose rate survey on surface and at 1 meter (2 meters if T. I. Is greater than 10) on CNS10-160B Cask exterior and record results on Attachment 2.

**SIGN-OFF RCT**

- 15.6 TE, **GO TO** WP 08-NT3111, perform procedure **THEN** return to Step 15.7.
- 15.7 RCT, if operators are not in WIPP dosimetry program, verify dose rates in occupied area of transport vehicle are below DOT acceptable limits and record on Attachment 2.

**SIGN-OFF RCT**

- 15.8 Record that shipment is complete and unit is ready for transport on Attachment 2.

**SIGN-OFF WH**

- 15.8.1 Enter printed name, signature, date, and initials on Attachment 2.

**16.0 REVIEW CNS10-160B CASK DATA SHEET**

- 16.1 WHE, perform the following:
- 16.1.1 Review Attachment 2 for completeness and sign Review/Validation block.
- 16.1.2 Place a copy of completed Attachment 2 in traveler folder.

- 16.1.3 Copy completed leak test report and send to Shipping Coordinator.
- 16.1.4 Send original completed leak test report to Transportation Projects.
- 16.1.5 Forward Attachment 2 to Records Coordinator.

## 17.0 RETURN OF LOADED FACILITY CASK TO SURFACE

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### NOTE

If it is necessary to return the Facility Cask loaded with a radioactive waste canister, to the surface for storage, the following steps must be performed. Performance of this section shall only be necessary if RH canister and shield plug emplacement cannot be completed due to an equipment malfunction, which will require extensive maintenance. Completion of these steps will be determined by the RH WHE and RH WHM.

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- 17.1 Retraction of the TC shall be performed as follows:
  - 17.1.1 WHE, ensure the Underground is in RH waste handling mode.

### WARNING

Personnel **MUST** use the appropriate personal protective equipment (PPE) while opening and closing breakers to prevent electrical burns.

- 17.1.2 Rotate the Main Circuit Breaker (M-CB) actuator on the outside of the Motor Control Center (MCC) to the **ON** position.
- 17.1.3 Ensure initial CC Settings are as follows:
  - [ A ] Place POWER key switch to **ON**.
  - [ B ] Place MODE SELECT SW 1 to **OPERATE**.
  - [ C ] Place MODE SELECT SW 2 to **EMPLACE**.
  - [ D ] Verify TILT STATUS ARRAYs show only green LEDs.
  - [ E ] Verify STAGING PLATFORM EXTEND LIMIT LED is **ON**.
  - [ F ] Verify GRAPPLE OPEN LED is **ON**.
  - [ G ] Verify CASK RSV and FSV CLOSE LEDs are **ON**.

- [ H ] Verify CASK RSV and FSV LOCKING PINS CLOSE LEDs are **ON**.
  - [ I ] Remove the C-clamps from the SP and TC.
  - [ J ] Place TC PUMP switch to **ON**.
  - [ K ] Ensure the TC locking mechanisms are in the **UNLOCK** position.
  - [ L ] Place the TC switch to **RETRACT**.
  - [ M ] When the TC is flush with the back of the SP, return the TC switch to **OFF**.
  - [ N ] Place the TC PUMP to **OFF**.
- 17.1.4 Place all switches in the **OFF** position.
- 17.2 Perform retraction of SP as follows:
- 17.2.1 Ensure MODE SELECT SW 1 is in **ASSY/DISASSY**.
  - 17.2.2 Rotate MODE SELECT SW 2 to **OFF**.
  - 17.2.3 Place ALIGNMENT FIXTURE PUMP switch to **ON**.
  - 17.2.4 Place the AFA LOCKING MECHANISM switch to UNLOCK, hold for approximately 15 seconds, then release.
  - 17.2.5 Place the AFA PUMP switch to **OFF**.
  - 17.2.6 Place the SP switch to **RETRACT**.
  - 17.2.7 When the RETRACT LIMIT LED comes **ON** and the SP automatically stops, place the SP switch to **OFF**.
- 17.3 Disconnecting the facility cask shall be performed as follows:
- 17.3.1 Place all switches on the CC to **OFF**.
  - 17.3.2 Place POWER key switch on the CC to **OFF**.

**WARNING**

Personnel **MUST** use the appropriate PPE while opening and closing breakers to prevent electrical burns.

17.3.3 Place the M-CB actuator on the front of the MCC to **OFF**.

17.3.4 WH, perform the following

- Disconnect both ends of cable harnesses 5 and 6 between the SP and FACILITY CASK.
- Disconnect the two quick disconnect air hoses between SP and the FC and replace dust caps.
- Disconnect air supply hose from SP.

