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1.0 INTRODUCTION

1.1 Purpose

This procedure establishes the Marathon Anacortes Refinery-wide requirements for safely operating cranes, using cranes to lift personnel, performing rigging work, and utilizing approved signaling methods between participants in crane operations.

1.2 Scope

This document does not apply to the Wharf stationary cranes or Zone C Operations personnel operating Wharf cranes in performing their routine duties.

This procedure does apply to the operation of all other cranes and all other Marathon Anacortes Refinery employees and contractors engaged in lifting, rigging, and crane signaling operations on site. Except, this document does not apply to the maintenance or scheduled inspections of any cranes other than mobile cranes. Refer to SR-35 and WAC 296-155 Part L for such requirements.]

2.0 REFERENCES

2.1 Government Regulations

- OSHA 29 CFR 1926 subpart cc
- OSHA 29 CFR 1910.179 Overhead and Gantry Cranes
- OSHA 29 CFR 1926 Subpart L Scaffolds:
  - Appendix A Scaffold Specifications
  - 29 CFR 1926.452 Additional requirements applicable to specific types of scaffolds
- OSHA 29 CFR 1926.554 Overhead Hoists
- RCW 49.17.430 Qualified Construction Crane Operators, Rules: Apprentice Operators or Trainees, Reciprocity
- WAC 296-24-235 Overhead and Gantry Cranes
- WAC 296-24-23529 Operators (4) and (5)
- WAC 296-155 Part L Cranes, Rigging, and Personnel Lifting

  Note: For additional inspection criteria and proof load testing requirements for specific types of cranes, see:

  - WAC 296-155-53202 Mobile Cranes
  - WAC 296-155-53210 Overhead/bridge and gantry bridge cranes
  - WAC 296-155-53212 Derricks
  - WAC 296-155-53408 Power Line Safety (2) Operations of Crane/Derrick

2.2 Industry Standards

- ASME B30.2-2005, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist).
- ASME B30.17-2006, Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)

3.0 DEFINITIONS

The following definitions are applicable to this procedure.

Table 1 Definitions

Term	Description
Accredited Crane Certifier	A Crane Inspector who has been accredited by the Washington State Department of Labor and Industry.
A/D Director (Assembly/ Disassembly Director)	Person supervising the safe assembly, disassembly or reconfiguration of the crane. This person must be competent and/or qualified for this role, per the WAC definitions. The title accompanies the role, irrespective of the person's formal job title or whether the person is Management or hourly personnel.
Alternative Measures	Specific measures, defined in the WAC, that are taken to mitigate failure of a required crane operational or safety aid (i.e. device) and allow continued operation of the crane until proper repairs can be made.
Assembly/Disassembly	The assembly and/or disassembly, or reconfiguration of a crane or any of its components or attachments.
Attachment	Any device that expands the range or tasks that can be done by the crane/derrick. Examples include, but are not limited to: an auger, drill, magnet, pile-driver, and boom-attached personnel platform.
Boatswain's Chair	A single-point adjustable suspension scaffold consisting of a seat or sling, which may be incorporated into a full body harness, designed to support one person in a sitting position.
Bridge Crane	See "Overhead/Bridge Crane" definition and Attachment 5.
Competent Person	A person capable of identifying existing and predictable hazards in the surroundings; or working conditions which are unsanitary, hazardous, or dangerous to personnel; and who is authorized to take prompt corrective measures to eliminate them.
Crane	Power-operated equipment that can hoist, lower, and horizontally move a suspended load. "Crane" includes, but is not limited to: articulating boom cranes, such as crawler cranes; mobile cranes, such as wheel-mounted, rough-terrain, all-terrain, truck mounted and boom truck cranes; multipurpose machines when configured to hoist and lower by means of a winch/hook and horizontally move a suspended load; industrial cranes, such as carry-deck cranes, service/mechanic trucks with a hoisting device; tower cranes; pedestal cranes, overhead and gantry cranes; straddle cranes and variations of such equipment.
Crane Operator	Person directly controlling the crane's functions. See "Operator" and "Qualified Crane Operator" definitions.
Crane Owner	Has custodial control of a crane by virtue of lease or ownership. This is generally a corporate entity.
Crane User	Arranges the crane's presence on a worksite and controls its use there. This is generally a corporate entity.

Table 1 Definitions

Term	Description
Critical Lift	Any lift where 1 or more of the following apply: • Exceeds seventy-five percent of the cranes rated load chart capacity • Requires the use of more than one crane. • Any lift where any portion of the load or crane would enter the prohibited zone of energized power lines except as defined in WAC 296-155-53408(2). • Exceeds 25 tons, except in a lay down area. • Requires multiple load lines. • Is over process equipment or piping that in the judgment of the • Planner or responsible Supervisor (RS) involves a level of risk higher than a Routine or Special Lift. • Utilizes a man basket (i.e. personnel platform) Boatswains Chair, or other means of lifting personnel. • The Riggers or a significant portion of the crew are inexperienced in the type of lift or the rigging to be used.
Dedicated Radio Channel	A line of radio communication assigned by the employer who controls the communication system to only one Signal Person and crane/derrick, or to a coordinated group of Crane/Derrick/Signal Persons.
Dedicated Spotter	A person walking ahead of and along the travel path of the crane, in sight of the Operator, watching for obstructions, clearances issues, or other hazards and communicating them directly to the Operator. At least one is required any time a crane is traveling off the main roadways or in an operating unit. The Spotter is to have no other duties until the crane is in position, resting on its outriggers.
Exempt Crane	The Marathon owned Broderson, Mini-Grove and cranes of similar capacity and having limited rotational capability, only when used for routine maintenance work, and only if the jib is not deployed.
Failure	Means load refusal, breakage, or separation of components.
Fall Zone	The area, including but not limited to the area directly beneath the load, in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.
Floor Operated Crane	A crane controlled by an Operator from the floor, or an independent platform via a pendant, remote control, or nonconductive rope.
Ground Crew	All individuals who are involved in the lift, other than the Crane or Hoisting Equipment Operator and the platform occupants of a personnel lift. These individuals include Riggers, Signal Persons, and the Lift Director/Lift Supervisor.
Hoist (or Hoisting)	All crane functions, such as lowering. Examples: lifting, swinging, booming in and out or up and down, or suspending a load or personnel platform.
Jib Crane	See Attachment 5.
Lift Director	Directly oversees the work being performed by a crane and the associated Rigging Crew, for routine or special lifts.

Table 1 Definitions

Term	Description
Lift Supervisor	Similar to a Lift Director, but replaces the Lift Director role for critical lifts. Directly oversees preparations for and the work being performed by a crane and all lift participants for all critical lift crane operations.
Load	The object, or the weight of the object being lifted or lowered, including the weight of the load-attaching equipment (such as the load block, ropes, slings, shackles, and any other auxiliary attachment).
Load Refusal	The point where the ultimate strength is exceeded.
Man Basket	See "Personnel Platform." The terms are interchangeable.
Maximum Intended Load	The total load of all workers, tools, materials, and other loads reasonably anticipated to be applied to a personnel platform or personnel platform component at any one time.
Mobile Crane	A lifting device incorporating a cable suspended latticed boom or hydraulic telescopic boom designed to be moved between operating locations by transport over the road.
Occasional or Routine Maintenance and Repair Work	Regular, customary and foreseeable work necessary to keep equipment in good repair and/or condition, or to return it to sound condition after damage.
Operational Aids	Crane instruments or devices intended to enhance safe operation of a crane (see Section 7.10).
Operator	The person who is operating the crane equipment. See "Crane Operator."
Overhead/Bridge Crane	A crane with a movable bridge carrying a movable or fixed hoisting mechanism, and traveling on an overhead fixed runway structure. At Marathon Anacortes Refinery, this includes overhead/bridge cranes, wall cranes, jib cranes and similar equipment (see Attachment 5).
Personnel Lifting	Raising, lowering, or transporting personnel using a crane.
Personnel Platform	A platform attached to a crane/derrick using wire rope, chain, or jointed attachment, and that has no installed motion controls for the platform itself. This term is interchangeable with "Man Basket."
Personnel Platform Suspension System	The rope or chain slings and other components, including fastening devices, used to connect the crane to the personnel platform.
Physically Fit	Meeting the requirements described for Crane Operators in WAC 296-24-23529(4) and (5) (see Section 5.2).
Planner	Person designated by Maintenance, Projects or T/A Management to define work scope, pre-arrange resources, and schedule the work. The person determining in advance, when and what crane is needed and arranging to provide it.
Platform Occupant	Persons present within a personnel platform's guardrail barrier while the platform is in a hoisted position.
Platform Rating	The maximum capacity of a personnel lifting platform, established by the platform Manufacturer, in terms of total weight and the number of occupants allowed.
Power Line	Electrical distribution and electrical transmission lines without substantial mechanical protection, such as a conduit, raceway or pipe rack. Example: conductors run from power pole to power pole.

Table 1 Definitions

Term	Description
Procedures	Procedures include, but are not limited to, instructions, diagrams, recommendations, warnings, specifications, protocols, and limitations.
Process Equipment	Equipment residing within plot or battery limits of any Marathon Anacortes Refinery operating unit, including Zone C.
Qualified Crane Operator	A Crane Operator who meets the requirements established under RCW 49.17.430 and WAC 296-155 Part L. Also see "Operator" and "Crane Operator."
Qualified Person	A person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, and/or training and experience, has successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.
Qualified Rigger	A Rigger who meets the requirements in WAC 296-155-53306.
Qualified Signal Person	A Signal Person who meets the requirements in WAC 296-155-53302.
Responsible Supervisor (RS)	The Marathon or Contractor Coordinator or Supervisor responsible for executing the overall work associated with the lift.
Routine Lift	Lifts that do not meet the criteria as critical or special lifts, and present a comparatively low level of risk (see Section 8.1).
Runway	A firm level surface designed, prepared, and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. Note: Generally, cranes are not allowed to travel while hoisting an occupied personnel platform.
Shall/Must	Order, requirement, or obligation of the standard. Example: A strict regulatory requirement.
Should/May	Probability or expectation of the standard not enforced as an obligation under "shall." Example: A best practice.
Site Supervisor	Exercises supervisory control over the worksite on which a crane is being used and over the work that is being performed on that site.
Special Lift	Lifts that do not meet the criteria of a "Critical Lift," but present a higher level of risk than a typical "Routine Lift" (see Section 8.2).
Taglines	A rope, usually fiber, attached to a lifted load for purposes of controlling load spinning and perpendicular motions.
Marathon Crane	A crane owned or leased by Marathon Anacortes Refinery. Does not include cranes owned by others and operated solely by the Crane Owner.
Tower Crane	A lifting structure utilizing a vertical mast or tower to support a working boom (jib) in an elevated position. Loads are suspended from the working boom. The working boom may be of the fixed or luffing types and can swing loads, either by rotating on the top of the tower, or by rotation of the entire tower.
Wall Crane	See Attachment 5
Working Load	The external load applied to the hoisting equipment, including the personnel lifting platform, its contents, and the load attaching equipment (such as lowered load block, shackles, and slings).

