

# WP 05-WH1745

Revision 6

## CNS 10-160B Trailer Loading

Technical Procedure

EFFECTIVE DATE: 07/15/09

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APPROVED FOR USE

**Continuous Use Procedure**

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

This procedure provides guidance for loading the CNS 10-160B cask onto the CNS 10-160B trailer at the Waste Isolation Pilot Plant (WIPP) in support of CNS 10-160B cask operation, maintenance activities, and personnel training.

The diesel-powered tractor or trailer jockey shall be attended at all times while in the Remote-Handled (RH) Bay as required by LCO 3.4.1. Although there is not a Surveillance Data Sheet for demonstrating compliance with the LCO, it is a Technical Safety Requirement that must be complied with at all times.

Performance of this procedure generates the following record(s), as applicable:

- Attachment 1, CNS 10-160B Cask Trailer Loading Data Sheet
- Attachment 2, Loaded Shipment Mode Compliance Sheet
- Transportation 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 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans"
- 49 CFR §173.401-477, "Class 7 (Radioactive) Materials"
- DOE Standard 1090-2007, *Hoisting and Rigging*
- DOE/WIPP-06-3336, *CNS 10-160B RH Cask Program Guidance*
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- *Safety Analysis Report for the CNS 10-160B Shipping Package*, Chapter 7
- Docket Number 71-9204, CNS 10-160B Certificate of Compliance
- WIPP-023, Fire Hazard Analysis for the Waste Isolation Pilot Plant, Carlsbad, NM

- WP 08-PT.03, WIPP Quality Assurance Program Plan for Type "B" Packaging
- WP 08-PT.14, CNS 10-160B Cask Trailer Operation and Maintenance Manual
- WP 12-FP.01, WIPP Fire Protection Program
- WP 12-FP3003, Combustible Loading Controls for the Waste Handling Building and Underground
- WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description

#### REFERENCED DOCUMENTS

- WP 05-WH1701, Road Cask Transfer Car Operation
- WP 05-WH1715, Preparation of an Empty CNS 10-160B Cask for Shipment
- WP 05-WH1741, 140/25-Ton Remote Handling Crane 41-T-001
- WP 05-WH1744, Surface RH Transuranic Mixed Waste Handling Area Inspections
- WP 05-WH1758, RH Waste Handling Abnormal Operations

#### 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.
- Failure to attend the diesel-powered tractor or trailer jockey at anytime it is within the RH Bay requires contacting the FSM.
- Any diesel-fueled equipment used for maintenance activities in the RH Bay must be contained within a dike prior to use. [**LCO 3.4.1**]
- Only personnel qualified on the CNS 10-160B cask as a Waste Handling Technician/Engineer (WHT/WHE), or trainees operating under the direct supervision of a CNS 10-160B cask-qualified WHT/WHE, are authorized to perform the waste handling activities specified in this procedure.
- If this procedure cannot be performed as written, WHE shall be contacted.

- WHE shall be contacted if abnormal conditions are found during the performance of this procedure.
- The stated values below shall not be exceeded:
  - Maximum empty CNS 10-160B cask weight (including lids w/o impact limiters), 47,000 lb
  - Top impact limiter weight 5,300 lb
  - Bottom impact limiter weight 5,200 lb
- Lift lugs must be removed from the CNS 10-160B cask body prior to transport.
- **DO NOT** lift cask by lifting lugs on the secondary lid.
- Slings used for lifting the cask must have a true angle, with respect to the horizontal of not less than 60 degrees.
- Primary lid alignment pins must not protrude above the upper surface of the primary lid. If they do, remove the alignment pins and place them in tool box on trailer.
- Roll-around ladders should be used when accessing the trailer.
- When moving a heavy load with 140/25-ton crane, a tag line or stabilizing bar should be used.
- Prior to moving trailer, operator shall allow sufficient time (approximately 2 minutes) for the air pressure to stabilize after attaching the tractor air supply to the trailer.
- The removal of old shipping labels and installation of appropriate new labels, may be done at any time during the performance of this procedure.
- The trailer jockey may only be used to move the CNS 10-160B trailer if the trailer is empty or has only the bottom impact limiter in place.
- A spotter must be used when the diesel-fueled tractor or trailer jockey are used to position the trailer into, or remove a trailer from the RH Bay.
- A transport tractor must be used to move the CNS 10-160B trailer if the CNS 10-160B cask is on the trailer.
- Any step that results in N/A on Attachment 1 must be initialed by person performing step.

- Performers of procedure may print, sign, initial, and place date on Attachment 1 at any time during the performance of this procedure, except those steps which document compliance to an LCO.
- Doors 145 and 146 must be closed prior to bringing the trailer jockey or transport tractor into the RH Bay to stage or remove the CNS 10-160B trailer.

