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Inspection, Maintenance and Lubrication of STAK System and Components
1.0 PURPOSE AND SCOPE

1.1 Purpose

The purpose of this procedure is to provide instructions for performing inspections, maintenance, and lubrication on 218A Stacker Cranes (218A Crane East/218A Crane West) in order to fulfill requirements for periodic maintenance.

1.2 Scope

This procedure provides instructions for performing inspections, maintenance, and lubrication on 218A Stacker Cranes (218A Crane East/218A Crane West) in order to fulfill requirements for periodic maintenance.

2.0 INFORMATION

2.1 Terms and Definitions

NONE

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Compliance with the DOE-0336, Hanford Site Lockout/Tagout Procedure is required during the performance of this procedure.

3.1.2 Job specific protective equipment requirements should be addressed during the pre-job brief and be in accordance with TFC-ESHQ-S_IS-C-02.

3.2 Radiation and Contamination Control

Work in radiological areas will be performed using a Radiological Work Permit following review by Radiological Control per the ALARA Work Planning procedure TFC-ESHQ-RP_RWP-C-03.
4.0 PREREQUISITES

4.1 Special Tools, Equipment and Supplies

The following supplies may be needed to perform this procedure:
- 5 Gallon Catch Bucket for Hoist Transmission Oil Change
- Wrenches
- 12 foot Tape Measure, incremented 1/8 inch minimum
- Nitrile gloves
- WD-40 or general-purpose spray lubricant – MSDS# 012664A
- Mobilux EP #2 Grease – MSDS# 011582A
- SAE 90 Gear Oil – MSDS# 068736
- SAE 30 Gear Oil – MSDS#027960D
- Motor Oil - MSDS#027960D
- NLGI #2 multi-purpose lithium base grease – MSDS# 062961
- Coffing Hoist Transmission Oil by Duff-Norton Co.- P/N 14JI, MSDS# 031152
- Scissor Lift (small two man lift).

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- 2-MISC-049, Bolt Torquing Guidelines
- TO-100-052, Perform Waste Generation, Segregation, accumulation and clean-up.

4.3 Field Preparation

4.3.1 ENSURE lockout/tagout and overlocking requirements have been satisfied per DOE-0336, Hanford Site Lockout/Tagout Procedure.
5.0 PROCEDURE

Special Instructions
If any step is not required for procedure completion, record “N/A” in the applicable space(s) on the Data Sheet and document the justification in the Data Sheet’s Comments/Remarks section.

5.1 Inspect Overhead Electrical Conductor and Collector Bracket

NOTE - Sections 5.1 through 5.2 may be worked concurrently, in any logical order and/or repeated per FWS direction with those directions being recorded on the Work Record.

5.1.1 IF torqueing bolts, REFER to 2-MISC-049 Bolt Torquing Guidelines.

5.1.2 ENSURE lockout/tagout and overlocking requirements have been satisfied per DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.1.3 INSPECT overhead electrical conductor and collector bracket for damage AND

IF damage is found, PERFORM the following:

5.1.3.1 RECORD damage in Comments Section of Data Sheet AND NOTIFY FWS for resolution.

5.1.4 IF loose connections are found, TIGHTEN any loose connections per Vendor Manual or 2-MISC-049 Bolt Torquing Guidelines AND

RECORD torque value(s) on Data Sheet.

5.2 Check Condition of Bridge Rails and Structure

NOTE - Sections 5.1 through 5.2 may be worked concurrently, in any order and/or repeated per FWS direction with those directions being recorded on the Work Record.

5.2.1 ENSURE lockout/tagout and overlocking requirements have been satisfied per DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.2.2 INSPECT Bridge Rails and Structure for Damage AND

RECORD inspection results on Comments Section of Data Sheet.

5.2.2.1 IF damage is found NOTIFY FWS for resolution.
5.2 Check Condition of Bridge Rails and Structure (Cont.)

NOTE - Spacing of bridge rail(s) measurements will be recorded on Data Sheet as follows:

- 1st = End reading
- 2nd = Intermediate reading
- 3rd = Intermediate reading
- 4th = End reading.

5.2.3 MEASURE center-to-center spacing of bridge rails at both ends and two intermediate points equally spaced along the rails AND

RECORD values in the As-Found section of Data Sheet.

5.2.4 IF values are within tolerance per Data Sheet, RECORD values in As-Left columns of Data Sheet.

5.2.5 IF the As-Found measurements are not within tolerance per Data Sheet, REALIGN rails to tolerance AND

PERFORM the following:

5.2.5.1 RECORD the As-Left center-to-center bridge rail spacing on Data Sheet.

5.2.5.2 TORQUE rail Bolts/Nuts per vendor manual or per 2-MISC-049 Bolt Torquing Guidelines.

5.2.5.3 RECORD As-Left torque value(s) on Data Sheet.

5.2.6 INSPECT bridge stops and trolley stops for the following:

- Bolt tightness
- General condition
- Defects.