4.0 ROLES AND RESPONSIBILITIES

The following titles, roles and duties are described for purposes of assignment. All roles listed must be assigned in the worksite organization for each lift. A single individual may perform one or more of these assignments concurrently.

4.1 Crane Owner

The Crane Owner has custodial control of a crane by virtue of lease or ownership. Marathon Anacortes Refinery owns all facility cranes, except for the 100 ton and 50 ton which is leased. No specific certification or training is required for this role.

The Crane Owner's duties include the following:

- Providing a crane that meets the requirements of WAC 296-155 Part L, as well as specific job requirements that may be defined by the User.
- Providing a crane and all necessary components, as specified by the Manufacturer, that meets the User's requested configuration and capacity.
- Providing all applicable load/capacity chart(s) and diagrams.
- Providing additional technical information pertaining to the crane, necessary for crane operation, when requested by the Crane User. (Including a pre-move checklist or placard that can be referenced by the crane operator in the cab.)
- Providing field assembly, disassembly, operation, maintenance information, and warning decals/placards installed as prescribed by the Crane Manufacturer.
- Ensuring that inspection, testing, and maintenance is performed in accordance with WAC 296-155, and informing the Crane User of these requirements.
- Using personnel that meet the requirements for a competent and/or qualified person as defined in WAC 296-155-52902, for the purposes of inspection, maintenance, repair, transport, assembly, and disassembly.

4.2 Crane User

The Crane User arranges a crane's presence on a worksite and controls its use there. No specific certification or training is required for this role. Marathon Anacortes Refinery is the User of all owned or leased cranes. Marathon Anacortes Refinery is the User of any cranes that are directly contracted to work on site, and controls the use of these cranes. The person assuming the Site Supervisor role for a specific crane operation also represents Marathon Anacortes Refinery as a Crane User during that operation. Contractors who subcontract cranes to work on site and control their use, are the Crane Users for those cranes.

The Crane User's duties include the following:

- Complying with all requirements of WAC 296-155 Part L, equipment Manufacturer's requirements, and Marathon Safety Regulations (SR) and Miscellaneous Operating Procedures (MOP).
- Ensuring persons engaged in crane operations meet the requirements as a qualified or competent person for each activity, as required and defined within WAC 296-155-52902.
- Ensuring crane operators onsite are familiar with any crane an operator is asked to operate. The employer (Contractor or MPC) will develop criteria that all of its operators will be familiar with before they are cleared to do work and refreshed as needed.

- Ensuring that the crane is in proper operating condition prior to initial use at the worksite by:
  - Verifying that the Crane Owner has provided documentation that the crane meets the requirements of WAC 296-155 part L.
  - Verifying that inspections have been performed as prescribed in WAC 296-155-53405.
  - Verifying that procedures are in place to ensure the crane is properly configured to have the necessary lifting capacity to perform each proposed lifting operation.
- Using Operators that meet the requirements of WAC 296-155-53300, and are qualified to operate the cranes they are assigned to operate.
- Ensuring the assigned Operator(s) have been notified of crane adjustments or repairs that have not been completed, prior to commencing crane operations.
- Using personnel that meet the requirements for a competent and/or qualified person as defined in WAC 296-155-52902, for the purposes of crane inspections, maintenance, repair, transport, assembly, and disassembly. And that those personnel are aware of their assigned duties and the associated hazards.
- Ensuring that all Crane Manufacturer or Crane Owner inspection, testing, and maintenance is properly performed, as required by the WAC.

4.3 Site Supervisors

Site Supervisors exercise supervisory control over the worksite on which a crane is being used, and over the work that is being performed there. No specific certification or training is required for this role. The Marathon Mechanical Superintendent, or their designee, fulfills this role for routine Maintenance work. This role is fulfilled by the Projects Superintendent or their designee for projects work. For turnaround crane work, this role is fulfilled by the Turnaround Superintendent or their designee, or delegated by the Turnaround Superintendent to a designated Turnaround Crane Coordinator. For wholly contracted crane services, the contractor may be required to provide their own designated Site Supervisor. Marathon Site Supervisors also represent Marathon as Crane User when Marathon is by definition the Crane User (see Section 4.2).

The Site Supervisor's duties include:

- Ensuring cranes on site meet WAC 296-155 part L requirements applicable to a refinery environment prior to initial and during ongoing site usage, and that crane maintenance has been performed by a qualified person. (WAC 296-155-53304)
- Determining if additional regulations are applicable to crane operations.
- Ensuring that Lift Directors, Riggers and Signal Persons and Lift Supervisors assigned are qualified or competent as described in sections 4.4, 4.10, 4.11, 10.1 and 10.2 of this document.
- Ensuring Lift Directors know who is designated as their Site Supervisor.
- Ensuring that Crane Operators meet the requirements of WAC 296-155-53300.
- Ensuring that work involving the assembly and disassembly of a crane is supervised by a Qualified Assembly/Disassembly Director as required in WAC 296-155-53402.
- Ensuring that crane operations are coordinated with other job site activities that will be affected by or will affect lift operations.
- Ensuring that job sites for setting cranes are adequately assessed and prepared. Assessment and preparation includes, but is not limited to:

- Access roads for the crane are adequate for safe travel.
- Sufficient room to assemble and disassemble the crane is available.
- Crane operating areas are suitable with respect to levelness, surface conditions, support capability, proximity to power lines, excavations, slopes, underground utilities, subsurface construction, and obstructions to crane operation.
- Traffic control to restrict unauthorized access to the crane's working area.

- Ensuring that conditions which may adversely affect crane operations are addressed. Such conditions include, but are not limited to:
  - Poor soil conditions
  - Artificial lighting
  - Inclement weather (Ex: fog, heavy rain, extreme cold, high or gusting winds).
- Allowing crane operation near electric power lines only when the requirements of WAC 296-155-53408 have been met.
- Permitting critical lifting operations only when equipment and procedures required by the WAC, the Crane Manufacturer, or a qualified person, and this document are employed. See Sections 10.0 and 11.0 of this procedure for information on critical lifts.

4.4 Lift Director

The person directly overseeing the crane operation and the associated Rigging Crew, for routine and special lifts (i.e. not critical lifts). No specific certification or training is required for this role, but the Lift Director shall be a competent person and ideally, should be a certified Rigger and Signal Person. Refer to Section 4.5 and Sections 10.0 and 11.0 for information on critical lifts. For routine or special lifts that are not within 50 feet of a power line, the Lift Director role is normally performed by the Marathon or contractor lead person, foreperson, or responsible Supervisor (RS) executing the work. The Lift Director may also serve as the Rigger and/or Signal Person if qualified as such, and if performing more than one role does not inhibit their ability to fully and safely perform each role.

The Lift Director's duties include but are not limited to the following:

- Being present at the job site and overseeing the lifting operations.
- Stopping crane operations if alerted to an unsafe condition affecting those operations.
- Ensuring that personnel involved in the crane operation understand their duties, and the associated hazards.
- Knowing who their designated RS is (if applicable) and how to contact them.
- Knowing who their designated Site Supervisor is and how to contact them.
- Allowing crane operation near electric power lines only when the requirements of WAC 296-155-53408 and any additional requirements given by the Site Supervisor have been met.
- Addressing safety concerns raised by the Crane Operator or other personnel and deciding if it is necessary to engage the RS or Site Supervisor to consider overruling those concerns.
- In all cases, the Manufacturer's criteria for safe operation, the requirements of WAC 296-155 part L, and any other applicable safety and health standards must be adhered to.

- Ensuring that Riggers and Signal Persons are appropriately qualified to perform the particular lift they are assigned to, and providing that qualification information to the Crane Operator.
- Ensuring the load is properly rigged and balanced before it is lifted more than a few inches.
- Informing the Crane Operator of the weight of loads, as well as the lifting, moving, and placing locations for these loads, and obtaining the Crane Operator's verification that this weight does not exceed the crane's rated capacity.
- Ensuring that the preparation of the area needed to support crane operations has been completed before crane operations commence.
- Ensuring necessary traffic controls are in place to restrict unauthorized access to the crane's work area.

4.5 Lift Supervisor

See Sections 10.1, 10.2 and 11.1.

4.6 Operator – Mobile Cranes Rated Above 2,000 lb. Capacity or Tower Cranes

The Operator directly controls the crane's functions. The Operator must possess current operator certifications meeting the requirements of WAC 296-155-53300 Operator Qualifications and Certification.

Exception: See Section 4.7 for exempt cranes Operator qualifications.

The Crane Operator's duties include, but are not limited to the following:

- Not operating the crane when physically or mentally unfit, or engaging in activities that divert their attention while operating the crane (Ex: using a cellular phone).
- Understanding and applying the information contained in the Crane Manufacturers Operating Manual, and this procedure.
- Ensuring the crane certification and major inspections are current prior to using the crane.
- Ensuring that all controls are in the off or neutral position and that all personnel are in the clear before energizing the crane or starting the engine.
- Performing a daily inspection as specified in WAC 296-155-53405 prior to performing any lifts, to include filling out, signing and dating the daily Log Book or Inspection Card.
- Ensuring that the crane engine is shut down prior to refueling.
- Promptly reporting the need for any adjustments or repairs to the Machinery Skill Supervisor, or the contracted Crane Owner or User, as appropriate. Prior to crane operation, identified adjustments or repairs with the potential to interfere with safe operation of the crane must be addressed.
- Understanding crane functions, limitations, and particular operating characteristics. This includes ensuring the crane is not operated in weather conditions that in the operator's judgment are unsafe or outside of the limitations in the crane's manual.
- Testing the crane function controls that will be used, and operating the crane only if those function controls respond properly.

