

# WP 05-WH1741

Revision 9

## 140/25-Ton Remote Handling Crane 41-T-001

Technical Procedure

Effective Date: 04/17/09

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APPROVED FOR USE

**TABLE OF CONTENTS**

INTRODUCTION ..... 3

REFERENCES ..... 3

PRECAUTIONS AND LIMITATIONS ..... 3

PREREQUISITE ACTIONS ..... 4

PERFORMANCE ..... 5

1.0 PREOPERATIONAL CHECKS ..... 5

2.0 CRANE OPERATION ..... 7

3.0 CRANE SHUTDOWN ..... 8

## INTRODUCTION

This procedure provides guidance for inspecting and operating the 140/25-Ton Remote Handling Crane 41-T-001 at the Waste Isolation Pilot Plant (WIPP). It also provides guidance for inspecting the RH-TRU 72-B Cask lifting yoke.

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

- Equipment Logbook

## REFERENCES

### BASELINE DOCUMENTS

- 40 *Code of Federal Regulations* (CFR) §264.15, "General Inspection Requirements"
- DOE Standard 1090-2007, *Hoisting and Rigging*
- WP 08-PT.03, WIPP Quality Assurance Program Plan for Type "B" Packaging
- WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description
- 140/25-Ton Crane O & M, American Equipment

### REFERENCED DOCUMENTS

- WP 04-IM1000, Issues Management Processing of WIPP Forms
- EA04IM1000-1-0, WIPP Form

## PRECAUTIONS AND LIMITATIONS

- Crane must be moved slowly when operating close to limit switches to avoid overrunning them.
- Only personnel qualified as Waste Handling Technician/Engineer (WHT/WHE), or trainees under the direct supervision of a qualified WHT/WHE, are authorized to perform the waste handling (WH) activities specified in the procedure.
- During load movements that impair the crane operator's view, a spotter shall be utilized.
- When power is supplied to the crane, operator should wait approximately ten seconds to allow for reset of the Variable Frequency Drive.

- The redundant drive may be used to operate the Bridge, Trolley, or Auxiliary Hoist if the normal drive is not working properly.
- The selector switch for selecting RADIO or PENDANT controls is located on the bridge catwalk control cabinets.

## PREREQUISITE ACTIONS

- 1.0 If a required inspection becomes delinquent, perform the following:
  - Immediately notify Site Environmental Compliance (SEC) of the delinquent inspection.
  - Schedule and complete required inspection.
  - Document the following in a letter to SEC within five working days:
    - Schedule of inspection
    - Reason(s) why the inspection was not performed
    - Any measures taken to offset negative impacts resulting from not performing the inspection
    - Actions to prevent further delinquencies
  - WH, **GO TO** WP 04-IM1000, and ensure a WIPP FORM (EA04IM1000-1-0) is initiated.
  - Safety glasses and a long-sleeve 100% cotton shirt must be worn when opening and closing breakers.
- 2.0 Preoperational checks are to be completed prior to the first crane operation each shift.
- 3.0 Review Equipment Logbook for outstanding deficiencies and Action Requests (ARs).
- 4.0 Record Equipment Number and Not Applicable (N/A) run hours in Equipment Logbook.
- 5.0 Equipment Logbook must be reviewed by WHE on a weekly basis, generally the last day of the work week.

## PERFORMANCE

### 1.0 PREOPERATIONAL CHECKS<sup>1, 2, 3, 4</sup>

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#### NOTE

Deficiencies that are corrected when discovered may be considered a satisfactory check.

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1.1 Prior to energizing crane, perform the following:

- Verify wire ropes are wound properly on drum.
- Verify Bridge Path is clear of obstructions.
- Verify Trolley Path is clear of obstructions.
- Verify **NO abnormal or excessive** leakage of oil/grease from crane mechanisms.

1.2 Verify disconnect switch 41P-SW04/2, 41TM001 Overhead Trav Crane, is **ON**.

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#### NOTE

Only the control device that is to be used requires a preoperational check.

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1.3 Verify the following on controller that will be used:

- Speed control switch is on Normal.
- Trolley switch is on Redundant.
- Bridge switch is on Redundant.
- Auxiliary Hoist switch is on Redundant.

1.4 **IF** pendant is being used,  
**THEN** place red E-STOP button in the **OUT** position.