17.4 Removal of the FACILITY CASK shall be performed as follows:

17.4.1 WHE, ensure surface is configured for RH waste handling mode.

17.4.2 WHE, using WWIS/WDS Shipment Summary Report, determine weight of canister inside FC.

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**NOTE**

The WASTE TRANSPORT PATH is defined as the route from S-400/E-140 to the active panel/room. When the Waste in Transit lights are activated, the WASTE TRANSPORT PATH is established. In the event the Waste In Transit lights become inoperable, movement of waste must stop and U/G Services is to be notified. The roving watch must sweep the WASTE TRANSPORT PATH and make notification via the mine pager system that waste is in transit.

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17.4.3 Establish a WASTE TRANSPORT PATH prior to WASTE movement. **[LCO 3.3.6]**

17.4.4 Establish a VEHICLE EXCLUSION ZONE to escort the WASTE through the TRANSPORT PATH with the leading and lagging escort. **[LCO 3.3.6]**

17.4.5 The VEHICLE EXCLUSION ZONE SHALL be maintained from the S-400/E-140 intersection to the DISPOSAL ROOM entrance. **[LCO 3.3.6]**

- 17.4.6 Ensure WASTE is moved within the VEHICLE EXCLUSION ZONE. **[LCO 3.3.6]**
- 17.4.7 Ensure non-WASTE handling vehicles/equipment are NOT within the VEHICLE EXCLUSION ZONE . **[LCO 3.3.6]**
- 17.4.8 Only one liquid-fueled vehicle SHALL be in the VEHICLE EXCLUSION ZONE. **[LCO 3.3.6]**
- 17.4.9 Lift the FACILITY CASK with the 41-ton forklift.
- 17.4.10 Transport the FACILITY CASK to the FCTC at the waste hoist station.
- 17.4.11 Place the FACILITY CASK onto the FCTC.

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**NOTE**

Hoisting Operations Supervisor must be contacted prior to loading facility cask on waste conveyance, if canister weight is greater than 3,220 lb. Work bonnet must be removed if weight exceeds 3,220 lb to prevent exceeding waste hoist conveyance rated capacity.

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- 17.4.12 Drive the FCTC from E-140 intersection onto waste conveyance.
- 17.4.13 Ensure conveyance lock pin is in place on the FCTC.
- 17.4.14 Ensure power is de-energized to the FCTC.
- 17.4.15 Disconnect the power cable from the FCTC.
- 17.4.16 Transfer the FACILITY CASK to the surface.
- 17.4.17 Complete the Surveillance Data Sheet(s), EA04AD3001-SR23 and EA04AD3001-SR37, for **Surveillance Requirements (SRs) 4.3.6.1, 4.3.6.2, and 4.3.6.3** as found in WP 04-AD3001.
- 17.4.18 Forward the completed Surveillance Data Sheet(s) and all associated documentation to the FSM for review and approval prior to the end of shift.
- 17.4.19 Notify RH WH personnel on the surface that the FACILITY CASK and FCTC are being transported to the surface.
- 17.4.20 WH, remove the FACILITY CASK and FCTC from waste conveyance in accordance with WP 05-WH1704.

## 18.0 RH-TRU 72-B BOLT DETENSIONING

### WARNING

To avoid a collision error, if a bolt is already partially detensioned, it must first be retensioned prior to initiating these steps.

### NOTE

These instructions provide basic alignment steps and expected robotic actions for detensioning the RH-TRU 72-B inner lid bolts. These instructions will allow the robot to skip over previously detensioned bolts to an operator-determined bolt that was previously missed during the auto detensioning operation.

- 18.1 Ensure the following:
- CANISTER TRANSFER SYSTEM MODE switch is in NEUT.
  - CANISTER SHUTTLE CAR switch is in AUTO.
  - GRAPPLE HOIST switch is in AUTO.
  - INTERLOCK switch is in NORMAL.
  - ROBOTS HOME lamp is **ON**.
  - Canister Shuttle Car is in POS X with the RH-TRU 72-B in place.
  - Robot DETENSION MODE switch is in STEP.
  - Robot ENABLE DETEN switch is in DISABLE.
- 18.2 Press the INITIATE/CONT push button.
- 18.3 Verify the SEQUENCE STEP INITIATED light turns **ON** then **OFF**.
- 18.4 Verify the ROBOT HOME light is **OFF**.
- 18.5 After the robot aligns with the current bolt, verify the STEP COMPLETE light is **OFF**.
- 18.6 **IF** the current bolt does **NOT** need to be detensioned, **THEN GO TO** Step 18.8.

