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1.0 INTRODUCTION

1.1 Purpose

This document is to assure our sites compliance with government regulation and industry standards in the inspection and testing of hoists, slings, and davits.

1.2 Scope

This document outlines our sites program for the proper inspection and testing of hoists, slings, and davits

2.0 REFERENCES

2.1 Government Regulations

- WAC 296-56-60097, Load Testing Longshore, Stevedore and Waterfront Related Operations
- WAC 296-56-60098, Inspection Longshore, Stevedore and Waterfront Related Operations
- WAC 296-24-235, Overhead and Gantry Cranes
- WAC 296-24-240, Crawler Locomotive and Truck Cranes
- WAC 296-24-23519, Inspections
- OSHA 1910.179, Overhead and gantry cranes
- OSHA 1926.1412, Cranes and Derricks
- WAC 296-24-29413, Chains and cables
- WAC 296-24-240, Air Hoists

2.2 Industry Standards

- ANSI B30.2.0-1967, American National Standard Safety Code for Overhead and Gantry Cranes

3.0 DEFINITIONS

The following definitions are applicable to this procedure.

Table 1 Definitions

Term	Description
Davit	Various crane-like devices used singly or in pairs for supporting, raising, and lowering.
Hoist	A device used to raise or lift up, especially by mechanical means.

Table 1 Definitions

Term	Description
Hoists tagged out of service	A hoist which cannot be used prior to being inspection by a competent person.
Marine cargo Handling Hoists	A hoist which is used in Marine environment IE: causeway or wharf.
Stand by Hoist	A hoist which is not typically in use for long periods of time that shall not be used until a competent designated craftsperson completes inspection of the hoist.

4.0 ROLES AND RESPONSIBILITIES

4.1 Maintenance and Projects Personnel

Hoist user will be responsible for the pre-use inspection of hoists, slings and davits. Hoists will have a daily check sheet which must be filled out prior to use. Slings shall be thoroughly inspected prior to use.

4.2 Drivers

Competent drivers are to ensure that all mobile crane PM's inspections are done prior to the PM due dates. Competent drivers are also responsible for Rigging Room inventory.

5.0 HOISTS

The following procedures shall be followed when inspecting and/or repairing all hoists whether air, electrically, or manually driven and prior to use of all slings (nylon, synthetic, or wire rope).

5.1 Marine Cargo Handling Hoists

Hoist for marine cargo handling shall be inspected as per the inspection schedule (see attachments 1, 2, & 3) by a qualified craftsperson and annually by a state certified inspector. The state certificate shall be maintained in the wharf control house. Inspection orders shall be generated by SAP, signed and dated upon completion of inspection by a competent craftsperson. Work order tickets shall be written for maintenance work on a piece of equipment. SAP system shall become the permanent records for inspections and work request history.

Inspection requirements for "Marine Cargo Handling Hoists" are described in safety standard WAC 296-56-60097 and WAC 296-56-60098.

5.2 Monthly & Quarterly Inspected Hoisting Equipment

PM orders for inspection shall be generated by SAP. The Machinist Supervisor will schedule a competent designated craftsperson to verify the condition of the hooks, cables, chains, trolleys, oil, limit switches, operating controls, hydraulic systems, filters, oilers and general condition of the hoist. On completion of inspection, the craftsperson shall date and sign SAP time ticket, for PM compliance. The Machinist Supervisor shall write a work order for any maintenance work required for a piece of equipment. The SAP system shall become the permanent records for monthly & Quarterly inspections and work order history.

Inspection Requirements for "Overhead and Gantry Cranes" are described in WAC 296-24-235 and WAC 296-24-240 for "Crawler Locomotive and Truck Cranes."

See "Attachment 1" for Monthly Inspected Hoists and "Attachment 2" for Quarterly Inspected Hoists.

