8 - METRIC TON CONTAINER UNHOOK AND CLOSE

Title: Metric Ton Container Unhook and Close **Doc. No.** 2015-MMTS-8

Approval Signatures and Date

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	Initial Release		Annual Review/No Revision Required		Annual Review/Update (see history below)

NOTE: *This document will be reviewed at least annually to ensure its suitability.*

Revision History

Rev. No.	Change description	Author
1	Change description Crosswalk Between NDEP CAPP Review Comments (dated 2014-12-09, 2015-01-30 and 2015-02-26) and Mercury Storage and Transfer Program Document Contents March 10, 2015	Burton Packard and Renee Rodriguez

NOTE*: Hard copies of this document may not be the current version. Refer to the "IAmTheKey" to verify the current version.*

Reference Documents

Document number	Document title

8.1 PURPOSE

This procedure describes the activities and requirements that deal with:

- Removal of the QD fitting (see Section 8.5, Attachment 8.2) from the MT container
- Preparation of the MT container for storage
- Create a record of the filled MT container information in the inventory database system

8.2 SCOPE

This procedure covers the following activities:

- Removing the QD fitting from the MT container
- Closing the MT container
- Preparing and affixing the identification tag
- Recording MT container information in the inventory database system

***NOTE**: Care must be exercised to ensure that all mercury transfer hardware is out of the pathway before MT container removal from the MMTS.*

8.3 OPERATIONS

The QD transfer fitting (see Section 8.5, Attachment 8.2) will be removed from the half-coupling of the MT container that has been filled.

***NOTE:** Peristaltic pumping operations (i.e., transferring mercury) are **never** permitted while MT containers are undergoing closure operations or being removed from the MMTS.*

8.3.1 Required Equipment and Supplies (PPE as specified on page XI of the Executive Summary under General Safety and Health)

Workers need the following supplies and equipment to accomplish the tasks detailed in this procedure:

- Torque wrench for installing the 3-inch NPT plug
- Yellow Teflon® tape to wrap, or rewrap the 3-inch container plugs
- U.S. DOT labels/markings shown below.

8.3.2 Removal of the Transfer Fitting

- Upon completion of transferring mercury from 29 flasks, the Flask Handling Area worker ceases operations with the peristaltic pump and renders the pump in a safe shut-off mode.
- Following safe shut off, the worker does the following:
  - Removes mercury that remains in the looped sections of the transfer tubing by lifting the loops and draining them by gravity. The upstream tubing is drained into the flask; the downstream tubing is drained into the MT container. After the gravity drain is completed, the pump rollers may be released (opened).
  - Disengages the QD clamps of the upper portion of the transfer fitting (see Section 8.5, Attachment 8.2). The fitting is slowly withdrawn while "wiping" the fill tube with a gauze pad to ensure that any small beads of mercury adhering to the tube are captured as the tube is extracted. While holding the gauze at the bottom (the open end) of the fill tube, the fitting is then placed into the adjacent container which has already been fitted with a second threaded portion of a transfer fitting.

***NOTE**: In addition to the available overhead snorkel hoses which are placed in the vicinity of these tasks, the cart-mounted Airfiltronix® snorkel may be used for additional air filtration.*

- Used gauze pads will be placed in a hazardous waste accumulation container in Fume Hood 2. At the end of the day the container contents will be bagged and placed into the hazardous waste drum located in the Pallet/Drum Handling Area. The worker shall manage used (mercury contaminated) gauze as hazardous waste (refer to Procedure 2015-MMTS-10, "Waste Management").