1.5 If using radio controller, perform the following:

1.5.1 Place ON - OFF switch to **ON** position.

1.5.2 Turn key switch to **ON**.

1.5.3 Verify red BATT lamp is flashing indicating battery is charged.

1.5.4 Press START button.

1.6 Verify white and yellow beacon lights on Bridge are illuminated.

1.7 Verify warning alarm/horn is operable.

1.8 Turn light switch to **ON** position.

- 1.9 Check for burned out Bridge mounted lights.
- 1.10 Verify Main Hoist is **NOT** connected to a load.
- 1.11 Verify Auxiliary Hoist is **NOT** connected to a load.
- 1.12 **IF** auxiliary hoist is to be used,  
**THEN** perform the following:
  - 1.12.1 Lower Auxiliary Hoist using AUX HOIST control.<sup>4</sup>
  - 1.12.2 Inspect the sheaves, wire rope, and hook for any damage.<sup>4</sup>
  - 1.12.3 Raise Auxiliary Hoist using AUX HOIST control.<sup>4</sup>
  - 1.12.4 Verify Upper Limit Switch stops Hoist travel.<sup>4</sup>
- 1.13 Perform the following:
  - Move Trolley north using TROLLEY control.<sup>4</sup>
  - Move Trolley south using TROLLEY control.<sup>4</sup>
  - Move Bridge east using BRIDGE control.<sup>4</sup>
  - Move Bridge west using BRIDGE control.<sup>4</sup>
- 1.14 Verify the following on controller being used:
  - Speed control switch is on Normal.
  - Trolley switch is on Normal.
  - Bridge switch is on Normal.
  - Auxiliary Hoist switch is on Normal.
- 1.15 Verify white beacon light on Bridge is **NOT** illuminated.

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**NOTE**

Only the Hoist to be used requires a preoperational check.

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- 1.16 **IF** Main Hoist will be used,  
**THEN** perform the following:
  - 1.16.1 Lower Main Hoist using MAIN HOIST control.<sup>4</sup>
  - 1.16.2 Inspect the sheaves, wire rope, and hook for any damage.<sup>4</sup>
  - 1.16.3 Raise Main Hoist using MAIN HOIST control.<sup>4</sup>
  - 1.16.4 Verify Upper Limit Switch stops Hoist travel.<sup>4</sup>

1.17 Perform the following:

- Move Trolley north using TROLLEY control.
- Move Trolley south using TROLLEY control.
- Move Bridge east using BRIDGE control.
- Move Bridge west using BRIDGE control.

1.18 If the RH-TRU 72-B Cask lifting yoke will be used, perform the following:

1.18.1 Inspect the lifting yoke for any structural deformation, cracks, or excessive wear.

1.18.2 Record the equipment number and the results of the inspection in the Equipment Logbook.

1.19 Initiate ARs to address any deficiencies that **CANNOT** be corrected by Waste Handling Operations.

1.20 Perform the following:

- Notify WHE of any deficiencies discovered during preoperational checks and the status of each (i.e., deficiencies corrected and ARs generated).
- Notify WHE and report status of preoperational check.

1.21 Record the following information in Equipment Logbook:

- Deficiencies noted
- Corrective actions taken (outstanding/newly generated ARs, etc.)
- Specific Hoist that received preoperational check

1.22 Enter time, date, and signature in Equipment Logbook to document performance of preoperational checks.

1.23 WHE, review Equipment Logbook on a weekly basis, generally the last day of the workweek.

## 2.0 CRANE OPERATION

2.1 While observing hand signals from qualified rigger/spotter (if applicable), spot Hoist over the load.

2.2 Lower Hoist using MAIN HOIST or AUX HOIST control.

2.3 Ensure load is properly rigged.

2.4 Slowly raise Hoist to take up slack.

**WARNING**

Lifting operations are to be stopped immediately if any person gives the STOP signal.

- 2.5 **WHEN** qualified rigger/spotter signals and Operator is satisfied load is secure,  
**THEN** lift load clear of all obstructions.
  - 2.6 Move Bridge and/or Trolley to desired location using BRIDGE/TROLLEY control.
  - 2.7 When load is spotted, lower load using MAIN HOIST or AUX HOIST control if needed.
- 3.0 CRANE SHUTDOWN
- 3.1 Ensure rigging/lifting attachments are removed.
  - 3.2 Raise Hoist to a safe height to prevent personnel injury and equipment damage.
  - 3.3 Turn the light switch to the **OFF** position.
  - 3.4 If pendant is being used, press red E-STOP button.
  - 3.5 If using radio controller perform the following:
    - Place ON - OFF switch to **OFF**.
    - Turn key switch to **OFF**.
  - 3.6 Verify yellow beacon light on the Bridge goes **OFF**.
  - 3.7 Position pendant control out of the way of traffic.