

WP 05-WH1752

Revision 4

10-160B Shielded Insert Installation and Removal

Technical Procedure

EFFECTIVE DATE: 02/05/09

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APPROVED FOR USE

CONTINUOUS USE PROCEDURE

TABLE OF CONTENTS

INTRODUCTION 3

REFERENCES 3

PRECAUTIONS AND LIMITATIONS 3

PREREQUISITE ACTIONS 4

PERFORMANCE 4

1.0 LOADING CNS 10-160B SHIELDED INSERT INTO RCTC 4

2.0 LOADING CNS 10-160B SHIELDED INSERT INTO CANISTER SHUTTLE
CAR 5

3.0 RETRIEVAL OF CNS 10-160B SHIELDED INSERT 7

INTRODUCTION¹

This procedure provides instructions for installing and removing the shielded insert used to process CNS 10-160B canisters through the transfer cell.

No records are generated by the performance of this procedure.

REFERENCES

BASELINE DOCUMENT

- DOE Standard 1090-2007, *Hoisting and Rigging*

REFERENCED DOCUMENTS

- WP 05-WH1701, Road Cask Transfer Car Operation
- WP 05-WH1705, RH Canister Transfer System
- WP 05-WH1714, RH Cask Preparation Station 41-Z-076
- WP 05-WH1719, 25-Ton Cask Unloading Room Crane
- WP 05-WH1741, 140/25-Ton Remote Handling Crane 41-T-001
- WP 05-WH4401, Waste Handling Operator Event Response

PRECAUTIONS AND LIMITATIONS

- Only personnel qualified as an Remote Handled (RH) Waste Handling Technician/Engineer (WHT/WHE), or trainees operating under direct supervision of an RH qualified WHT/WHE, are authorized to perform waste handling activities specified in this procedure.
- If this procedure cannot be performed as written, a WHE **SHALL** be contacted.
- WHE should be notified if any abnormal conditions are found during performance of this procedure.
- Abnormal events that require the cessation of this procedure, such as a radiological event, shall be performed in accordance with WP 05-WH4401.
- Procedure may be started at any performance section as long as prerequisite actions are verified complete.

PREREQUISITE ACTIONS

- | 1.0 WHE, verify preoperational checks are performed on the following RH WH equipment:
 - RH Canister Transfer System per WP 05-WH1705
 - 25-Ton Cask Unloading Room (CUR) Crane per WP 05-WH1719
 - 72-B Road Cask Transfer Car (RCTC) per WP 05-WH1701
 - 140/25-Ton Remote Handling Crane 41-T-001 per WP 05-WH1741
 - Cask Prep Station per WP 05-WH1714, if necessary
- | 2.0 Ensure Closed-Circuit TV (CCTV) system is **ON** and operable.
- | 3.0 Ensure CUR crane is out of the way of the RCTC.
- 4.0 **IF** placing CNS 10-160B shielded insert into RCTC,
THEN GO TO Section 1.0.
- 5.0 **IF** placing CNS 10-160B shielded insert into the canister shuttle car,
THEN GO TO Section 2.0.
- 6.0 **IF** removing CNS 10-160B shielded insert from canister shuttle car,
THEN GO TO Section 3.0.

PERFORMANCE

- 1.0 LOADING CNS 10-160B SHIELDED INSERT INTO RCTC
 - | 1.1 Ensure RH-TRU 72-B RCTC is positioned at south end of CUR rails.
 - 1.2 Engage CNS 10-160B shielded insert trunnions with cask lifting yoke and place into RH-TRU 72-B RCTC.
 - 1.3 Disengage the cask lifting yoke from the shielded insert.
 - 1.4 Return cask lifting yoke to proper storage area.
 - | 1.5 Ensure Cask Prep Stand is at PASS THRU.
 - 1.6 Position RH-TRU 72-B RCTC with CNS 10-160B shielded insert in CUR at north automatic stop.

- 2.0 LOADING CNS 10-160B SHIELDED INSERT INTO CANISTER SHUTTLE CAR
- 2.1 Verify CUR PORT ROAD CASK POS W lamp is **ON**, indicating the CSC is at position W.
- 2.2 Ensure position W camera shows alignment with the cask basked using laser indication (Camera #6 with Diamond marker #1).
- 2.3 **IF** laser indication is not in alignment, or EAST END OVERTRAVEL **STOP** lamp is **ON**,
THEN perform the following:
- 2.3.1 Ensure CANISTER TRANSFER SYSTEM MODE switch is in XFER.
- 2.3.2 Ensure CANISTER SHUTTLE CAR switch is in MAN.
- 2.3.3 Press FORWARD or REVERSE button until laser indication is aligned properly, and EAST END OVERTRAVEL STOP lamp is **OFF**, as applicable.
- 2.3.4 Place CANISTER TRANSFER SYSTEM MODE switch in ASSY.
- 2.3.5 Place CANISTER SHUTTLE CAR switch in AUTO.
- 2.4 Perform the following at Control Panel 411-CP04/157 in CUR:
- 2.4.1 Ensure canister shuttle car is empty using CCTV cameras.
- 2.4.2 Verify CUR shield valve green CLOSED lamp is **ON**.
- 2.4.3 Place key switch in **MAN** position.
- 2.4.4 Press START push button.
- 2.4.5 Verify POWER ON light is **ON**.
- 2.4.6 Verify white HOIST IN POSITION lamp is **ON**.
- 2.4.7 Using appropriate controls, align 25-ton CUR crane with CNS 10-160B shielded insert trunnions.
- 2.4.8 Lift CNS 10-160B shielded insert clear of RCTC until white HOIST IN POSITION light is **ON**.
- 2.4.9 Locate crane with CNS 10-160B shielded insert in the **HOME** position with the Trolley in full north and Bridge full west.
- 2.4.10 Verify green OPEN PERMISSIVE lamp is **ON**.