- 18.7 **IF** the current bolt needs to be detensioned,  
**THEN GO TO** Step 18.11.
- 18.8 Ensure the ENABLE DETEN switch is set to DISABLE.
- 18.9 Press the INITIATE/CONT push button.
- 18.10 Verify the STEP COMPLETE light is **ON**,  
**THEN GO TO** Step 18.20.
- 18.11 **IF** alignment is necessary,  
**THEN GO TO** Section 20.0.
- 18.12 Place the ENABLE DETEN switch to ENABLE.
- 18.13 Press the INITIATE/CONT push button.
- 18.14 Verify the SEQUENCE STEP INITIATED light turns **ON**.
- 18.15 Verify the robot goes down onto the current bolt and detensions the bolt.
- 18.16 Verify the SEQUENCE STEP INITIATED light turns **OFF**.
- 18.17 Verify the STEP COMPLETE light is **ON**.
- 18.18 Visually verify the bolt has been fully detensioned.
- 18.19 **IF** another bolt needs to be detensioned,  
**THEN GO TO** Step 18.5.
- 18.20 **IF** there are **NO** more bolts that require detensioning,  
**THEN** press the ROBOTS TO HOME push button and exit this procedure.

## 19.0 RH-TRU 72-B BOLT TENSIONING

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### NOTE

The following steps provide instruction for basic alignment steps and expected robotic actions for tensioning the RH-TRU 72-B inner lid bolts. These instructions will allow the robot to skip over bolts to an operator-determined bolt and allow the operator to tension the selected detensioned bolt.

---

- 19.1 Ensure the following:
- CANISTER TRANSFER SYSTEM MODE switch is in NEUT.
  - CANISTER SHUTTLE CAR switch is in AUTO.
  - GRAPPLE HOIST switch is in AUTO.
  - INTERLOCK switch is in NORMAL.
  - ROBOTS HOME lamp is **ON**.
  - Canister Shuttle Car is in POS X with the RH-TRU 72-B in place.
  - Robot DETENSION MODE switch is in AUTO.
  - Robot ENABLE DETEN switch is in DISABLE.
- 19.2 Press the INITIATE/CONT push button.
- 19.3 Verify the SEQUENCE STEP INITIATED light turns **ON** then **OFF**.
- 19.4 Verify the ROBOT HOME light is **OFF**.
- 19.5 After the robot aligns with the current bolt, verify the STEP COMPLETE light is **OFF**.
- 19.6 **IF** the current bolt does **NOT** need to be tensioned, **THEN GO TO** Step 19.8.
- 19.7 **IF** the current bolt needs to be tensioned, **THEN GO TO** Step 19.12.
- 19.8 Ensure the ENABLE DETEN switch is set to DISABLE.
- 19.9 Press the INITIATE/CONT push button.
- 19.10 Verify the STEP COMPLETE light is **ON**.

- 19.11 **THEN GO TO** Step 19.19.
- 19.12 **IF** the current bolt needs to be tensioned,  
**THEN** place the ENABLE DETEN to ENABLE.
- 19.13 Press the INITIATE/CONT push button.
- 19.14 Verify the SEQUENCE STEP INITIATED light turns **ON**.
- 19.15 Verify the robot goes down onto the current bolt and tensions the bolt.
- 19.16 Verify the SEQUENCE STEP INITIATED light turns **OFF**.
- 19.17 Verify the STEP COMPLETE light is **ON**.

---

**NOTE**

The robot will pause while still on the bolt at this point and will not move until the ENABLE DETEN is set to DISABLE.

---

- 19.18 Set the ENABLE DETEN switch to DISABLE.
- 19.19 **IF** no more bolts require tensioning,  
**THEN** press the ROBOTS TO HOME push button and exit this procedure.

## 20.0 BOLT DETENSIONING IF ROBOT REQUIRES ALIGNMENT

---

**NOTE**

This set of instructions provide the steps necessary to align the end-of-arm tool onto a bolt that requires the robot to be jogged in a determined direction.

---

- 20.1 Ensure DETENSION MODE switch is in AUTO and ENABLE DETEN is in DISABLE.
- 20.2 Verify the STEP COMPLETE and SEQUENCE STEP INITIATE lights are **OFF**.