***NOTE**: If an adjacent empty MT container is not available (i.e., both containers have been filled), the upper portion of the fitting will be placed into its storage port (see Section 8.5, Attachment 8.3) where it remains until needed for additional mercury transfers. The storage port has a removable cap that remains in place when the transfer fitting is not being stored.*

8.3.3 MT Container Weighing and Removal

The Flask Handling Area worker performs the following actions:

- Removes the threaded portion of the QD transfer fitting (QD bottom) from the MT container that has been filled and places the QD bottom in its storage in Fume Hood 2 until it is needed for filling the next MT container.
- If any mercury is observed on the collar or on the threaded portion, refers to Procedure 2015-MMTS-12, "Emergency Response and Spill Clean Up" for techniques to clean the collar. Informs the Facility Manager of the need to clean the collar or the threaded portion.
- Inspects the drip pan on the MT container and the gauze for evidence of mercury droplets. If none, places the pan on the adjacent container; if droplets are observed, informs the Facility Manager of the need to clean the pan.
- Installs the 3-in. NPT plug into the MT container half-coupling according to NPT plug specifications.

NOTE: The plug threads were previously wrapped with 3 wraps of yellow Teflon® tape.

NOTE*: Screw the NPT plug into the MT container, hand tight, while the container is still on the scale. After the fork lift has raised the container several inches above the scale, use a torque wrench set to 60 ft.-lbs. to achieve final plug tightness. Do not apply the torque wrench while the container is on the scale.*

- Using a wireless handheld data input unit, completes the final entries on the FILLING INFORMATION screen (see description in Section 13.5 on pages 13-7, 13-11 and 13-12), engraves the stainless steel tag using the tag engraving machine (see Section 8.5, Attachment 8.1) with the tare, net and gross weights and date of final fill (information needed is on the FILLING INFORMATION screen), and affixes the stamped tag to the container.
- Applies the "Corrosive" label to the MT container along with appropriate U.S. Department of Transportation (DOT) markings, "UN2809 Mercury 8 PG III," before the container is removed from the MMTS.

The Facility Manager performs the following actions:

- Verifies that the serial number, tare, net and gross weights have been entered into the PCDAS. Verifies that the stainless steel tag has been properly engraved, including the serial number, date filled and tare, net and gross weights, and installed on the MT container. Verifies that the container has proper labels adhered.
- Updates the inventory tracking spreadsheets showing all pertinent information for the filled MT container: serial number and tare, net and gross weights. Update should include the original warehouse, pallet and drum numbers associated with the mercury in the MT container.

- Notifies the forklift operator to move out the filled container and move in an empty MT container.

The Flask Handling Area worker performs the following actions:

- After the Facility Manager's verification is complete, opens the roll-up door sufficiently to remove a MT container.
- After the forklift operator has raised the container several inches above the scale, uses a torque wrench set to 60 ft-lbs to achieve final plug tightness.

NOTE: Do not apply the torque wrench while the container is on the scale.

The Fork Lift Operator performs the following actions:

- In cooperation with the Flask Handling Area worker, uses the fork lift to raise the container several inches above the scale to allow the plug to be tightened with the torque wrench.
- Moves filled container from MMTS to a designated location in Building 110-66 (refer to Procedure 2015-MMTS-5, "Metric Ton Container Transport and Storage.")
- Using a wireless handheld data input unit, records the required information on the MT TRANSFER screen (see Section 3.3.1 for details).
- Retrieves an empty MT container from Building 110-66 and places it on the empty scale with assistance from the Flask Handling Area worker (refer to Procedure 2015-MMTS-3, "Metric Ton Container Transport and Storage.").

8.4 RECORDS

- Metal identification tag placed on each filled MT container
- Filled MT container data in the inventory database: serial number and weights (gross, net and tare)
- Up-to-date inventory tracking spreadsheets showing all mercury moves from the beginning to the end of the workday, in particular, the serial number and tare, net and gross weights for MT containers filled. Daily tracking spreadsheet information should include the original warehouse, pallet and drum numbers associated with the mercury in each MT container.