- Knowing and following the procedures specified by the Manufacturer or approved by a qualified person, for assembly, disassembly, setting up, and reeving the crane.
- Knowing how to travel the crane, to include traveling with a load, if allowed by the Crane Manufacturer's Instructions.
- Ensuring the crane does not travel within plot limits of an operating unit or other close quarters unless accompanied by, and in communication with, at least one dedicated Spotter.
- Determining if a Work Permit is required in the area the crane is to be operated, ensuring the permit is in effect prior to operating the crane in that area, and complying with all permit requirements.
- Confirming by conversation with the Lift Director prior to starting any lift, that the Lift Director, Rigger, and Signal Person roles have been assigned and are performed by qualified persons.
- Reviewing the specifics of the lift with the Lift Director prior to starting each lift.
- Ensuring that the load and rigging weight(s) have been provided.
- Knowing what types of site conditions could adversely affect the operation of the crane, and discussing site conditions with the Lift Director prior to the start of the lift.
- Using the crane's load/capacity chart(s) and diagrams and applying all notes and warnings related to the charts to confirm the correct crane configuration to suit the load, site, and lift conditions.
- Calculating or determining the net capacity for all configurations that will be used and verifying, using the load/capacity chart(s), that the crane has sufficient net capacity for the proposed lifts.
- Considering all factors known that might affect the crane capacity and informing the Lift Director of the need to make appropriate adjustments.
- Following applicable Lock-Out/Tag-Out Procedures.
- Refusing to operate a crane when any portion of the load or crane would enter the prohibited zone of energized power lines except as defined in WAC 296-155-53408.
- Knowing the standard and special signals as specified in WAC 296-155-53406, and responding to such signals from the Rigger or designated Signal Person.
- Observing or using a Spotter to observe each outrigger during extension, setting, and retraction.
- Knowing and complying with the requirements of Sections 5 and 6 of this document.
- Operating the crane's functions in a smooth and controlled manner.
- Knowing the following protocol for securing the crane if power fails during operations:
    - Setting all brakes and locking devices.
    - Moving all clutches or other power controls to the off or neutral position.
    - Landing any load suspended below the hook under brake control, if practical.
- Taking all of the following precautions before leaving the crane unattended: (**Note**: The Operator may not leave the cab while performing a personnel lift.)

    1. Landing any load suspended below the hook, unless:

        A. The Operator remains within 25' of the crane and is not engaged in other duties.

B. The load is to be suspended for a period of time exceeding that of a normal lift.

C. The Operator determines that it is safe to do so and implements measures to restrain the boom hoist and telescoping, load, swing, and outrigger functions.

D. The fall zone is barricaded or otherwise secured to ensure no one, including the Riggers and Ground Crew, is allowed to enter.

2. Disengaging the master clutch.
3. Setting travel, swing, boom brakes, and other locking devices.
4. Putting controls in the off or neutral position.
5. Stopping the engine, unless crane operation is/will be frequently interrupted during a shift and the Operator must leave the crane. Under these circumstances, the engine may remain running and items 1 and 4 of this section apply. The Operator must be situated where anyone entering the crane can be seen by the Operator.
6. Considering the recommendations of the Manufacturer for securing the crane, when a local weather storm warning exists.

Exemption: Item 1 does not apply to working gear (such as slings, spreader bars, ladders, and welding machines) where the weight of the gear is negligible relative to the lifting capacity of the equipment as positioned, and the working gear is suspended over an area other than an entrance or exit.

4.7 Operator-Exempt Cranes, & Mobile Cranes Rated 2,000 lb. Capacity or Less

The Operator directly controls the crane's functions. Persons operating these cranes are required to be trained by a qualified person prior to using them, but are not required to be state certified Operators (see Section 12.3).

The Crane Operator's duties include, but are not limited to the following:

- Not operating the crane when physically or mentally unfit, or engaging in activities that divert their attention while operating the crane (Ex: using a cellular phone).
- Understanding and applying the information contained in the Crane Manufacturers Operating Manual.
- Ensuring that all controls are in the off or neutral position and that all personnel are in the clear before energizing the crane or starting the engine.
- Performing a daily inspection prior to performing any lifts, to include filling out, signing and dating the Daily Inspection Card.
- Ensuring that the crane engine is shut down prior to refueling.
- Promptly reporting the need for any adjustments or repairs to the Machinery Skill Supervisor, or the contracted Crane Owner or User, as appropriate. Identified adjustments or repairs with the potential to interfere with safe operation of the crane must be addressed before operating the crane.
- Understanding crane functions, limitations, and particular operating characteristics.
- Testing the crane function controls that will be used and operating the crane only if those controls respond properly.

- Knowing and following the procedures specified by the Manufacturer or approved by a qualified person if assembling, disassembling, setting up, or reeving the crane.
- Knowing how to travel the crane, to include traveling with a load if allowed by the Crane Manufacturer's Instructions.
- Ensuring the crane does not travel within plot limits of an operating unit or other close quarters, unless accompanied by and in communication with at least one dedicated Spotter.
- Determining if a Work Permit is required for the crane operation to be performed, ensuring the permit is in effect prior to operating the crane in the area, and complying with all permit requirements.
- When using a Lift Director is required, then the following apply:
    - Confirming by conversation with the Lift Director prior to starting any lift that the Lift Director, Rigger, and Signal Person roles have been assigned to qualified persons, and the identity of those persons.
    - Reviewing the specifics of the lift with the Lift Director prior to starting each lift.
- Ensuring that the load and rigging weight(s) have been provided.
- Knowing what types of site conditions could adversely affect the operation of the crane and, when a Lift Director is required, discussing site conditions with the Lift Director prior to the start of the lift,
- Using the crane's load/capacity chart(s) and diagrams and applying all notes and warnings related to the charts to confirm the correct crane configuration to suit the load, site, and lift conditions.
- Calculating or determining the net capacity for all configurations that will be used and verifying, using the load/capacity chart(s), that the crane has sufficient net capacity for the proposed lift.
- Considering all factors known that might affect the crane capacity and, when a Lift Director is required, informing the Lift Director of the need to make appropriate adjustments.
- Following applicable Lock-Out/Tag-Out Procedures.
- Refusing to operate a crane when any portion of the load or crane would enter the prohibited zone of energized power lines except as defined in WAC 296-155-53408.
- Knowing the proper use of signals applicable to the crane work involved, and the requirements of Section 5 of this document.
- Observing or having a Spotter observe each outrigger during extension, setting, and retraction.
- Operating the crane's functions in a smooth and controlled manner.
- Knowing the following protocol for securing the crane if power fails during operations:
    - Setting all brakes and locking devices.
    - Moving all clutches or other power controls to the off or neutral position.
    - Landing any load suspended below the hook under brake control, if practical.
- Taking all of the following precautions before leaving the crane unattended:
    1. Not leaving the controls with a load suspended over an area accessible to people.
    2. Landing any load suspended below the hook, unless:

A. The Operator remains within 25' of the crane and is not engaged in other duties.

B. The load is to be suspended for a period of time exceeding that of a normal lift.

C. The Operator determines that it is safe to do so, and implements measures to restrain the boom hoist and telescoping, load, swing, and outrigger functions.

D. The fall zone is barricaded or otherwise secured to ensure no one, including the Riggers and Ground Crew, is allowed to enter.

3. Disengaging the master clutch.
4. Setting travel, swing, boom brakes, and other locking devices.
5. Putting controls in the off or neutral position.
6. Stopping the engine, unless crane operation is/will be frequently interrupted during a shift and the Operator must leave the crane. Under these circumstances, the engine may remain running and items 1 and 4 of this section apply. The Operator must be situated where anyone entering the crane can be seen.
7. Considering the recommendations of the Manufacturer for securing the crane, when a local weather storm warning exists.

- Not operating any crane rated 2,000lb capacity or less to hoist personnel.

  Exemption: Item 1 does not apply to working gear (such as slings, spreader bars, ladders, and welding machines) where the weight of the gear is negligible relative to the lifting capacity of the equipment as positioned, and the working gear is suspended over an area other than an entrance or exit.

4.8 Operators – Bridge, Wall, Jib or Other Stationary Cranes

The Operator directly controls the crane's functions. Operators must be designated personnel able to communicate with others to ensure safe operation of the crane, and be trained to operate the crane by a competent person prior to using the crane. Operators are not required to be state certified (see Section 12.3).

The Crane Operator's duties include, but are not limited to the following:

- Not operating the crane when physically or mentally unfit, or engaging in activities that divert their attention while operating the crane, (Ex: using a cellular phone).
- Understanding crane functions, limitations, and particular operating characteristics.
- Not operating the crane without assistance when the load is too large or unwieldy to guide with one hand.
- Knowing the proper use of signals applicable to the crane operation involved.
- If the crane main disconnect or emergency switch is found open, it shall not be closed until it is determined that personnel are clear of the crane. Cranes shall be locked-out/tagged-out prior to performing any type of crane maintenance.
- Performing the pre-lift daily inspection, including but limited to testing the controls, the upper limit switch (if so equipped) under no load, and completing the Daily Inspection Card.
- Promptly reporting the need for adjustments or repairs to the Maintenance Skill Supervisor. Identified adjustments or repairs with the potential to interfere with safe operation of the crane must be addressed before performing any lifting operation.