---

**NOTE**

Each time the INITIATE/CONT button is pushed, the robot will move approximately 3 millimeters in the chosen direction. The INITIATE/CONT button must be pushed at least one time before changing to the next desired direction.

---

- 20.3 Align the end-of-arm tool with the bolt that requires alignment by performing the following (repeat the follow steps, as necessary, to perform the bolt alignment):
- Press INITIATE/CONT button to move the robot NORTH.
  - Place the ENABLE DETEN switch to ENABLE to move EAST.
  - Place the ENABLE DETEN switch to DISABLE to move the robot SOUTH.
  - Place the ENABLE DETEN switch back to ENABLE to move the robot WEST.
- 20.4 Once the end-of-arm tool is aligned to the bolt, perform the following to detention the bolt:
- 20.4.1 Place the ENABLE DETEN switch to ENABLE and the DETENTION MODE switch to STEP.
- 20.4.2 Press the INITIATE/CONT button once to exit the jog mode.
- 

**NOTE**

The preceding step places the bolt detention process back to normal configuration and the bolt detensioning procedure must be followed per WP 05-WH1710.

---

- 20.5 Press the INITIATE/CONT button again to detention the bolt.
- 20.6 Return to Step 18.5 after detensioning is complete.
- 21.0 REPOSITIONING OF RH-TRU 72-B TO POSITION X
- 

**Note**

The following steps provide instructions to reposition the RH-TRU 72-B from position Y1 to position X to recover from lid binding.

---

- 21.1 **IF** PINTLE GRAPPLE lamp is **NOT ON**,  
**THEN** perform the following:
- 21.1.1 Place GRAPPLE HOIST MAN - OFF - AUTO switch in MAN.

- 21.1.2 Press JOG LIFT and/or JOG LOWER button to properly set grapple on pintle until PINTLE GRAPPLE CONTACT lamp is **ON**.

**CAUTION**

Failure to verify no weight on grapple may cause damage to IV lid.

- 21.2 Verify no weight on grapple, using grapple weight indicator.
- 21.3 Place FACILITY GRAPPLE 41-T-022 OPEN - CLOSE switch in **OPEN** position.
- 21.4 Verify FACILITY GRAPPLE 41-T-022 **OPEN** lamp is **ON**.
- 21.5 Push JOG LIFT button until grapple is free from RH-TRU 72-B.

**CAUTION**

Failure to verify grapple is free may result in damage to lid and/or RH-TRU 72-B.

- 21.6 Visually verify grapple is free from RH-TRU 72-B by using grapple weight indicator and/or observing with CCTV.
- 21.7 Place GRAPPLE HOIST MAN - OFF - AUTO switch in AUTO.
- 21.8 Push HOIST POS F button to raise grapple hoist to position F.
- 21.9 When hoist reaches position F, verify HOIST POS F lamp is **ON**.
- 21.10 Place CANISTER TRANSFER SYSTEM MODE switch in **ASSY**.
- 21.11 Press SHIELD VALVE 41-N-003 **CLOSE** button.
- 21.12 Ensure SHIELD VALVE 41-N-003 is **CLOSED**.
- 21.13 Ensure the following:
- CANISTER SHUTTLE CAR switch is in AUTO.
  - GRAPPLE HOIST switch is in AUTO.
  - INTERLOCK switch is in NORMAL.

- ROBOTS HOME lamp is **ON**.

- 21.14 Push HOT CELL PORT LID DETENSION POS X button.
- 21.15 Verify HOT CELL PORT LID DETENSION POS X lamp is **ON**.
- 21.16 Verify position X camera shows alignment with the cask basket using laser indication (Camera #4 with Diamond Marker #1).
- 21.17 **IF** laser indication is not in alignment, **THEN** perform the following:
  - 21.17.1 Ensure CANISTER TRANSFER SYSTEM MODE switch is in **XFER**.
  - 21.17.2 Ensure CANISTER SHUTTLE CAR switch is in **MAN**.
  - 21.17.3 Press FORWARD or REVERSE button until laser indication is aligned properly.

22.0 LOADED RH-TRU 72-B PREPARATION FOR TRAILER LOADING

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**Note**

This section is to be utilized when a loaded RH-TRU 72-B is in the Cask Prep Stand with the OC lid removed and the IV lid vented.

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**Note**

During the performance of this process, an RCT must provide continuous coverage.

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- 22.1 Ensure the applicable sections of WP 05-WH1744 have been completed.
- 22.2 WHE, ensure an adequate number of WHO personnel are available to support RH-TRU 72-B cask operations.

