

WP 05-WH1716

Revision 4

**CNS 10-160B Cask
Operation**

Technical Procedure

EFFECTIVE DATE: 06/24/09

Randy Britain
APPROVED FOR USE

CONTINUOUS USE PROCEDURE

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INTRODUCTION ^{1, 2, 4, 5}

This procedure provides guidance for opening the CNS 10-160B Cask at the Waste Isolation Pilot Plant (WIPP) in support of cask maintenance activities and personnel training. This procedure is not used for loading or unloading payload assemblies.

This procedure will begin after the completion of WP 05-WH1718 or WP 05-WH1715. **ALL** cask operations will be performed at the Cask Prep Station.

The following quality assurance records are generated as a result of performing this procedure:

- Attachment 1, CNS 10-160B Cask Data Sheet

REFERENCES

BASELINE DOCUMENTS

- Title 10 *Code of Federal Regulations* (CFR), Part 7, "Advisory Committees"
- 10 CFR, Part 20, "Standards for Protection Against Radiation"
- 49 CFR, Part 173, § I, "Class 7 (Radioactive) Materials"
- 49 CFR, Part 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements"
- DOE Standard 1090-2004, *Hoisting and Rigging*
- DOE/WIPP-06-3336, *CNS 10-160B Program Guidance*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- *Safety Analysis Report for the CNS 10-160B Shipping Package*, Chapter 7
- NRC Docket 71-9204, *Safety Analysis Report for the CNS 10-160B Shipping Package*
- CNS 10-160B Certificate of Compliance, Docket Number 71-9204
- 08-PT.03, WIPP Quality Assurance Plan for Type B Packaging
- WP 12-HP1100, Radiological Surveys
- WP 12-HP4000, Emergency Radiological Control Responses

REFERENCED DOCUMENTS

- WP 05-WH1701, Road Cask Transfer Car Operation
- WP 05-WH1715, Preparation of an Empty CNS 10-160B Cask for Shipment
- WP 05-WH1718, CNS 10-160B Trailer Unloading
- WP 05-WH1741, 140/25-Ton Remote Handling Crane 41-T-001

EQUIPMENT

- Calibrated Torque Wrench capable of torquing to 330 lb-ft
- 2 5/8-inch socket for the lid bolts
- Clean rags
- Acceptable bolt lubricant (Moly-Z, Neolube, or Anti-Seize)

PRECAUTIONS AND LIMITATIONS

- Only personnel qualified on the CNS 10-160B Cask as a Waste Handling Technician/Engineer or trainees operating under the direct supervision of a CNS 10-160B Cask qualified Waste Handling Technician/Engineer (WHT/WHE) are authorized to perform the waste handling activities specified in this procedure.
- If procedure cannot be performed as written WHE shall be contacted.
- CNS 10-160B Cask used for transuranic (TRU) waste shipments are potentially contaminated within the cask.
- The loading and unloading operation should only be performed in a dry (no precipitation) environment. In the event of sudden precipitation during outdoor loading operations, precautions such as covering the cavity, shall be implemented to prevent water from entering the cavity. All free standing moisture in the cavity shall be removed.
- Radiological Control must verify that items to be inspected are below contamination limits before the inspection can be performed.
- WHE is to be notified of any abnormal conditions found during inspections.
- Quality Assurance (QA) is to be notified of abnormal conditions found during inspections.

- Any step that results in N/A on Attachment 1 must be initiated by person performing steps.
- Performers of this procedure may print name, sign, initial, and date Attachment 1 at any time during the performance of this procedure.
- Weight Approximates:

Cask Lid Weight:

Primary Lid 5,300 lbs
Secondary Lid 2,150 lbs
Total Lid Weight 7,450 lbs
- Cask Weight Empty (Including Lids, without Impact Limiters):

47,000 lbs

PREREQUISITE ACTIONS

- 1.0 WHE, verify the following:
 - Preoperational checks are complete for the 140/25-ton remote-handled crane (41-T-001), per WP 05-WH1741.
 - Preoperational checks are complete for the cask transfer car (CTC), per WP 05-WH1701.
 - CNS 10-160B Cask has been removed from the 10-160B trailer per WP 05-WH1718.
 - WP 05-WH1715, if applicable, is completed.
- 2.0 Ensure CTC with CNS 10-160B Cask is positioned in the cask prep stand.
- 3.0 Ensure lift lug cover plates are installed on cask prep stand.
- 4.0 Verify Prerequisite Actions have been completed.

SIGN-OFF WHE

PERFORMANCE

1.0 OPENING A CNS 10-160B CASK

1.1 WH, record the following on Attachment 1:

- CNS 10-160B Cask serial number

SIGN-OFF WH

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

SIGN-OFF RCT or N/A

NOTE

Any discrepancies found during the performance of this procedure shall be reported to WHE or Waste Handling Manager (WHM). WHE/WHM will be responsible for resolving discrepancies with Packaging Maintenance Engineer.