5.2.6.1 IF defects or deterioration is found NOTIFY FWS for resolution AND

RECORD the defects/resolutions on Comments Section of Data Sheet.

5.2.6.2 IF bolts/nuts were loose, torque per vendor manual or per 2-MISC-049 Bolt Torquing Guidelines AND

RECORD torque value(s) on Data Sheet.
5.2 Check Condition of Bridge Rails and Structure (Cont.)

5.2.7 CHECK the guide bars inside the mast assembly channels are free of grease.

5.2.7.1 IF grease is present, REMOVE grease with clean cloth AND DISPOSE of refuse in accordance with TO-100-052.

5.2.8 CHECK bolts/nuts are tight on overall structure AND RECORD results on Comments Section of Data Sheet.

5.2.8.1 IF any bolts/nuts are loose, TORQUE per 2-MISC-049, or vendor manual AND RECORD on Data Sheet.

5.3 Lubrication of STAK System

NOTE - The eight cam followers (4 in the fork mounting assembly and 4 in the trolley) are permanently greased and require no lubrication.

5.3.1 LUBE bridge wheels with a light duty lubricating grease AND RECORD the lubrication on the Data Sheet.

5.3.2 LUBE the four fork mounting bearings located on the rear of the fork mounting plate with medium duty grease AND RECORD the lubrication on Data Sheet.

5.3.3 LUBE rotary bearing on the mast assembly with Mobilux EP #2 as follows:

5.3.3.1 ADD grease until it appears at the seal and is not contaminated, OTHERWISE CONTINUE adding grease until contamination is eliminated.

5.3.3.2 REMOVE any excess grease by wiping with rag AND DISPOSE of refuse in accordance with TO-100-052.

5.3.3.3 RECORD the rotary bearing lube on Data Sheet.

5.3.4 ENSURE guide bars inside mast assembly channels remain grease free.
5.4 Lubrication of Hoist

5.4.1 LUBE load chain with SAE 90 Gear Oil AND RECORD on Data Sheet.

5.4.2 SPRAY limit switch shaft with WD-40 (or equivalent) spray lubricant AND RECORD on Data Sheet.

5.4.3 LUBE load hook bearing with SAE 30 Gear or Motor Oil AND RECORD on Data Sheet.

5.4.4 LUBE suspension lug bearing with SAE 30 Gear or Motor Oil AND RECORD on Data Sheet.

5.4.5 LUBE idler sheave bearing with NLGI #2 Multi-Purpose Lithium Base Grease AND RECORD on Data Sheet.

5.5 Hoist Transmission Oil Change

5.5.1 PLACE bucket under drain hole at bottom of transmission case AND REMOVE drain plug.

5.5.2 CATCH Transmission Oil into bucket AND DISPOSE of it per procedure TO-100-052.

5.5.2.1 RECORD oil drained satisfactorily on Data Sheet.

5.5.3 REPLACE drain plug into transmission case drain hole AND TIGHTEN drain plug snug.

5.5.4 FILL transmission case from side level port to port level with Coffing Transmission Oil (Part No. 14J1) AND RECORD on Data Sheet.
5.6 Restoration

5.6.1 IF any problems were encountered with maintenance, INFORM FWS.

5.6.2 REMOVE lock and tag in compliance with the DOE-0336, Hanford Site
Lockout/Tagout Procedure.

5.6.3 FWS ENSURE the job site house cleaning was performed.

5.6.4 FORWARD Work Order package to the Operations Engineer for OPS
Acceptance.

5.7 Acceptance Criteria

Acceptance Criteria has been met when Steps in this procedure have been satisfactorily
performed and As-Left values meet the specifications and tolerance(s) per the Data Sheet.

5.8 Review

5.8.1 INFORM FWS test is complete.

5.8.2 FWS REVIEW AND ENSURE the following:

- Completed Data Sheets meet the acceptance criteria.
- Comments sections are filled out appropriately.
- Work requests needed as a result of this procedure are identified and
generated.
- Work request number(s) of any work documents generated as a result
of this procedure, are recorded in the Comments/Remarks section of
the Data Sheet.

5.9 Records

This procedure is performed within a work package, as such, the procedure in its entirety
will be maintained as a record per the Work Control process.

The record custodian identified in the Company Level Records Inventory and Disposition
Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-
IRM_DC-C-02.