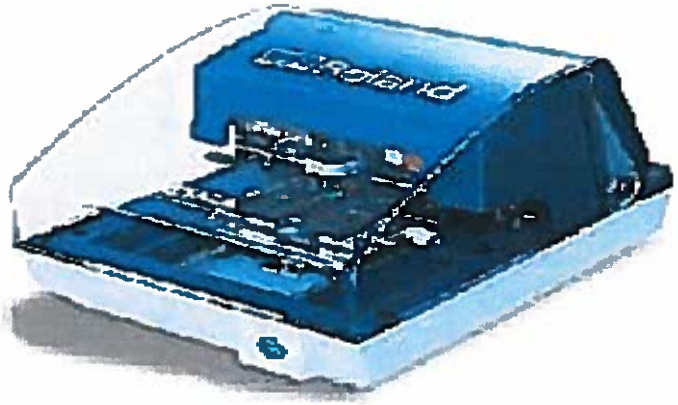
8.5 ATTACHMENTS

Tag engraving machine (Attachment 8.1)

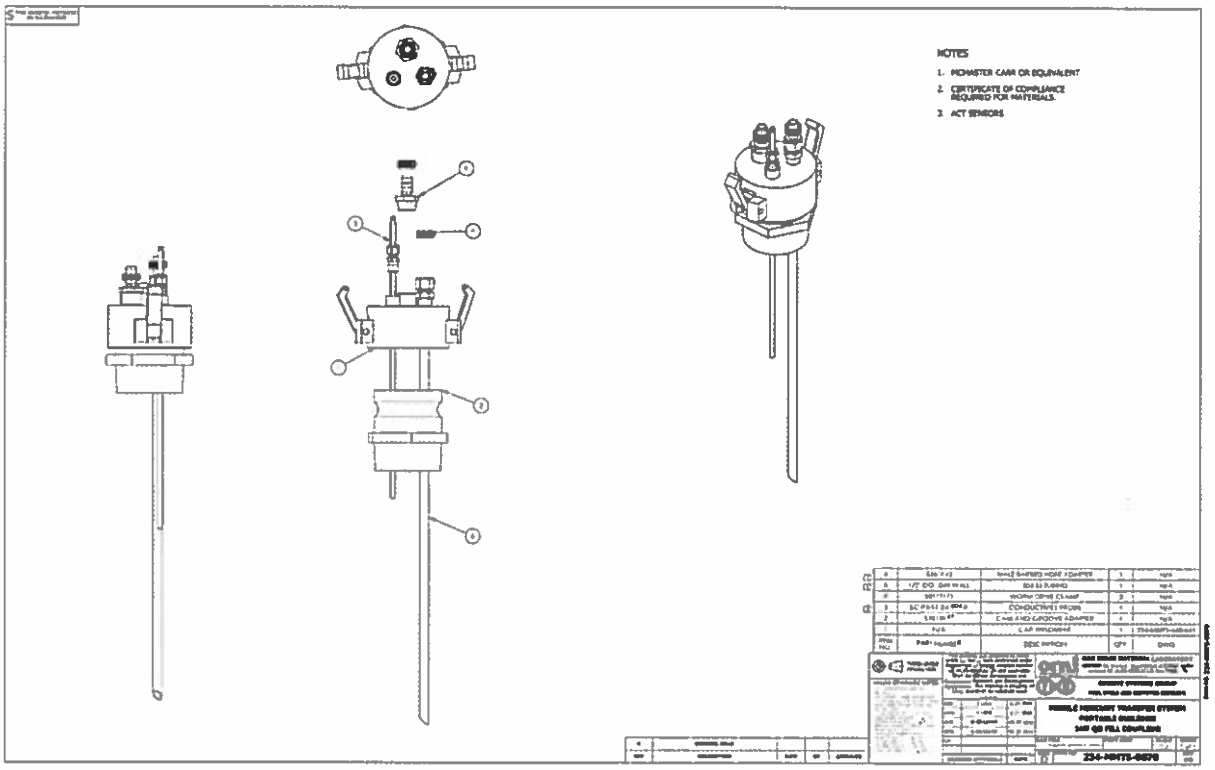
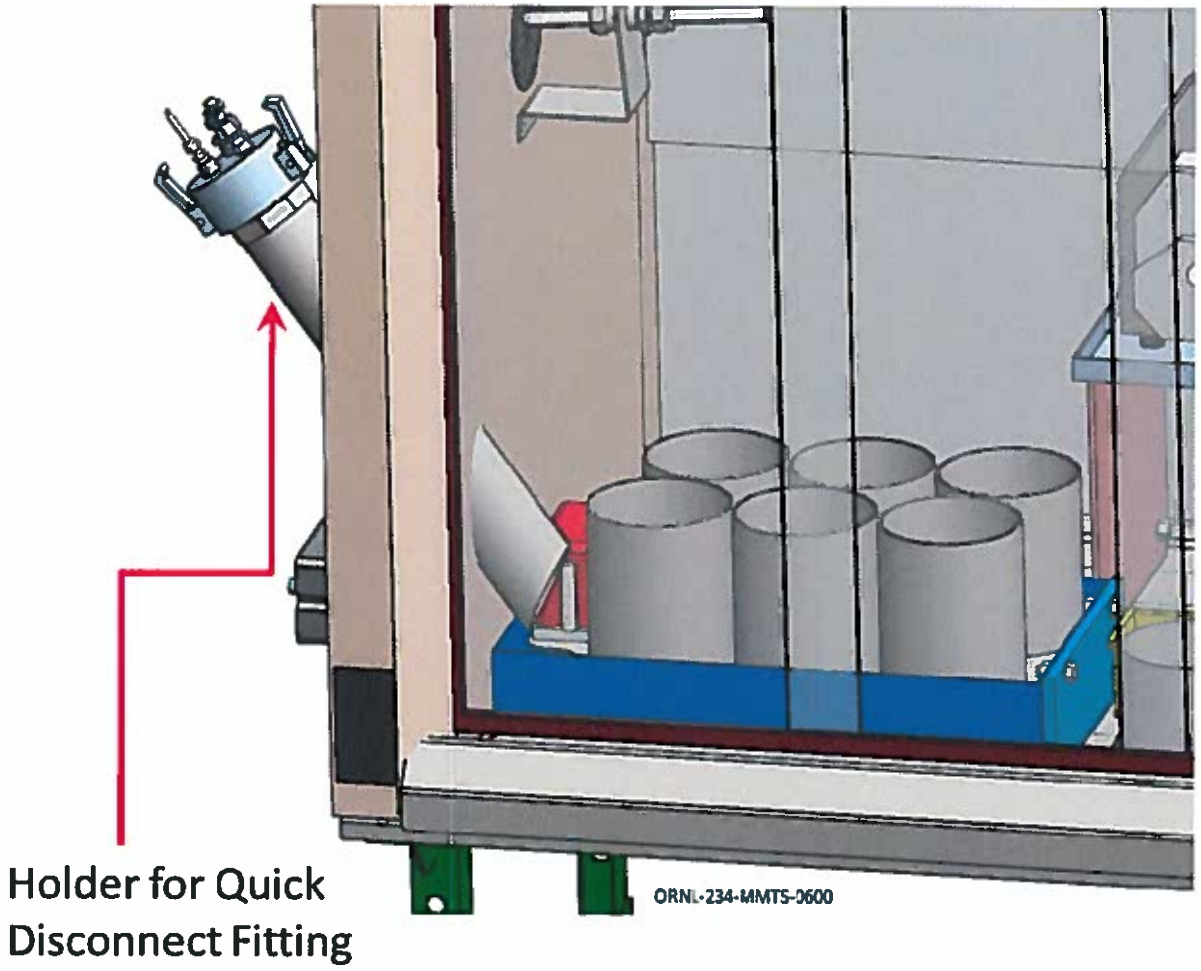
Quick disconnect fitting (Attachment 8.2)

Holder for quick disconnect fitting (Attachment 8.3)

ATTACHMENT 8.1 Tag Engraving Machine



ATTACHMENT 8.2 Quick Disconnect Fitting



ATTACHMENT 8.3 Holder for Quick Disconnect Fitting