- Ensuring prior to the lift, that the load and rigging weight(s) are known and verifying the crane has sufficient net capacity for the proposed lift, and that the crane's capacity is not exceeded during a lift (except for test purposes as provided in WAC 296-24-23521).
- When/if other persons are utilized as Lift Director, Rigger, or Signal Person:
  - Confirm by conversation with the Lift Director prior to starting any lift, that the Lift Director, Rigger, and Signal Person roles have been assigned and are performed by competent or qualified persons.
  - Review the specifics of the lift with the Lift Director prior to starting each lift.
- Knowing and complying with the requirements of Section 5 of this document.
- Ensuring proper rigging and approved devices are used to attach the load to the hook.
- Ensuring that all personnel are in the clear before energizing the crane, and that no persons, including the Operator, are allowed to be under the load.
- Operating the crane's functions in a smooth, slow and controlled manner with no swinging or sudden acceleration or deceleration of the hook or load. The upper limit switch shall not be used as an operating control. The crane or rigging shall not be side loaded or used for side pulls.
- Avoiding bumping into bump stops.
- Testing the brakes each time a load approaching the rated load is handled. The brakes shall be tested by raising the load a few inches and applying the brakes.
- Ensuring the load and rigging do not contact obstacles and remain well balanced.
- Remaining at the crane controls at all times when the load is suspended.
- Ensuring no one rides on the load or hook.

Note: WAC 296-155-54200 stipulates that permanently installed overhead/bridge cranes, wall cranes, jib cranes and others having the same fundamental characteristics which are located in a manufacturing facility must be operated and maintained in accordance with WAC 296-24-235.

4.9 Assembly/Disassembly (A/D) Director

The Assembly/Disassembly (A/D) Director supervises the safe assembly, disassembly or reconfiguration of the crane. The A/D Director must be a person who meets the criteria for both a competent person and qualified person, or be a competent person assisted by one or more qualified persons. If the assembly/disassembly is being performed by a person working alone, they are the A/D Director and must meet the criteria for both a competent person and qualified person in performing this work. The A/D Director must understand the applicable assembly/disassembly procedures and maintain a high level of familiarity and ensure compliance with requirements of WAC 296-155, Sections: 53402 Crane Assembly/Disassembly, 53408 Power Line Safety, and 56430 Assembly/Disassembly – Working under the boom, jib or other components.

The Crane A/D Director's duties include, but are not limited to, the following:

- Ensuring that each assembly/disassembly operation is performed in compliance with Sections 7.0 and 12.0 of this procedure, WAC 296-155, Sections: 53402, 53408(1), and 56430.
- Reviewing the A/D Procedures immediately prior to performing A/D, if they have not performed the same A/D on the same type and configuration of crane before.

- Ensures the selection of components and crane configuration complies with either the:
  - Manufacturer instructions, recommendations, limitations, and specifications. When these documents and information are unavailable, a registered Professional Engineer familiar with the type of crane/derrick involved must approve, in writing, the selection and configuration of components; or
  - Approved modifications meeting the requirements of WAC 296-155-53400(58) and (59).
- Visually inspecting the components and attachments prior to assembly to ensure they are physically sound and meet the Manufacturer's recommendations.
- Ensures a post assembly inspection is completed and documented for every assembly or reconfiguration, and that the inspection documentation remains on the job site. For Marathon cranes, this means the most recent Assembly Inspection Form is retained in the cab.
- Ensuring that the A/D Crew understands their tasks, the hazards associated with those tasks, and the hazardous positions on/near the crane they need to avoid.
- Instructing crew members that they must inform the Operator of their intent before going to a location out of view of the Operator and on, near or under the load or any other location where they could be injured by movement of the crane or load.
- Ensures the Operator understands that when informed by a crew member (per previous bullet), they are not to move any part of the crane or load until informed by a pre-arranged method of communication that the crew member is in a safe position.
- Ensures crew members are not under the boom, jib, or other components when pins (or similar devices) are being removed, except where requirements of the previous bullet are met.

  Exception: Where it is demonstrated that site constraints require one or more workers to be under the boom, jib, or other components when pins (or similar devices) are being removed, the Assembly/Disassembly Director must implement procedures that minimize the risk of unintended dangerous crane movement, and minimize the duration and extent of exposure under the boom (see WAC 296-155-56430, Assembly/disassembly--Working under the boom, jib or other components--Sample procedures for minimizing the risk of unintended dangerous boom movement).
- Ensure that during all phases of assembly/disassembly, rated capacity limits for loads imposed on the crane/derrick, components (including rigging), lifting lugs and crane/derrick accessories are not exceeded.
- Ensure that when assembling/disassembling Marathon owned cranes, copies of WAC 296-155, Sections 53402 and 56430 are present at the job site.

See WAC 296-155, Sections 53402 and 56430 for additional direction and requirements.

Note: Copies of WAC 296-155, Sections 53402 and 56430 are to be readily accessible at the Marathon Garage and retained in the cab of each Marathon crane, except the Broderson and Mini Grove.

4.10 Rigger

The Rigger is responsible for all rigging on each lift. A Qualified Rigger must be used for any lift where Workers may be:

- In the fall zone, or
- Hooking or unhooking, or

- Guiding a load, or
- Making the initial connection of a load to a component or structure

Other persons not certified as Riggers may assist in rigging, if under the immediate direction of the Qualified Rigger. The Rigger shall also be a Qualified Signal Person. The Rigger may also serve as Lift Director and/or Signal Person, if performing more than one role does not inhibit their ability to fully and safely perform each role.

Exception: Per WAC 296-155-53414(7), for operations involving cranes of 2,000lb capacity or less the Rigger is not required to meet the qualification requirements set forth in WAC 296-155-53306. However, Riggers for these cranes must be competent persons with regard to the rigging to be used, and be trained in the requirements of WAC 296-155-53400(43), except the (43)(iii) requirement that rigging must be performed by a Qualified Rigger, which does not apply.

4.11 Signal Person

The Signal Person is responsible for knowing, understanding, and using all signal types designated for each lift by the Lift Director. The Signal Person may also serve as Lift Director and/or Rigger, if qualified and performing more than one role does not inhibit their ability to fully and safely perform each role.

Exception: Per WAC 296-155-53414 (6), for operations involving cranes of 2,000lb capacity or less the Signal Person is not required to meet the qualification requirements of WAC 296-155-53302. However, Signal Persons for these cranes must be trained in the proper use of signals applicable to the crane work involved, and in the requirements of WAC 296-155-53400 (43), except the (43)(iii) requirement that rigging must be performed by a Qualified Rigger, which does not apply

5.0 REQUIREMENTS – GENERAL AND WHEN WORKING WITHIN FALL ZONE

Whenever the Crane Operator or other person has doubt or concerns as to the safety of crane operations, the Operator must be informed and shall then stop the crane's functions in a controlled manner. Lift operations can only resume after safety concerns have been resolved, or the continuation of crane operations is directed by the responsible Site Supervisor or their designee. Availability of safety devices and/or operational aids must not be used as sole justification for overruling the professional judgment of the Operator.

General requirements, and when working within the fall zone:

- No persons shall be allowed to ride the ball or hook of the crane at any time.
- When moving a crane in a congested area or with the boom in a forward position where the Operator's vision is obstructed, a flag person shall precede the end of the boom. With the boom in a following position, the end of the boom shall be flagged.
- A crane shall not be operated in such a manner that any part of the equipment or its load is allowed to come within ten feet of a high voltage line.
- During any lift, the fall zone and area of the swing shall be flagged off. If flagging is impractical, other methods of restricting personnel access into the fall zone and swing area may be used if approved in advance by the Site Supervisor. Note that in this case, impractical does not mean inconvenient. It means close to impossible or having negative safety implications.
- Where available, hoisting routes that minimize the exposure of personnel to hoisted loads must be used.

- Pre-Lift Meetings and Job Hazard Analysis (JHA) Permit Part B Forms for lift operations must define the sequence of the work/crane movements and the communication methods to be used.
- While the Operator is not moving a suspended load, no personnel are allowed to be within the fall zone, except for those:
  - Engaged in hooking, unhooking or guiding a load
  - Engaged in the initial attachment of the load to a component structure
  - Operating a concrete hopper or concrete bucket, if that work is related to the lift
- When personnel are engaged in hooking, unhooking, or guiding the load; or in the initial connection of a load to a component or structure; and are within the fall zone, all of the following criteria must be met:
  - The materials being hoisted must be rigged to prevent unintentional displacement.
  - Hooks with self-closing latches, or their equivalent, must be used. J- Hooks are permitted to be used for setting wooden trusses.
- Only personnel needed to receive a load are permitted to be within the fall zone when a load is being landed.
- All loads must be attached to the hook by means of suitable slings or other devices of sufficient lifting capacity.
- When moving a load it must be well secured and balanced in the sling or lifting device before it is lifted more than a few inches.
- Tag lines or restraint lines must be used when rotation or swinging of the load is hazardous, or if the load needs guidance. Tag lines are not required when all of the following criteria are met:
  - The suspended load can be expected to remain still when in a static (i.e. non-moving) condition, or does not swing or rotate in a hazardous manner.
  - The movement of the crane or boom cannot be expected to cause the load to swing or rotate in an uncontrolled manner that may create a hazard.
  - The Operator is in control of the movement of the load, and a hazardous condition is not created.

  Exception: For personnel platform lifts, tag lines shall be used to prevent rotation or swinging of the platform, unless their use creates a greater hazard.

5.1 Swing Radius Hazards

The Marathon Anacortes Refinery restricts personnel from entering accessible areas in which the crane's rotating superstructure, whether permanently or temporarily mounted, poses a reasonably foreseeable risk of striking, pinching, crushing, or injuring workers. Each person assigned to work on or near the crane (i.e. authorized personnel) shall be trained on how to recognize struck-by and pinch/crush hazard areas posed by the rotating crane superstructure. The following must be erected and maintained: control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas.

Exception: When it can be demonstrated that it is neither feasible to erect such barriers on the ground or on the crane, the hazard areas must be clearly marked by a combination of warning signs (such as danger- swing/crush zone) and high visibility markings on the crane that identify the hazard areas. In addition, personnel shall be trained to understand what these markings signify.

5.2 Physical Fitness of Crane Operators

Note: Per WAC 296-24-23529(4) and (5).