### **PREREQUISITE ACTIONS**

- 1.0 WHE, verify preoperational checks have been completed on the following equipment:
  - 140/25-Ton Remote Handling Crane per WP 05-WH1741
  - Road Cask Transfer Car per WP 05-WH1701
  - Genie, if needed
  - Work Assist Vehicle, if needed
- 2.0 Verify the data sheet per WP 05-WH1715 is complete for the empty CNS 10-160B cask being loaded, if applicable.
- 3.0 Obtain Transportation Data Sheet from Transportation Engineer (TE) and record on Attachment 1.

#### **SIGN-OFF - WHE**

- 4.0 Record the following information on Attachment 1:
  - CNS 10-160B cask serial number (S/N)
  - Trailer number S/N
  - Shipment number

#### **SIGN-OFF - WHE**

- 5.0 Verify trailer to be loaded has current annual inspection.
- 6.0 Record the trailer inspection date on Attachment 1.

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

- 7.0 Record on Attachment 1, identification number (ID) and calibration due date for the torque wrench used to torque CNS 10-160B cask lifting lugs.

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

**PERFORMANCE**

## 1.0 PRE-LOADING

**CAUTION**

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

- 1.1 **IF** trailer is not already staged in RH Bay,  
**THEN** ensure Doors 145 and 146 are closed prior to bringing the trailer in with the trailer jockey or transport tractor.
- 1.2 **IF** trailer is not positioned in the RH Bay,  
**THEN** back trailer into the RH Bay and document start of attendance of liquid-fueled tractor or trailer jockey on Attachment 1. **[LCO 3.4.1]**

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

- 1.3 Ensure trailer is positioned within reach of the 140/25-Ton Remote Handling Crane.
- 1.4 Visually verify no sharp edges exist on the crank handles.
- 1.5 Ensure front landing gear is lowered; adjust as required until trailer is level.
- 1.6 Remove diesel-powered tractor or trailer jockey from the RH Bay and document end of attendance on Attachment 1. **[LCO 3.4.1]**

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

- 1.7 WH, ensure the following:
  - Trailer wheels are chocked.
  - Trailer stands installed on free-standing trailer.
- 1.8 Ensure the lifting lugs on CNS 10-160B cask are installed and torque bolts to  $200 \pm 20$  ft-lb and record on Attachment 1.

**SIGN-OFF - WH**

- 1.9 **IF** trailer is to be loaded with a CNS 10-160B transuranic waste shipment,  
**THEN** obtain WP 05-WH1758, Attachment 2, CNS 10-160B Cask Data Sheet.

- 1.9.1 Obtain completed leak testing documentation on CNS 10-160B cask from Duratek representative and initial on Attachment 2.

## **SIGN-OFF WHE**

### 2.0 LOADING THE CNS 10-160B TRAILER

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#### **NOTE**

The rigging used for lifting the CNS 10-160B cask must have a true angle with respect to the horizontal of not less than 60 degrees. This requires a minimum sling of 8 feet.

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- 2.1 Connect crane and rigging to CNS 10-160B cask lifting lugs.

#### **CAUTION**

To prevent damage to CNS 10-160B cask, lifting lugs on the lid cannot be used to lift CNS 10-160B cask.

#### **CAUTION**

To prevent damage to CNS 10-160B cask, lifting equipment must be adequate to lift CNS 10-160B cask. Empty weight of CNS 10-160B cask (without impact limiters) is approximately 47,000 lb, or as stated on nameplate.

- 2.2 Ensure the inside surface of the lower impact limiter is clean and free of debris.
- 2.3 Ensure the top of the CNS 10-160B cask is clean and free of debris.
- 2.4 Lift the CNS 10-160B cask.
- 2.5 Ensure the bottom of the CNS 10-160B cask is clean and free of debris.
- 2.6 Position CNS 10-160B cask inside the bottom impact limiter using alignment mark.
- 2.7 Using 140/25-ton crane, remove CNS 10-160B cask lifting lugs and properly store on front of trailer.
- 2.8 Remove the crane and rigging from CNS 10-160B cask lifting lugs.
- 2.9 Replace CNS 10-160B cask lift lug thread protectors.

2.10 Connect the CNS 10-160B cask to trailer tie-down ratchet binders and tighten.

2.11 Secure CNS 10-160B cask to trailer tie-down ratchet binder handles.

### 3.0 INSTALLING IMPACT LIMITER

3.1 Attach the crane hook and rigging to the lifting lugs on the upper impact limiter.

3.2 Ensure impact limiter ratchet binders are positioned out of the way for lowering the upper impact limiter.

3.3 Position the upper impact limiter above the CNS 10-160B cask using alignment marks on the CNS 10-160B cask body and impact limiter.