- 2.4.11 Open CUR shield valve.
- 2.4.12 Verify CUR shield valve red OPEN lamp is **ON**.
- 2.4.13 Ensure MICRO SPEED switch is in **ON** position.
- 2.4.14 Press START button.
 - Verify both green TROLLEY IN POSITION lamps are **ON**.
 - Verify both white BRIDGE IN POSITION lamps are **ON**.
- 2.4.15 Using appropriate controls, lower CNS 10-160B shielded insert into canister shuttle car.
- 2.4.16 Trolley south until yoke is in contact with cask basket.
- 2.4.17 Using appropriate controls, retract crane yoke into upper limit.
- 2.4.18 Verify white HOIST IN POSITION lamp is **ON**.
- 2.4.19 Close CUR shield valve.
- 2.4.20 Verify CUR shield valve green CLOSED lamp is **ON**.
- 2.4.21 Place key switch in **OFF** position.
- 2.4.22 Verify POWER ON light goes **OFF**.
- 2.5 Ensure the following at Control Panel 411-CP-264-04 in Cask Loading Room:
 - CANISTER TRANSFER SYSTEM MODE switch is in **XFER**.
 - CANISTER SHUTTLE CAR AUTO - MANUAL switch is in **AUTO**.
 - Green SHIELD VALVE 41-N-003 lamp is **ON**.
 - Green CUR VALVE CLOSED lamp is **ON**.
 - Green ROBOTS HOME lamp is **ON**.
- 2.6 Push HOT CELL PORT LID DETENSION POS X button to initiate CSC movement to detension location (position X).

3.0 RETRIEVAL OF CNS 10-160B SHIELDED INSERT

- 3.1 Ensure RH-TRU 72-B RCTC is positioned in CUR or at north automatic stop.
- 3.2 At Control Panel 411-CP-264-04 in the Cask Loading Room, ensure the following:
- Green CUR VALVE CLOSED lamp is **ON**.
 - Green SHIELD VALVE 41-N-003 lamp is **ON**.
 - CANISTER TRANSFER SYSTEM MODE switch is in **XFER**.
 - CANISTER SHUTTLE CAR AUTO - MANUAL switch is in **AUTO**.
 - Green ROBOTS HOME lamp is **ON**.
- 3.3 Verify CUR PORT ROAD CASK POS W lamp is **ON**, indicating the CSC is at position W.
- 3.4 Ensure position W camera shows alignment with the cask basket using laser indication (Camera #6 with Diamond Marker #1).
- 3.5 **IF** laser indication is not in alignment or EAST END OVERTRAVEL **STOP** lamp is **ON**.
THEN perform the following:
- 3.5.1 Ensure CANISTER TRANSFER SYSTEM MODE switch is in XFER.
- 3.5.2 Ensure CANISTER SHUTTLE CAR switch is in MAN.
- 3.5.3 Pres FORWARD or REVERSE button until laser indication is aligned properly, and EAST END OVERTRAVEL STOP lamp is **OFF**, as applicable.
- 3.5.4 Place CANISTER TRANSFER SYSTEM MODE switch in ASSY.
- 3.5.5 Place CANISTER SHUTTLE CAR switch in AUTO.
- 3.6 Ensure shielded insert is empty with CCTV cameras.
- 3.7 At Control Panel 411-CP04/157 in the CUR, perform the following:
- 3.7.1 Place key switch in the **MAN** position.
- 3.7.2 Verify the CUR shield valve green CLOSED lamp is **ON**.

- 3.7.3 Press START push button.
- 3.7.4 Verify POWER ON light is **ON**.
- 3.7.5 Ensure crane is in the HOME position with the Trolley full north and Bridge full west.
- 3.7.6 Verify white HOIST IN POSITION lamp is **ON**.
- 3.7.7 Verify green OPEN PERMISSIVE lamp is **ON**.
- 3.8 Open the CUR shield valve.
- 3.9 Verify CUR shield valve red OPEN lamp is **ON**.
- 3.10 Place MICRO SPEED switch in **ON** position.
- 3.11 Press START button.
 - Verify both green TROLLEY IN POSITION lamps are **ON**.
 - Verify both white BRIDGE IN POSITION lamps are **ON**.
- 3.12 Using appropriate controls, lower hoist to engage CNS 10-160B shielded insert trunnions.
- 3.13 Lift CNS 10-160B shielded insert to upper limit.
- 3.14 Verify white HOIST IN POSITION lamp is **ON**.
- 3.15 Close CUR shield valve.
- 3.16 Verify CUR shield valve green CLOSED lamp is **ON**.
- 3.17 Align CNS 10-160B shielded insert with RCTC.
- 3.18 Lower CNS 10-160B shielded insert into RCTC.
- 3.19 Using appropriate controls, disengage CUR crane lifting yoke from CNS 10-160B shielded insert.
- 3.20 Using appropriate controls, position CUR crane so it will not interfere with personnel or equipment.
- 3.21 Place key switch in **OFF** position.
- 3.22 Verify POWER ON light goes **OFF**.
- 3.23 Ensure Cask Prep Stand is at PASS THRU.

- 3.24 Position CNS 10-160B shielded insert at the south end of the CUR rails.
- 3.25 Engage CNS 10-160B shielded insert trunnions with cask lifting yoke and place in cask storage rack.
- 3.26 Disengage cask lifting yoke from CNS 10-160B shielded insert.
- 3.27 Return cask lifting yoke to proper storage area.