**SIGN-OFF WHE**

- 22.3 WHE, verify the RH WHB is in RH Waste Handling Mode by contacting the CMRO and initial on Attachment 3.

**SIGN-OFF WHE**

- 22.4 WHT, perform IV lid installation as follows:
  - 22.4.1 Torque the eight IV lid closure bolts in star pattern, following the number system on lid, to 100 to 200 lb-ft.

22.4.2 Ensure the IV seal test port closure bolt is torqued to 15 to 20 lb-ft.

**SIGN-OFF WH**

22.4.3 Ensure the IV backfill port closure bolt is torqued to 15 to 20 lb-ft.

**SIGN-OFF WH**

22.4.4 Install IV gas sampling port closure bolt.

22.4.5 Torque IV gas sampling port closure bolt to 15 to 20 lb-ft.

**SIGN-OFF WH**

22.5 Perform OC lid installation as follows:

22.5.1 Match OC lid and OC body S/Ns and record on Attachment 3.

**SIGN-OFF WH**

22.5.2 Connect OC lift fixture, or Ultra Light lift fixture, and load cell to OC lid.

**CAUTION**

Exceeding a load cell indication of 3,670 lb may damage the OC lid lift socket. The average weight of OC lid is 1.670 lb.

22.5.3 Install OC lid.

22.5.4 Remove lift fixture from OC lid.

22.5.5 Install 18 OC lid closure bolts on the OC lid until bolts are tight against lid.

---

**Note**

To ensure proper sealing, OC lid closure bolt torque shall be applied in three steps of approximately 220 lb-ft per load step.

---

22.5.6 Torque 18 OC lid closure bolts, following the numbering system on the lid, to 600 to 700 lb-ft.

**SIGN-OFF WH**

22.5.7 Install the OC seal test port closure bolt.

22.5.8 Torque OC seal test port closure bolt to 15 to 20 lb-ft.

**SIGN-OFF WH**

22.5.9 Install OC gas sampling port closure bolt.

22.5.10 Torque OC gas sampling port closure bolt to 15 to 20 lb-ft.

**SIGN-OFF WH**

22.6 Raise the cask prep stand to PASS THRU.

22.7 Position Cask Transfer Car with the RH-TRU 72-B at the end of the tracks.

22.8 Install trunnion bushings on RH-TRU 72-B lifting trunnions, if needed.

22.9 Perform trailer loading per WP 05-WH1727.

Attachment 1 - RH-TRU 72-B Loading Data Sheet

STEP NO.	DESCRIPTION	INITIALS										
9.2	Adequate number of WHO personnel are available to support RH-TRU 72-B loading	WHE _____										
9.3	WHB is configured for RH Waste Handling Mode	WHE _____										
9.4	A TR is present and has approved the loading process	WHE _____										
9.5	Payload Assembly ID: _____ Total Payload Weight: _____	WHE _____										
9.6	RH-TRU 72-B S/N: _____ RH-TRU 72-B Empty Weight: _____	WHE _____										
9.7	<table style="margin: auto; border: none;"> <tr> <td style="border: none;">_____</td> <td style="border: none;">+</td> <td style="border: none;">_____</td> <td style="border: none;">=</td> <td style="border: none;">_____</td> </tr> <tr> <td style="border: none;">Payload Weight</td> <td style="border: none;"></td> <td style="border: none;">RH-TRU 72-B Empty Weight</td> <td style="border: none;"></td> <td style="border: none;">RH-TRU Total Weight</td> </tr> </table>	_____	+	_____	=	_____	Payload Weight		RH-TRU 72-B Empty Weight		RH-TRU Total Weight	WHE _____
_____	+	_____	=	_____								
Payload Weight		RH-TRU 72-B Empty Weight		RH-TRU Total Weight								
9.8	RH-TRU 72-B Total Weight ≤ 45,000 lb	WHE _____										
9.93	Activity on RH TRU 72-B IV lid exterior is below acceptable limits	RCT _____										
9.94	Record torque wrench ID number: _____ Calibration due date: _____	WH _____										
9.95	IV lid S/N: _____ OC body S/N: _____	WH _____										
9.99	Torque eight IV lid closure bolts in star pattern to 100 to 200 lb-ft	WH _____										
9.102	Leak test of inner lid is complete per DOE/WIPP 02-3284	WHE _____										
9.103.3	Activity is below acceptable limits on OC lid and OC lid exterior	RCT _____										
9.103.12	OC Lid components and hardware satisfactory	WH _____										
9.103.13	OC Lid serial number: _____	WH _____										
9.103.17	OC lid bolts torqued 600-700 lb-ft	WH _____										
9.103.20	Leak test of outer lid per DOE/WIPP 02-3284 completed	WH _____										
10.1	Trailer loading complete	WH _____										
10.4	Activity is below acceptable limits on RH-TRU 72-B exterior and trailer RH-TRU 72-B Exterior Surface Contamination Survey Results: α _____ β-γ _____	RCT _____										