5.3 Daily Inspection

All hoists, derricks, davits, mobile cranes and rigging shall be visually inspected on each day prior to its use by a designated person for any obvious defects. An appropriate card for each service shall be signed and dated by a designated person. Mobile crane operators shall fill out, sign and date the daily log book.

Any defects which constitute an unsafe condition shall be brought to the attention of the responsible Tesoro Zone Maintenance Coordinator or Shop Maintenance Supervisor. Repairs of unsafe conditions shall be made prior to the use of the equipment.

Daily inspection cards are available at the Tesoro tool room. There are two different cards.

1. SAP #3625250 HOISTS - bridge cranes, jibs, bundle pulling
2. SAP #3625249 DAVITS - using winches

5.4 Repairs

Any repairs required from the monthly or quarterly inspection will be initiated and performed under the Machinist Supervisor's direction.

Pending repairs after a hoist has been found unsafe or inoperable; the Machinist Supervisor shall ensure that the equipment is appropriately tagged with a "UNSAFE EQUIPMENT" tag which shall not be removed until work is completed. Such tags will be removed by the person or persons performing the repair as per R-11-014.

5.5 Standby Hoist

SAP tickets for inspection shall come at designated intervals. The shop Machinist Supervisor shall schedule a competent designated craftsperson to do the inspection.

Inspection requirements for "Standby Hoists" are described in WAC 296-24-23519 Section 4, Sub "C".

On completion of inspection, the craftsperson shall date and sign SAP ticket. The Machinist Supervisor shall write a work request for any maintenance work required. SAP shall become the permanent record for inspections and work request history.

See "Attachment 3" for Standby Hoists.

5.6 Hoist Tagged "Out Of Service, Inspection Required Before Use"

Prior to use, the Zone Maintenance Supervisor shall activate the SAP ticket to inspect these pieces of equipment. The shop Machinist Supervisor will schedule a competent designated craftsperson to do the inspection.

Inspection requirements are described "Out of Service" hoist in WAC 296-24-23519, Section 4, and Sub "B".

Upon completion of inspection, the craftsperson shall date and sign the SAP ticket. The Machinist Supervisor shall write a work request for any maintenance work required. SAP

shall become the permanent record for inspections and work request history. Completed hoist inspections for "Out of Service" hoists shall be considered valid for 6 months.

See "Attachment 4" for "Out of Service" Hoists.

5.7 Chain Falls and Come-a-Longs

Chain falls and come-a-longs shall be inspected by the user prior to each use, ensuring they are in good condition and appropriately rated for the intended use. When not actively in use supporting a load, all chain falls and come-a-longs shall be returned to the tool room or other place of issue, unless they are to be used the next working day. Before being returned the equipment shall be cleaned then inspected by the person returning it. Also, said person shall red tag defective equipment and report the specifics of any defects to the issuer or Tool Room attendant. Upon return the issuer or tool room attendant shall inspect the equipment before reissue and repair defective equipment or remove it from service as needed.

An annual inspection and load test will be performed on all Tesoro chain falls and come-a-longs, by the tool room. All testing and repairs will be documented and recorded in the tool room.

6.0 RIGGING INSPECTION

All rigging equipment shall be inspected by the user prior to each use, ensuring it is in good condition and appropriately rated for the intended use. All slings shall have a manufactures tag affixed indicating load capacity. When not actively in use supporting a load, all rigging equipment except fixed and permanently mounted rigging equipment shall be returned to the tool room or other place of issue, unless it is to be used the next working day. Before being returned the equipment shall be cleaned then inspected by the person returning it. Said person shall red tag defective equipment and report the specifics of any defects to the issuer or tool room attendant. The tool room attendant will remove it from service as needed.

6.1 Synthetic Sling Inspection

Nylon web slings shall not be used where acidic or phenolic fumes, vapors, sprays, mists or liquids are present.

Polyester and polypropylene web slings shall not be used where caustic fumes, vapors, sprays, mists or liquids are present.