#### CAUTION

Care should be taken during handling operations to prevent damage to impact limiters. The primary lid bolts must be seated in the recesses in the bottom of the upper impact limiter to avoid a gap between the bottom of the upper impact limiter and the top edge of the thermal barrier.

3.4 Slowly lower upper impact limiter onto the CNS 10-160B cask.

3.5 Remove the crane and rigging from upper impact limiter and install covers on impact limiter lifting lugs.

3.6 Visually inspect the ratchet binder bolts for signs of cracking or other defects.

3.7 Attach the impact limiter ratchet binders to the upper and bottom impact limiters and tighten hand tight.

3.8 Return the ratchet handles to their storage position.

3.9 For empty CNS 10-160B shipment, place "EMPTY" and "UN 2908" labels on CNS 10-160B cask.

3.10 **IF** the CNS 10-160B cask is loaded with transuranic waste, **THEN** install tamper indicating security seal between upper impact limiter and cask body, and record tamper indicating security seal number and seal date on Attachment 2.

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

3.11 WHE, **IF** CNS 10-160B cask is loaded with transuranic waste **THEN** contact TE and request RH packaging and trailer to be properly labeled and placards applied.

3.12 Ensure on Attachment 1, that trailer loading is complete.

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

3.13 Back diesel-powered tractor into the RH Bay and attach to trailer and document start of attendance on Attachment 1. **[LCO 3.4.1]**

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

3.14 Remove diesel-powered tractor with trailer attached from the RH Bay and document end of attendance on Attachment 1. **[LCO 3.4.1]**

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

3.15 **GO TO** Attachment 1 and 2 (if applicable), and enter the following information:

- Printed name(s) of performer(s)
- Signature(s)
- Date(s)
- Initial(s)

### 4.0 WHE REVIEW

4.1 WHE, perform the following:

- [ A ] Ensure Attachment 1 and 2, if applicable, are completed properly.
- [ B ] Print name, sign, and date the review/validation block.
- [ C ] Forward (hand carry or fax) a copy of the completed Attachment 1 and 2, if completed, to the TE and place a copy in the Travel Folder.
- [ D ] Forward original Attachment 1 and 2, if necessary, to Records Coordinator.

Attachment 1 - CNS 10-160B Cask Trailer Loading Data Sheet

Step	Action	Initial
<b>PREREQUISITE ACTIONS</b>		
3.0	Obtain Transportation Data Sheet from Transportation Engineer	WHE
4.0	CNS 10-160B Cask Serial No.: _____ CNS 10-160B Trailer Serial No.: _____ CNS 10-160B Shipment No.: _____	WHE
6.0	Trailer Inspection Date: _____	WH
7.0	Torque wrench ID #: _____ Calibration due date: _____	WH
<b>PERFORMANCE</b>		
1.2 <b>LCO</b> <b>3.4.1</b>	<b>IF</b> trailer is not positioned in the RH Bay, <b>THEN</b> back trailer into the RH Bay and document start of attendance of diesel-powered tractor or trailer jockey.	WH or N/A
1.6 <b>LCO</b> <b>3.4.1</b>	Remove diesel-powered tractor or trailer jockey from the RH Bay and document end of attendance.	WH or N/A
1.8	Verify CNS 10-160B cask lift lugs installed and torqued to 200 ± 20 ft-lb	WH
3.12	Ensure trailer loading complete	WH
3.13 <b>LCO</b> <b>3.4.1</b>	Back diesel-powered tractor into the RH Bay and attach to trailer and document start of attendance.	WH
3.14 <b>LCO</b> <b>3.4.1</b>	Remove diesel-powered tractor with trailer attached from the RH Bay and document end of attendance.	WH

Print Name	Signature	Date
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Print Name	Signature	Date
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REMARKS: \_\_\_\_\_

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REVIEW/VALIDATION: \_\_\_\_\_

WHE (Printed Name)	Signature	Date
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Attachment 2 - Loaded Shipment Data Sheet

Step	Action	Initial
<b>PERFORMANCE</b>		
1.9.1	Obtain completed leak testing documentation on CNS 10-160B cask from Duratek representative.	WHE
3.10	<p><b>IF</b> the CNS 10-160B cask is loaded with transuranic waste, <b>THEN</b> install tamper indicating security seal between upper impact limiter and cask body, and record tamper indicating security seal number and seal date.</p> <p>No.: _____ Date: _____</p>	WH or N/A

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REMARKS: \_\_\_\_\_

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REVIEW/VALIDATION: \_\_\_\_\_

WHE (Printed Name)	Signature	Date
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