Attachment 1 - RH-TRU 72-B Loading Data Sheet

STEP NO.	DESCRIPTION	INITIALS	
10.5	RH-TRU 72-B Exterior Surface Dose Rate Survey Results: $\beta$ - $\gamma$ _____ $\eta$ _____  RH-TRU 72-B Exterior 1 meter (2 meters if T. I. Is greater than 10 ) Dose Rate Survey Results: $\beta$ - $\gamma$ _____ $\eta$ _____  Survey No. _____	RCT _____	
10.7	Transport Vehicle Occupied Area Dose Rate Survey, if applicable:  Results: $\beta$ - $\gamma$ _____ $\eta$ _____  Survey No. _____	RCT or N/A _____	
10.8	Unit is ready for transport	WH	
Performers responsible for step completion enter printed names and initials below:			
Printed Name	Signature	Date	Initials
Printed Name	Signature	Date	Initials
Printed Name	Signature	Date	Initials
Printed Name	Signature	Date	Initials
REMARKS: _____			
_____			
_____			
_____			
_____			
<b>REVIEW &amp; VALIDATION:</b> _____ / _____ / _____ <div style="display: flex; justify-content: space-between; width: 100%;"> <span>WHE (Print Name)</span> <span>Signature</span> <span>Date</span> </div>			

Attachment 2 - CNS10-160B Cask Data Sheet

STEP	DESCRIPTION	INITIAL
12.3.3	Lid components and hardware satisfactory	WH _____
12.4.2	Inner body inspections satisfactory	WH _____
12.5	Impact limiters satisfactory	WH _____
12.7	Outer body components and hardware satisfactory	WH _____
13.2	Adequate number of WHO personnel are available	WHE _____
13.3	Plant is configured for RH Waste Handling Mode	WHE _____
13.8	Payload Container Identification Numbers: _____	
	Payload Container Identification Numbers: _____	
	Payload Container Identification Numbers: _____	
	Payload Container Identification Numbers: _____	
	Payload Container Identification Numbers: _____	
	Payload Container Identification Numbers: _____	
	Payload Container Identification Numbers: _____	
	Payload Container Identification Numbers: _____	
	Payload Container Identification Numbers: _____	
13.9	Total Payload Weight: _____ Cask Weight: _____	WH _____
13.10	Total Payload Weight less than 72,000 lb	WH _____
13.11	CNS10-160B Cask Serial No: _____	WH _____
14.8	Activity on smears is below acceptable limits for the CNS10-160B Cask primary lid exterior	RCT _____
15.1	Trailer loading complete	WH _____
15.4	<b>RADIOLOGICAL SURVEYS</b>	RCT _____
	RH-TRU CNS10-160B Cask Exterior Surface Contamination Survey Results: α _____ β-γ _____	

Attachment 2 - CNS10-160B Cask Data Sheet

STEP	DESCRIPTION	INITIAL	
15.5	RH-TRU CNS10-160B Cask Exterior Surface Dose Rate Survey Results: $\beta$ - $\gamma$ _____ $\eta$ _____  RH-TRU CNS10-160B Cask Exterior 1 meter (2 meters if T. I. Is greater than 10) Dose Rate Survey Results: $\beta$ - $\gamma$ _____ $\eta$ _____	RCT _____	
15.7	Transport Vehicle Occupied Area Dose Rate Survey, if applicable:  Results: $\beta$ - $\gamma$ _____ $\eta$ _____  If applicable:  Survey No.: _____	RCT or N/A _____	
15.8	Unit is ready for transport	WH _____	
Performers responsible for step completion enter printed names and initials below:			
Printed Name	Signature	Date	Initials
Printed Name	Signature	Date	Initials
Printed Name	Signature	Date	Initials
Printed Name	Signature	Date	Initials
REMARKS: _____			
<b>REVIEW &amp; VALIDATION:</b> _____ / _____ / _____ <div style="display: flex; justify-content: space-around; width: 100%;"> <span>WHE (Print Name)</span> <span>Signature</span> <span>Date</span> </div>			