No person shall be permitted to operate a crane whose hearing or eye- sight is impaired, or who may be suffering from heart disease or similar ailments. The following physical qualifications shall be minimum requirements for Crane Operators and Trainees:

- Vision of at least 20/30 in one eye, and 20/50 in the other (i.e. with or without corrective lenses).
- Able to distinguish colors, regardless of position of colors, if color differential is required for to perform a specific crane operation.
- Hearing, with or without hearing aids, must be adequate to perform a specific crane operation.
- Sufficient strength, endurance, agility, coordination, and speed of reaction to meet the demands of equipment operation.
- Normal depth perception, field of vision, reaction time, manual dexterity, coordination and no tendencies to dizziness or similar characteristics.
- Evidence of physical defects, or emotional instability which could render the Operator or Trainee a hazard to themselves or others, may be sufficient cause for disqualification. In such cases, specialized clinical or medical judgments or tests may be required, which includes an annual medical certification for recovered heart attack patients.
- Evidence that an Operator or Trainee is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests may be required to substantiate these conditions.
- Persons who have recovered from a heart attack shall be exempted from the provisions in the first paragraph of this section, as it pertains to their heart condition, provided:
    - A medical release is obtained from their attending Medical Doctor, stating that they will not present a hazard to themselves or others by operating a crane.
    - An examination by a Medical Doctor and renewal of the work release certification is required annually.

6.0 FALL PROTECTION FOR PERSONS PERFORMING CRANE INSPECTION, MAINTENANCE OR ASSEMBLY/DISASSEMBLY

The Marathon Anacortes Refinery fall protection requirements for crane non-assembly/disassembly work and disassembly/ assembly work are more stringent than the requirements of the OSHA rules. For cranes manufactured after 2012, see WAC 296-155-53403 for additional requirements.

These requirements apply to all cranes and personnel performing maintenance, assembly/ disassembly or other work on any crane/derrick used on site including tower cranes. All steps, handholds, ladders and guardrails/railings/grab-rails on a crane must be maintained in good condition. Fall protection equipment must be utilized if personnel are on a walking/working surface with an unprotected side or edge more than ten feet above a lower level, to include when moving point to point and while at any work station on the boom or any part of the crane.

Note: If the equipment is running and personnel are at or near the draw- works, precautions should be taken to ensure the fall protection gear will not become entangled.

Personal fall arrest and fall restraint systems must conform to the criteria in R-11-033 Fall Protection.

6.1 Anchorage Criteria

Anchorage criteria defined in this regulation apply to crane work only. They differ from and supersede anchorage criteria defined in R-11-033.

Anchorages and anchor devices (fixed or portable) used for attachment of personal fall arrest equipment must be:

- Independent of any anchorage being used to support or suspend platforms
- Attached to an anchorage which a competent person has visually inspected, without an engineering analysis, and deemed capable of supporting at least five thousand pounds per worker, or must be designed, installed, and used:
    - As part of a complete personal fall arrest system which maintains a safety factor of at least two, and
    - Under the supervision of a qualified person
- Positioning devices must be secured to an anchorage which a competent person has visually inspected, without an engineering analysis, and deemed capable of supporting at least twice the potential impact load of an employee's fall or three thousand pounds, whichever is greater.
- Fall restraint systems must be anchored to any part of the crane which a competent person has visually inspected, without an engineering analysis, and deemed capable of withstanding twice the maximum load that an employee may impose on it during reasonably anticipated conditions of use

7.0 MOBILE CRANES – MAINTENANCE, INSPECTION ASSEMBLY/ DISASSEMBLY AND OPERABILITY REQUIREMENTS

7.1 Maintenance & Inspection Frequency

All cranes operating on site are required to be maintained and inspected by their Owner or User in accordance with WAC 296-155 Part L.

7.2 Qualifications – Persons Performing Maintenance

Personnel performing maintenance or repair on any crane operated on site must meet the definition of a qualified person with respect to the tasks they perform and the specific crane they are working on. Under the direction of the Machine Shop Supervisor, and to the extent of their qualifications as allowed in WAC 296-155-53304, Marathon Drivers, Garage Mechanics, Machinists, and Specialty Repair Vendors may perform limited crane maintenance and repairs to Marathon cranes, while referring to the Manufacturer's Operation and Repair Manuals. Repairs beyond the scope of their qualifications and experience shall be performed by third party qualified crane repair personnel, such as Delcon and Coast Crane. Maintenance and repairs to Marathon cranes are recorded on hard copy equipment records which are retained in the Garage. In the case of major repairs, a verification record is entered into SAP.

7.3 Daily Inspections

Daily inspections of Marathon owned or leased cranes shall be performed by Marathon Anacortes Refinery certified Crane Operators, or by contractor certified Crane Operators familiar with the equipment, and competent to perform the inspection. Daily inspection of all cranes shall be completed by the Operator prior to performing the first lift or other operation of the day, to include filling out, signing and dating the Daily Log Book.

Exception: Exempt crane daily inspections may be performed by any Operator trained to perform the inspection.

7.4 Monthly Inspections

Monthly inspections of Marathon owned or leased cranes shall be performed by, or under immediate direction of, a certified Crane Operator according to a strict preventative maintenance (PM) schedule automatically generated by SAP. The hard copy inspection record is retained on file, and a verification record of the inspection is entered into SAP.

7.5 Annual Inspections

Annual inspections of Marathon owned or leased cranes shall be performed by a third party State Accredited Crane Certifier. Hard copies of each inspection record are retained by the Inspector and are on file in the Machinery Planner's Office. A verification record of the inspection is entered into SAP.

7.6 Crane Assembly/Disassembly & Post Assembly/Disassembly Inspection

All crane assembly/disassembly operations performed on site shall be performed in accordance with Sections 6.0, and 6.1 of this procedure, the Crane Manufacturer Instructions, and with the requirements of WAC 296-

155, Sections: 53402 Crane assembly/disassembly, 53408 Power Line Safety, and 56430 Assembly/disassembly – Working under the boom, jib or other components.

7.7 Events Causing Invalidation of a Crane's Certification

If any of the events listed below occur involving a certified crane, the certification of the crane is automatically invalidated and the crane must be inspected by an Accredited Crane Certifier before being returned to service. The Owner or Lessee must notify the crane certification section by phone, (360) 902-4943 or fax (360) 902-5438, or e-mail at lnicranes@lni.WA.gov within twenty-four hours if any of these events occur. The Crane Certifier may require proof load testing prior to recertification.

Events causing invalidation of a crane's certification:

- Contact with an energized power line.
- Any overload, other than proof load testing, or one that has been pre- approved in writing by the Manufacturer or a registered Professional Engineer.
- Any significant modifications or significant repairs of a load sustaining/bearing part that affects the safe operation of the crane. Proof load testing shall be mandatory.
- Any deficiency affecting safe operation of the crane that has been identified by a qualified person or through an inspection by the Department of Labor and Industries.

Note: Replacement of hoisting cable does not constitute decertification.

7.8 Safety Devices & Equipment

The safety devices listed below are required on all cranes, except tower cranes, unless otherwise specified. Lift operations must not begin unless the devices are in proper working order. If a device stops working properly during operations, the Operator must safely stop operations.

If any of the devices listed below are not in proper working order, the equipment must be taken out of service and operations must not resume until the device is working properly. Alternative measures are not permitted to be used.

- Crane level indicator, that is either built into the crane or is available on the crane
- Boom stops, except for derricks and hydraulic booms
- Jib stops (if a jib is attached), except for derricks
- Cranes with foot pedal brakes must have locks
- Hydraulic outrigger jacks and hydraulic stabilizer jacks must have an integral holding device/check valve
- Built-in horn or a removable horn that is available to the Operator
- Cranes must have a static grounding strap installed or utilize a grounding chain. The chain can be attaching to any part of the crane frame and then laid on the ground while the crane is set up for a lift.

7.9 Operational Aids

The operational aids listed below must be fully functional before operating any crane so equipped, unless the aid is being repaired and the Crane Owner or User employs the acceptable temporary alternative measures listed in WAC 296-155-53412. If more restrictive alternative measures are specified by the Crane Manufacturer, those measures must be followed. If any operational aid is found to be defective, the crane must be removed from service as soon as safely possible and repairs are to be expedited. The crane shall not be returned to service until the aid is repaired or the responsible Site Supervisor or their designee grants permission to employ acceptable alternative measures allowed by the Manufacturer and the WAC. A crane shall not be used for lifting personnel platforms or Boatswains Chairs unless all operational aids it has typically been equipped with are fully functional.

The following devices are classified as operational aids:

- Boom hoist limiting device
- Pre-move checklists that are installed as references in crane cab.
- Anti-two-blocking device
- Boom angle radius indicator
- Boom length indicator
- Load weighing and similar device cranes (other than derricks and articulating cranes) manufactured after March 29, 2003, with a rated capacity over six thousand pounds must have at least one of the following: load weighing device, load moment (or rated capacity) indicator, or load moment (or rated capacity) limiter.

The following operational aids are also required on cranes manufactured after February 28, 2013:

- Outrigger/stabilizer position (i.e. horizontal beam extension) sensor/monitor if the crane has outriggers or stabilizers
- Hoist drum rotation indicator if the crane/derrick has a hoist drum that is not visible from the Operator's station

Note: If a replacement part is no longer available, the use of a substitute device that performs the same type of function is permitted and is not considered a modification under WAC 296-155-53400(58) and (59) crane modifications).

8.0 TYPES OF LIFTS - DEFINITIONS

Marathon ANR categorizes lifts into three types:

- Routine Lift
- Special Lift
- Critical Lift

8.1 Routine Lifts

Routine lifts are lifts that do not meet the criteria as critical or special lifts, and present a comparatively low level of risk. Examples include, but are not limited to:

- Lifts outside of the process units
- PSV removal/replacement activities in process units
- Heat exchanger bundle removal/reinstallation in process units
- Simple piping system change outs, etc., in process units.
- Personal fall arrest system attachment to load line of deadsticked crane. A personal fall arrest system is permitted to be anchored to the crane/derrick hook (or other part of the load line) where all of the following requirements are met:
    - A qualified person has determined that the set-up and rated capacity of the crane/derrick (including the hook, load line and rigging) meets or exceeds the applicable portions of the requirements in Section 11.8 of this procedure.
    - The Crane Operator must be at the worksite and informed that the crane is being used for this purpose.
    - No load is suspended from the load line when the personal fall arrest system is anchored to the crane/derrick hook (or other part of the load line).
    - The crane remains deadsticked while personnel are suspended.
    - Weather considerations as described in section 11.3 of this procedure are applied.