Synthetic web slings shall be removed from service if any of the following conditions are present:

- Acid or caustic burns.
- Melting or charring of any of the sling surface.
- Broken or worn stitches.
- Snags, punctures, tears or cuts.
- Distortion of fittings.

6.2 Wire Rope Sling Inspection

Wire rope slings shall be removed from service if any of the following conditions are present:

- Ten randomly distributed broken wires in one lay or five broken wires in one strand in one lay.
- Wear or scraping of one-third the original diameter of outside individual wires.
- Kinking, crushing, bird caging or any other damage to wire rope structure.
- Evidence of heat damage.
- End attachments are cracked, deformed or worn.
- Corrosion of the rope or end attachments.

6.3 Shackle Inspection

Shackles shall be removed from service if any of the following conditions are present:

- Permanently affixed markings indicating the recommended maximum safe working load are missing or illegible.
- The shackle or pin has been bent, sprung or otherwise deformed.
- The shackle or pin has cracks, sharp nicks, grooving or corrosion.
- The shackle pin cannot be fully threaded into the shackle (or nut if present).
- If either the pin nut or nut cotter pin are damaged, corroded, missing, or if the cotter pin has been replaced with some other device. (#5 applies only to shackle pins designed to be retained with a nut).
- Any part of the shackle has been modified.

6.4 Hook Inspection

Hooks shall be removed from service if any of the following conditions are present:

- The hook has been opened more than 15% of the normal throat opening measured at the narrowest point, or twisted more than 10° from the plane of the hook centerline.
- The safety latch is missing, damaged or corroded.
- The hook has cracks, sharp nicks, or grooving.
- The hook or safety latch has been modified.

7.0 DAVIT INSPECTION PROCEDURE

7.1 General

The phrase "allowable load" is the maximum load the davit and rigging is intended to lift with the normal rigging of a line from the load, up over the pulley, and down to the pulling device. The davit itself is designed for two times the "allowable load" (e.g. load of 1000 lbs. on one side of line; pulling down with 1000 lbs. on other side of line to lift load; so the davit must support 2000 lbs. total).

7.2 Inspection

Davits in the process units are no longer routinely inspected. All davits in the process units shall be inspected visually by the Zone Unit Inspector or engineering before being put into service. Any discrepancies shall be annotated and repair recommendations forwarded to the Zone Maintenance Supervisor for action. No davit in a process unit shall be used without prior approval from the Tesoro supervisor in charge of the work.

7.3 Testing

At new construction, each davit shall be load tested to 1.5 times the allowable load. This test may be accomplished prior to the next use to eliminate the necessity of rigging the column or vessel for testing only. Prior to each use, if not performed within the past month, davits shall be load tested to 1.0 times allowable load. Load tests shall be recorded by the Zone Unit Inspector.

7.4 Capacity Identification

The allowable load of each davit shall be stenciled on the davit in two-inch numbers (e.g. "allow 1200 lb."). This information will also be kept on file by Pressure Equipment Inspection.

7.5 Responsibility

It shall be the responsibility of the person utilizing the davit to visually inspect the equipment each day prior to its use, fill out the appropriate check off card (available at the Tesoro Tool room), date and sign it. Any defect which constitutes an unsafe condition shall be brought to the attention of the Tesoro supervisor in charge of the work. Repairs shall be made prior to the use of the equipment.

8.0 RECORDS

8.1 Access in SAP

To access the records for a given hoist in SAP, use the following steps:

- At the main screen go to Logistics > Plant Maintenance > Maintenance Processing > Notification > List Editing > IW30 - Display (Multilevel)
- On this screen put a check in the box beside the completed box.
- Put the cursor in the equipment field and use the pull-down box to type in the technical ID number.
- This will pull forward the SAP equipment number and fill it in.
- At this time, you can use a date range in the Notification data fields or leave blank for all history for the equipment number you have selected.
- Now click on the green execute button on the left side of the screen.
- You will now get a list of notification history for the equipment number that you selected. It will automatically sort by the notification date. This is the date that the notification was written.