1.3 Remove vent port cap.

1.4 WH, **IF** Radiological Assessment Filter (RAF) sample is not going to be taken,
THEN GO TO Step 1.6.

1.5 WH, **IF** RAF sample is to be taken,
THEN perform the following:

1.5.1 RCT, position Continuous Air Monitor (CAM) for venting CNS 10-160B Cask.

1.5.2 Wipe down top of cask around vent port prior to vent tool installation.

1.5.3 Install vent tool and RAF assembly on the vent port.

1.5.4 Ensure ball valve is closed.

1.5.5 Plug control box into applicable power supply.

1.5.6 Ensure 10-160B vent tool has the vacuum line connected to control box.

1.5.7 Ensure the magnet is plugged into the control box.

- 1.5.8 Place control switch on PUMP and MAGNET.
- 1.5.9 Unscrew vent port plug with vent tool.
- 1.5.10 Evacuate for approximately five minutes or as directed by RCT.
- 1.5.11 Turn switch to MAGNETS **ON**.
- 1.5.12 Disconnect vacuum line from RAF assembly.
- 1.5.13 Remove RAF assembly from vent tool.
- 1.5.14 RCT, perform contamination smear of RAF assembly quick connect.
- 1.5.15 Remove filter from RAF assembly.
- 1.5.16 RCT, monitor smear and RAF for gross levels of activity.
- 1.5.17 RCT, place filter in Alpha-6 monitor with no flow, or into an equivalent multichannel analyzer MCA instrument.
- 1.5.18 RCT, let filter count at least five minutes on Alpha-6 monitor or the determined amount of time for an equivalent MCA instrument.
- 1.5.19 RCT, examine spectrum for TRU activity.
- 1.5.20 RCT, **IF** there is observable TRU activity, **THEN, STOP** and notify WHM, CMRO, and RCM.

NOTE

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

- 1.5.21 RCT, record the following on Attachment 2, Radiological Survey Report, Section B, of WP 12-HP1100:
 - Time
 - Pu²³⁹ counts per minute (cpm)
 - Peak channel or peak energy, as applicable
- 1.5.22 RCT, verify activity on smear of RAF assembly and RAF is below acceptable limits.

SIGN-OFF RCT or N/A

- 1.5.23 WH, turn control switch to **OFF** on vent tool controls and unplug control box.

- 1.5.24 Open ball valve on vent tool and allow pressure to equalize.
- 1.6 Remove vent port plug and if necessary, 10-160B vent tool.
- 1.7 Loosen and remove the twenty-four primary lid bolts (24, 1¾-inch -8UN).

NOTE

The rigging used for lifting the lid must have a true angle, with respect to the horizontal, of not less than 45°. A minimum sling length of 2 feet is required to maintain the angle.

- 1.8 Attach appropriate rigging to the crane hook and the three lifting lugs on the secondary lid.

NOTE

Care should be taken during handling operations to prevent damage to cask and lid seal surfaces.

- 1.9 Slowly raise cask lid to clear cask.
- 1.10 **IF** survey is required,
THEN RCT perform contamination survey of primary lid interior and cask interior payload area.
- 1.11 Stage primary lid on the 10-160B lid stand or in a designated laydown area.
- 1.12 Remove crane hook from rigging and primary lid.
- 1.13 **IF** survey is required,
THEN RCT monitor smears for gross level of activity.
- 1.14 **IF** survey is required,
THEN RCT verify activity on the smears is below limits.

SIGN-OFF RCT or N/A

- 1.15 WH, if any abnormal conditions were found during cask operations, notify WHE and QA.

NOTE

Cask inspections and closure will be performed per WP 05-WH1715.

1.16 **GO TO** Attachment 1 and enter the following information:

- Print names of performers
- Sign
- Enter date
- Initial

2.0 REVIEW

2.1 WHE, verify entries on Attachment 1 are complete.

2.2 Sign review/validation block.

2.3 Forward Attachment 1 to Records Coordinator.

Attachment 1 - CNS 10-160B Cask Data Sheet

STEP NO.	DESCRIPTION	INITIAL
PREREQUISITE ACTIONS		
4.0	Prerequisite Actions completed.	WHE
STEP NO.	PERFORMANCE	INITIAL
1.1	CNS 10-160B Cask Serial Number: _____	WH
1.2	Radiological survey deemed necessary. See comments below. Survey No.: _____	RCT or N/A
1.5.22	Activity on smear and RAF is below acceptable limits.	RCT or N/A
1.14	Activity on smears is below acceptable limits.	RCT or N/A

Print Name	Signature	Date	Initials
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Print Name	Signature	Date	Initials
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Print Name	Signature	Date	Initials
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Remarks: _____

Review/Validation: _____

WHE (Print Name)	Signature	Date
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