8.2 Special Lifts

Special lifts do not meet the criteria of a critical lift, and present a higher level of risk than a typical routine lift. Examples include, but are not necessarily limited to:

- Lifts outside of the process units that would otherwise be defined as routine, but require considerably more care from the crew in handling the load. Planners and/or the RS are responsible for identifying these types of lifts and re-designating them as a special lift.
- Lifts occurring directly over process equipment, that are determined by a Planner and/or RS to be special lifts after discussing the lift with the Zone Operations Coordinator or Operations Supervisor for the area the lift is to occur. This discussion should take place during the planning phase of the job, but in all cases shall take place prior to performing the lift.

8.3 Critical Lifts

Crane operations including, but not necessarily limited to, the following:

- Lifts exceeding seventy-five percent of the cranes rated load chart capacity

- Lifts requiring the use of more than one crane
- Any lift where any portion of the load or crane would enter the prohibited zone of energized power lines, except as defined in WAC 296- 155-53408
- Lifts exceeding 25 tons, except in a lay down area
- Multiple load line lifts
- Lifts over process equipment or piping that, in the judgment of the Planner or RS, involve a level of risk higher than a routine or special lift.
- Man basket (i.e. personnel platform) lifts
- Lifts where the Riggers or a significant portion of the crew are inexperienced in the type of lift or the rigging to be used

Note: Maintenance Planners or Maintenance Supervisors may deem some routine or special lifts as critical lifts if the load requires exceptional care in handling because of the size, weight, close-tolerance installation, high susceptibility to damage or other unusual factors.

9.0 REQUIREMENTS FOR ROUTINE AND SPECIAL LIFTS

9.1 Routine Lifts

No special documentation or other specific requirements apply. Follow all routine crane operation and rigging requirements, including requirements related to weather conditions (wind).

9.2 Special Lifts

A Special Lift Plan Form (Attachment 1) must be completed prior to performing any special lift, and shall be part of the permit package during the lift. A Contingency Plan for reducing and mitigating risks associated with the lift must be completed and documented on the form. Due to the inherent risks present within the process units, the rigor used to check and double check preparations for critical lifts should be applied to special lift preparations when lifting over process equipment or piping.

All crane operational aids must be fully functional. No temporary alternative measures to mitigate a failed operational aid are to be employed.

Note 1: Where multiple lifts over process equipment or piping are required from the same crane position, a single Attachment 1 Form can be approved based on the heaviest planned lift and common operational contingencies, within the crane swing window. Example: A project with duration of 12 days for the installation of 40' sections of 6" pipe into the pipe rack utilizing the same crane location, welding the adjoining sections and then pulling the sections down the rack prior to placement of the next 40' section (i.e. one Attachment 1 Form required).

For extended project work or turnaround activities, Planners will work with Operations to identify lifts over process equipment or piping to determine which ones will require an approved Attachment 1 Form, with consideration given to operating conditions (including temperature, pressure, isolation, and overall hazards). Example: A three week turnaround activity requiring multiple lifts to replace all trays for a column in a unit that has been de- inventoried and, with Operations, has been determined hydrocarbon free (i.e. no Attachment 1 Form required). Example: A two week activity during turnaround/project to install a new vessel and related piping in a unit that has remaining hydrocarbon inventory

within nearby vessels, and will require lifting over the pipe rack with active 650# steam lines (i.e. one Attachment 1 Form required).

Note 2: When using a Tower Crane to lift over process equipment or piping, a single Attachment 1 Form may be written and approved to address the use of the crane for the heaviest planned lift and the general lift radius for the duration of the proposed operation. Example: turnaround/project with an estimated duration of 28 days, March 1st through 28th, with miscellaneous lifts identified, but the heaviest estimated lift of 2,100 lbs. for removal/replacement of the electric motor at the CCU Elevator penthouse landing. This lift is estimated to be 74% of the Tower Crane capacity as it nears the limitations for reach with existing swing radius configuration (i.e. one Attachment 1 Form required).

10.0 REQUIREMENTS FOR ALL CRITICAL LIFTS

No critical lift may be performed, except under the direction of a Specific Lift Supervisor appointed for the specific lift(s).

10.1 Critical Lift Supervisor Qualifications & Duties

The Critical Lift Supervisor is similar to a Lift Director, but for critical lifts. They directly oversee the preparations, associated Rigging Crew, and the actual lift. No specific certification or training is required for this role*, but the Lift Supervisor shall be a competent person and although not required, ideally should be a certified Rigger and Signal Person. No person shall assume the role of Lift Supervisor until deemed competent by another competent qualified person who has previously been a Lift Supervisor. The Lift Supervisor role is much more complex than that of the Lift Director, and for routine maintenance work is normally performed by the Marathon or contractor foreperson or RS executing the work. The Lift Supervisor must be knowledgeable in the requirements of this procedure. The Lift Supervisor shall have no other duties while the lift is being performed (i.e. load is in the air).

* Exception: For multiple-crane/derrick lifts or multiple load line lifts the Lift Supervisor must be a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons. This Lift Supervisor should be a person with prior experience in supervising or operating a crane in similar multiple- crane/derrick lifts or multiple load line lifts.

10.2 Lift Supervisors Responsibilities for All Critical Lifts

The Lift Supervisor's responsibilities for all critical lifts include, but are not limited to, the following:

- Be familiar with and ensure compliance with all requirements of this procedure.
- Ensure a Critical Lift Plan is developed and used in performing any critical lift.
- Be present at the lift site during proof load testing and whenever the personnel lift is suspended and occupied.
- Inspect the lift area for potential hazards during the planning phase and immediately prior to the lift, and ensure any hazards found are mitigated prior to performing the lift.
- Stopping crane operations if alerted to an unsafe condition affecting those operations.
- Ensuring all personnel involved in the crane operation understand their duties, and the associated hazards.

- Ensuring that Riggers and Signal Persons are appropriately qualified, and providing that qualification information to the Crane Operator.
- Allowing crane operation near electric power lines only when the requirements of WAC 296-155-53408 and any additional requirements given by the Site Supervisor have been met.
- Addressing safety concerns raised by the Crane Operator or other personnel, and deciding if it is necessary to engage the responsible Site Supervisor to resolve those concerns. In all cases, the Crane Manufacturer's criteria for safe operation, requirements of WAC 296-155 part L, and any other applicable safety and health standards must be adhered to.
- On the day of the lift, the Lift Supervisor shall confirm that the most recent post-assembly, annual, monthly, and daily crane inspections have been performed and documented, and that all crane operational aids, without exception, are fully functional (see Section 7.10).

10.3 Communication Requirements for all Critical Lifts

- Hand signals to the Operator shall be in accordance with those prescribed by the applicable ANSI codes for the type of crane or lift in use, unless voice communication equipment is utilized. Signals shall be discernible or audible at all times.
- Hand signal illustrative placards must be posted conspicuously at the following locations (see Attachment 6 or similar guidance):
  - On the crane/derrick as required by WAC 296-155 part L
  - Inside the personnel platform
  - At any platform motion control locations
- Some operations may require additions to or modifications of standard signals. Any special signals must be agreed upon and understood by the Signal Persons and Crane Operator.
- Special signals must not conflict with the crane/derrick standard signals.
- Voice commands, if used, shall be as follows:
  - Up on the load
  - Swing right
  - Down on the load
  - Extend out
  - Boom up
  - Extend out and hold the load
  - Boom down
  - Retract in
  - Boom up and hold the load
  - Retract in and hold the load
  - Boom down and hold the load
  - Stop
  - Swing Left

- If radio communications are to be used, all radios must have fresh batteries and one spare battery for each model of radio in use, or one spare radio, shall be present at the lift site. A single radio channel will be designated and communicated to all lift participants who will be using radios. Proper channel selection and operation of all radios shall be verified during the Pre-Lift Meeting.
- Hand and voice communication methods or systems to be used during the lift must be verified as functional and effective prior to commencing the lift.
- Signals must be discernible or audible to the Operator. No Operator response or action shall be made unless signals are clearly understood.
- For personnel lifts, one occupant must be designated as the Platform Signal Person. This person shall be responsible for communicating with the Operator and/or other designated Signal Persons. If communications between Operator and platform occupants are disrupted, all operations must be stopped until the source of the disruption is eliminated and communication is re-established.
- For personnel lifts, platform occupants shall remain in continuous sight of or in communication with the Operator and in sight and direct communication of a Signal Person. In situations where direct visual contact with the Operator is not feasible, and the use of a Signal Person would create a greater hazard for that person, direct communication alone such as by radio may be used.

10.4 Critical Lift Plan Requirements (If Not Lifting Personnel)

The company performing the lift shall develop a written Critical Lift Plan which addresses, at a minimum, all of the elements noted on the Attachment 2 Critical Lift Plan Form. It is essential that all process hazards are adequately communicated to lift personnel during development of the Critical Lift Plan. The written Lift Plan should be developed in the planning phase of the job, and shall be part of the permit package during the lift. Resources such as Operations, Inspection, Safety or the Crane Operators should be consulted in development of the Critical Lift Plan.

All Critical Lift Plans shall be reviewed and approved by the following representatives:

- Crane Owner or User Representative
- The responsible Marathon crane Site Supervisor
- Responsible Marathon Maintenance or Project Coordinator
- Marathon Health & Safety Superintendent and/or Area Safety Specialist
- Lift Supervisor
- Zone Operations Coordinator and/or Day Supervisor (i.e. when in a process area)

Multiple Crane or Multiple Load Line Critical Lifts: Where multiple load lines will be used, or any part of a crane/derrick will be within the working radius of another crane/derrick, the responsible Site Supervisor or their designee must implement a system to coordinate operations. Planning must meet the following requirements:

- The plan must be developed by a qualified person.
- The plan must be designed to ensure that the requirements of this procedure are met.
- When the qualified person determines that Engineering expertise is needed for planning, the Site Supervisor or their designee must ensure that it is provided.