9.0 TRAINING

Proper training of competent designated craft person shall be verified by the craft supervisor prior to inspection of hoists, slings and davits.

10.0 REVIEW AND REVISION HISTORY

Revision #	Preparer	Date	Description
0	Mark Willand	10/22/2021	Reformatted and Numbered per Document Control Policy, R-63-001.

11.0 ATTACHMENT 1 – MONTHLY INSPECTED HOISTS

Hoist No.	Location
H-1057	Shop I Overhead
H-1068	Shop II - Overhead
H-1069	Bundle Pad Overhead
H-803	Wharf North Derrick
H-804	Wharf South Derrick
H-805	Wharf North Derrick
H-806	Wharf South Derrick
H-809	Wharf South Derrick Boom
H-810	Wharf North Derrick Boom
H-822	Stationary Crane North Cert
H-823	Stationary Crane South Cert

Mobile Equipment

H-1082	Boom Truck
H-1105	Grove 10 -Ton
H-1106	Broderson 2 -Ton
H-844	Grove - 130 Ton

12.0 ATTACHMENT 2 – QUARTERLY INSPECTED HOISTS

Hoist No.	Location
H-508-2	Sandblast Building, South
H-843	Sandblast Building, North
H-813-2	Causeway – Oil Spill Boat
H-814-2	Causeway – Oil Spill Boat
H-816	Causeway Boat
H-817	Bumper Dolphin - Aluminum Boat
H-818	Causeway Bent 217
H-819	Causeway Bent 211
H-820	Causeway Bent 213
H-821	Causeway Bent 215
H-824	Causeway Bent 219
H-825	Causeway Bent 221
H-826	Causeway Bent 223
H-827	Causeway Bent 225
H-862	Shop II, outside, West End

13.0 ATTACHMENT 3 – STANDBY HOISTS – CHECKED 6 MONTHS

Zone E

Hoist No.	Location
H-1050	Shop I - MV Work Bench
H-1052	Shop I - Northeast Corner
H-1053	Shop II - North
H-1054-1	Shop I - North Center
H-1055-1	Shop I - Northwest
H-1056-1	Shop I - Northwest Center
H-1062-1	Shop II - Southwest Center
H-1063-1	Shop II - Southeast
H-1064-1	Shop II – Northwest
H-1051-1	Shop II - Northeast
H-1066-1	Shop I - South Center
H-1067-1	Shop I - South Center
H-862	Shop II - Steam Bench
H-1103-1	Shop II - Southwest
H-509	Shop I - PSV Test Stand

Zone A

Hoist No.	Location
H-102-1	Crude Preheat Exchanger
H-103-1	Crude Preheat Exchanger
H-106	Debutanizer Overhead Condenser
H-108	Debutanizer Overhead Condenser
H-202-2	Vacuum Flasher Overhead
H-203-2	Vacuum Flasher Overhead
H-205-2	Crude Overhead
H-506-2	Crude Overhead
H-1089	DHT Compressor Shed

Zone B

Hoist No.	Location
H-201-2	Fractionator
H-403-2	Fractionator
H-304-1	Steam Generator
H-309-2	Gas Recovery
H-310-2	Gas Recovery

Zone C

Hoist No.	Location
H-502-2	Straw Filter
H-1098	Boiler H - Comp Shed

14.0 ATTACHMENT 4 – TAGGED "OUT OF SERVICE" HOISTS

Hoist No.	Location
H-603-2	DHT Overhead Condenser (10 Ton)
H-604-2	DHT Overhead Condenser (10 Ton)
H-1092	Slide Valve –Third Deck Access to Regen
H-1094	Slide Valve-Regen
H-303	Bed Air Blower
H-909	Alky Reactor # 5
H-910	Alky Reactor # 3
H-911	Alky Reactor # 4
H-912	Alky Reactor # 6