10.5 Lift Preparations (If Not Lifting Personnel)

The Lift Supervisor is responsible for ensuring the Lift Plan has been reviewed and is included in the work package prior to scheduling the lift, and for ensuring all other requirements of this procedure related to the specific lift are followed.

The Lift Supervisor shall:

- If necessary, arrange for roadways within the overhead radius to be closed to traffic for the duration of the lift, except for emergency vehicles, or equipment required for the lift. This should be communicated, preferably via a Point of Interest (POI) 1-2 days prior to the lift.
- Assume responsibility for coordinating the Pre-Lift Meeting and arrange for the presence of all required attendees, well in advance of the lift (i.e. preferably the day before the lift).
- Approximately 15-30 minutes prior to the lift, notify the appropriate Operations Shift Supervisor, Area Safety Specialist, responsible Unit Operator, Crane Operator and Ground Crew of the time and place to gather at the lift site for the Field Pre-lift Meeting.

Upon notification that the Pre-Lift Meeting is about to take place:

- The Responsible Unit Operator shall confirm that non-essential work within the lift radius has been stopped and personnel have been moved to a safe location.
- The Operations Shift Supervisor shall confirm that no upset or special process conditions exist that would make the planned lift inadvisable.

Pre-Lift Meeting Requirements: Immediately prior to the lift, a field Pre-Lift Meeting shall be conducted by the Lift Supervisor at the job site for the completion of the Work Permit and Job Hazard Analysis (JHA), and a final review of the written Critical Lift Plan. Participating in the final JHA development will be:

- Responsible Marathon Maintenance or Project Coordinator/Supervisor
- Lift Supervisor
- Responsible Marathon Zone Operations Coordinator/Supervisor
- Marathon Area Safety Specialist
- Responsible Unit Operator(s)
- Crane Operator(s) for the job
- Signal Person(s) for the job
- The Qualified Rigger(s) and all personnel assisting the Rigger(s)
- Tag line person(s)
- Truck Driver and others assigned to the lifting operation

Items discussed and actions taken during the Pre-Lift Meeting shall include:

- A review of elements of the Critical Lift Plan.
- The weight of the load.
- Review of the load chart capacities of the crane configuration.
- Equipment lift radius, lay down siding, sequence of lift operations, routes and transportation plan, and how to get in and out of the unit.
- Stoppage of non-essential work.

- Review of task specific safety requirements.
- Identification/designation of who will be the Lift Supervisor, and that this person alone will control overall lift operations (i.e. rigging, crane positioning, lifting, movement, etc.). This designated person shall wear a reflective vest.
- Discussion of Contingency Plan.
- Review the lift radius exclusion zone and the method to communicate/demarcate the lifting area (i.e. barricades, flags, horns, visible vest Spotters, etc.).
- Details of designated method(s) of communication to be used during the lift.
- Execute required signatures of agreement at the bottom of the Critical Lift Plan.

11.0 MAN BASKET (PERSONNEL PLATFORM) AND BOATSWAINS CHAIR LIFTS

11.1 Additional Lift Supervisors Responsibilities for Personnel Critical Lifts

In addition to those described in sections 10.1 through 10.2 of this procedure, Lift Supervisor responsibilities for personnel lifts also include, but are not limited to:

- Being present at the lift site during proof load testing, and whenever the personnel lift is suspended and occupied.
- Immediately prior to hoisting personnel, with the assistance of the Lift Rigger and Crane Operator, personally verify the platform is securely attached to the crane or derrick as specified by the Platform Manufacturer and Crane/Derrick Manufacturer or qualified person.
- Ensuring the Man Basket Critical Lift Inspection Form is reviewed and approved in advance by those designated to sign it.
- Ensuring the number of Signal Persons, Ground Crew, and platform occupants is appropriate to perform the lift safely.
- If the occupied platform is to be positioned near live Furnace or Boiler Stack dispersion, during the job planning phase contact the Area Safety Specialist and determine air quality monitoring requirements to be maintained during the personnel lift. If at any time during the lift the air quality at the platform exceeds acceptable exposure limits, the lift shall be terminated and the JHA and Work Permit re-evaluated.
- Ensuring the Crane Operator performing the lift:
  - Is physically and mentally fit to perform the lift.
  - Has not been working for more than ten hours prior to the start of the lift, and is not expected to reach 12 hours worked before completing the lift.
  - Has had at least eight hours off, immediately prior to the work shift during which they will perform the personnel lift.

11.2 General Requirements

The company performing the lift shall develop a written Critical Lift Plan which addresses, at a minimum, all of the elements noted on the Attachment 4 Daily Man Basket Critical Lift Form. It is essential that all process hazards are adequately communicated to lift personnel during development of the Critical Lift Plan. The written Lift Plan should be

developed in the planning phase of the job, and shall be part of the permit package during the lift. Resources such as Operations, Inspection, Safety or the Crane Operators should be consulted in development of the Critical Lift Plan.

- Use of a crane or derrick to hoist workers on a personnel platform or Boatswains Chair is prohibited except when the erection, use, or dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous, or is not possible because of structural design or worksite conditions.
- Personnel lifting over, under or in the vicinity of power lines must be performed in accordance with the requirements of Figures 9, 10 and 11 and Table 10 in WAC 296-155-55305.
- If any persons performing the roles named in Section 4.0 are changed during a lift or series of lifts, the Pre-Lift Meeting must be repeated with all current and oncoming persons in attendance.
- If the platform to be lifted is a Motorized Suspended Scaffold, R-11-026 Section 12 must be followed, in addition to the requirements of this procedure.

11.3 Weather Considerations

When feasible the Lift Supervisor or their designee must begin monitoring weather forecasts at least 24 hours in advance of the lift, and continue monitoring at intervals appropriate to the conditions until the lift is complete. A functioning anemometer (i.e. wind speed indicator), shall be fastened to the personnel platform frame at eye level in a location easily visible to at least one platform occupant, and activated/monitored frequently when the platform is suspended. Anemometers are available from the Marathon Tool Room. The Lift Supervisor and Crane Operator must remain in agreement that existing and impending weather conditions provide a safe work environment before personnel lift operations may begin or continue. If in either of their judgments there are sufficient indications of the following or other existing or impending dangerous weather conditions, the lifting operation must not begin, or if already in progress, must be terminated:

- Darkness, fog, snow, dust, or other conditions severe enough to prevent clear visibility
- Electrical storms
- Snow, ice, sleet, hail, very heavy rain
- Winds in excess of twenty mph, or the potential for winds that in the judgment of the Crane Operator or Lift Supervisor may exceed twenty mph.

11.4 Personnel Platforms – Design, Construction & Repair Criteria

- The personnel platform and suspension system shall be designed by a Qualified Engineer or a qualified person competent in structural design.
- The suspension system shall be designed to minimize tipping of the platform due to movement of workers occupying the platform.
- The personnel platform itself, except the guardrails and fall protection anchorages, shall be capable of supporting, without failure, its own weight and at least five times the maximum intended load based on a minimum allowance of five hundred pounds for the first person with light tools, and an additional two hundred fifty pounds for each additional person.

- The personnel platform shall be conspicuously posted with a plate or other permanent marking which indicates the weight of the platform and its rated load capacity or maximum intended load. An identification plate must be located on the platform. The plate must be protected against damage and be easily viewed from both interior (i.e. while hoisted) and exterior (i.e. while not hoisted) of the platform.
- Personnel platforms shall be equipped with a guardrail system which meets the requirements of WAC 296-24-75007, and shall be enclosed at least from the toe board to mid-rail with either solid construction or expanded metal having openings no greater than one-half inch (i.e. 1.27cm).
- A grab rail shall be installed inside the entire perimeter of the personnel platform.
- Access gates, if installed, shall not swing outward during hoisting and shall be equipped with a restraining device to prevent accidental opening.
- Special requirements for barrel type platforms:
    - A solid bar or rod shall be substantially attached in a rigid position to the bottom or side of the work platform.
    - The side bar or rod shall extend a minimum of 8’ above the floor of the work platform.
    - The bottom of the barrel-type platform shall be of a convex shape to cause the platform to lie on its side when landed.
- Headroom shall be provided which allows personnel to stand upright in the platform.
- All rough edges exposed to contact by workers shall be surfaced or smoothed in order to prevent injury from punctures or lacerations.
- Any adjustments or repairs to the platform must be done by a qualified person.
- Adjustments or repairs to the suspension system must be done by a qualified person.
- Replacement parts or repairs must be equal to or exceed original equipment specifications.
- Records of any repairs to the structural components of the platform must be maintained and retained on site, or made available on site upon demand.
- The Manufacturer or a qualified person must pre-approve any modifications, in writing.
- All welding of the personnel platform and its components shall be performed by a Qualified Welder familiar with the weld grades, types, and material specified in the platform design.
- The platform and rigging must be proof load tested after any structural repair or modification, before lifting personnel. Test suspended platforms as follows:
    - Load the platform to 150% of rated capacity (i.e. 150%, not 125% as in normal testing).
    - Raise, then lower the platform at a rate of at least 150 ft/min.
    - Suspend the platform stationary for at least five minutes. A qualified person must then inspect the platform and rigging. If deficiencies are noted they must be repaired and this test sequence repeated until successful, prior to hoisting personnel.

Note: The requirements for post structural repair platform testing are different than routine pre-lift proof load testing.

11.5 Platform Rigging

- Lifting bridles on box-type platforms shall consist of four legs of equal length, with one end securely shackled to each corner of the platform and the other end securely attached to a common ring, shackle, or other equivalent device to accommodate the crane hook, or a strap to the crane hook.
- Shackle bolts used for rigging of personnel platforms shall be secured against displacement. (nutted, pinned, or moused with safety wire.)
- A substantial safety line shall pass through the eye of each leg of the bridle adjacent to the common ring, shackle, or equivalent device and be securely fastened with a minimum amount of slack to the lift line above the headache ball or to the crane hook itself. (attachment to lift line above the headache ball is preferred on our site)
- All eyes in wire rope sling shall be fabricated with thimbles.
- Wire rope, shackles, rings, master links, and other rigging hardware must be capable of supporting, without failure, at least five times the maximum intended load applied or transmitted to that component. Where rotation resistant wire rope is used for slings, they shall be capable of supporting without failure at least ten times the maximum intended load.
- Hooks on headache ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut, and retaining pin shall be used.
- Bridles and associated rigging for attaching the personnel platform to the hoist line shall be used only for the platform and the necessary employees, their tools and the materials necessary to do their work, and shall not be used for any other purpose when not hoisting personnel.
- When the crane is using a multiple-part line block, a substantial strap shall be used between the crane hook and man basket common ring, shackle, or other equivalent device, to eliminate employee exposure to the lines running through the block, and to the block itself.

See attachment 3 page 2 as a visual reference for man basket rigging configuration.

11.6 Personnel Platforms Annual Inspection

Annual inspections shall be performed by competent and qualified persons, utilizing the criteria in Sections 11.4 and Attachment 3 of this procedure. For Marathon owned platforms, hard copies of the two most recent inspection records shall be retained on file in the Machinery Planner's Office, and a verification record of the inspection shall be entered into SAP. For contractor owned platforms, a copy of the annual inspection record shall be available on site while the platform is on site.

11.7 Personnel Platform Loading & Allowable Use

- The personnel platform shall not be loaded in excess of its rated load capacity, except during proof load testing.
- The number of workers occupying the personnel platform shall not exceed the maximum allowed by the Platform Manufacturer, or the minimum number required for the work being performed, whichever is less.

- Personnel platforms shall be used only for workers, their tools, and the materials necessary to do their work, and shall not be used to hoist only materials or tools when not hoisting personnel. There shall be no exceptions.
- Materials and tools for use during a personnel lift shall be secured to prevent displacement, and evenly distributed within the confines of the platform while the platform is suspended.
- Any concentrated loading of the platform must be reviewed by a Qualified Engineer to preclude the overstressing of any component or impairing the platform stability. The platform should, at all times, sit level when occupied and suspended.

11.8 Fall Protection & PPE Requirements

- Except over water, box-type platform occupants shall use a fall protection system with lanyard appropriately attached to the lower load block or overhaul ball, or to a structural member or guardrail within the personnel platform capable of supporting a fall impact of at least five thousand pounds per worker.
- Except over water, barrel type platform occupants shall use a fall protection system with lanyard appropriately attached to the lift line above the headache ball or to the crane hook itself (i.e. attachment to the lift line above the headache ball is preferred).
- Platform occupants must use personnel protective equipment, such as hard hats, safety glasses, hearing protection, and gloves, and shall be protected by overhead protection on the personnel platform when workers are exposed to falling objects.
- If the platform is used in performing a rescue, the injured worker shall first be strapped into the stretcher or basket. The basket shall then be secured by lanyard to an anchorage within the platform.

11.9 Operational Criteria – Crane Operators & Cranes

- The Crane Operator shall not perform personnel lifts if they:
  - Are physically and mentally unfit to perform the lift.
  - Have been working for more than ten hours prior to the start of the lift, or they can be expected to reach 12 hours worked before completing the lift.
  - Had less than eight hours off, immediately prior to the work shift during which they will perform a personnel lift.
- The Crane or Derrick Operator shall remain at the controls at all times when the crane engine is running and the platform is occupied.
- Hoisting of the personnel shall be performed in a slow, controlled, cautious manner with no sudden movements of the crane or derrick, or the platform.
- No lifts shall be made on another of the crane's or derrick's load lines while personnel are suspended from the crane on a platform or Boatswains Chair.
- All crane operational aids present shall be fully functional.
- Outriggers or stabilizers shall be fully extended, blocked, and locked in accordance with the Manufacturer's specifications.
- Load lines shall be capable of supporting, without failure, at least seven times the maximum intended load; except that where rotation resistant rope is used, the lines shall be capable of supporting without failure, at least ten times the maximum intended load. The required design factor is achieved by taking the current safety factor of 3.5 and applying the fifty percent de-rating of the crane capacity.

- If a platform cannot be landed during the entrance or exit of the occupants, position the personnel platform so that it may be secured to the structure the occupants are entering or leaving. If occupants are entering or leaving the platform or it has been secured to a structure, the Operator shall not move the platform until occupants verify they are safely onboard or offloaded, and the platform is freely suspended. Barrel-type platforms shall be stable and in an upright position prior to occupants entering or exiting.
- When the boom or personnel platform is positioned near live Furnace or Boiler Stacks, ensure that residual temperatures from the stack gases do not compromise platform occupant safety, crane components or cabling.
- Load and boom hoist drum brakes, swing brakes and locking devices such as pawls or dogs shall be engaged when an occupied personnel platform or Boatswains Chair is in a stationary working position.
- Cranes and derricks with variable angle booms shall be equipped with a boom angle indicator, readily visible to the Operator.
- Cranes with telescoping boom shall be equipped with a device to indicate clearly to the Operator, at all times, the boom's extended length, or an accurate determination of the load radius to be used during the lift shall be made prior to hoisting personnel.
- A positive acting device shall be used which prevents contact between the load block or overhaul ball and the boom tip (i.e. anti-two-blocking device), or a system shall be used which deactivates the hoisting action before damage occurs in the event of a two-blocking situation (i.e. two block damage prevention feature).
- The load line hoist drum shall have a system or device on the power train, other than the load hoist brake, which regulates the lowering rate of speed of the hoist mechanism (i.e. controlled load lowering). Free fall is prohibited.
- The crane shall be level (i.e. within one percent of level grade) and located on firm footing.
- The total weight of the fully loaded personnel platform and related rigging shall not exceed fifty percent of the rated capacity for the radius and configuration of the crane, except during proof load testing.
- The use of machines having live booms (i.e. booms in which lowering is controlled by a brake without aid from other devices which slow the lowering speeds) is prohibited.
- Multiple-part line block: When a multiple-part line block is in use, a substantial strap shall be used between the crane hook and common ring, shackle, or other equivalent device, to eliminate worker exposure to the lines running through the block, and to the block itself.

11.10 Traveling the Crane While Lifting Personnel

- Hoisting of personnel while the crane is traveling is strongly discouraged and requires prior approval of the Marathon Health & Safety Superintendent and the responsible Site Supervisor or their designee. It is prohibited unless a portal, tower or locomotive crane is used and it is demonstrated that there is not a less hazardous way to perform the work. Use of any type of derrick or rubber tired crane for hoisting of personnel while traveling is strictly prohibited.
- Prior to traveling a crane while hoisting personnel, all of the following shall be implemented:
    - Crane travel shall be restricted to a fixed track or runway

- Travel shall be limited to the load radius of the boom used during the lift
- The boom must be parallel to the direction of travel

- A complete trial run shall be performed to test the route of travel before personnel are allowed to occupy the platform. This trial run can be performed at the same time as the trial lift required by Section 11.12.

11.11 Other Work Practices, Situations & Requirements

- Personnel shall keep all parts of their body inside the platform during raising, lowering, and positioning. This provision does not apply to an occupant of the platform when necessary to position the platform or while performing the duties of a Signal Person.
- Platform occupants must not stand, sit on, or work from the top rail, intermediate rail, toe board, or use any other device to enhance their vertical height working capability.
- Platform occupants must not enter or exit a suspended platform while it is raised unless the platform has an installed gate and is physically secured to the structure to which the occupants are entering or exiting, unless it can be demonstrated that securing to the structure would create a greater hazard. Occupants shall communicate with the Crane Operator to confirm when they are entering, leaving, or have secured or unsecured their lanyards to/from the structure. If the platform has been secured to the structure, the Crane Operator must not move the platform until the occupants verify that it is freely suspended. Occupants shall enter and exit from barrel-type platforms only when the platform is in an upright position, stable, and securely attached to the load line. Methods or devices which allow personnel to safely enter or exit barrel- type platforms shall be provided and employed.
- Tag lines shall be used to prevent rotation or swinging of the platform, unless their use creates a greater hazard.
- When working from a personnel platform near live Furnace or Boiler Stack dispersion, air quality monitoring requirements and allowable exposure limits shall be determined in advance, and included in the JHA and Work Permit. If at any time the air quality fails to meet allowable exposure requirements, or occupants experience excessively high or unpredictable ambient temperature fluctuations at the elevated work site, the lift shall be terminated immediately and the Lift Supervisor notified of the unsafe condition.
- When welding is to be accomplished from the personnel platform, suitable electrode holders must be provided to protect them from contact with any conducting components of the platform.
- Personnel lifts over water are discouraged and require prior approval of the Marathon Health & Safety Superintendent or their designee, and the responsible Site Supervisor or their designee. The following requirements apply when personnel lifts are conducted over water:
  - U.S. Coast Guard approved Type I, II, III, or V personnel flotation devices must be worn by all platform occupants.
  - A boat/skiff with appropriate rescue personnel must be readily available at all times during a personnel lift over water.
  - Personnel fall protection devices with quick release features must be provided and required to be worn. The fall protection device must be appropriately attached while personnel are lifted over land and detached while personnel are lifted over water.

- Platform occupants must not stand, sit on, or work from the top rail, intermediate rail, toe board, or use any other device to enhance their vertical height working capability.
- Platform occupants must not pull the platform or Boatswains Chair out of plumb in relation to the crane/derrick.
- Platform occupants must not operate a platform with motion controls without the Platform Operation Manual available in the platform.

11.12 Platform Proof Load Testing, Trial Lift & Subsequent Inspection

- Platform Proof Load Testing: The platform and rigging must be proof load tested at each new lift location before lifting personnel. Proof load testing may be done at the same time as the trial lift required in the subsequent bullet. Proof load test as follows:
  - Test to one hundred twenty-five percent of the platform's rated capacity. Use of a purpose built test weight attached to the platform is the preferred method of loading the platform for testing.
  - The platform must be hoisted, then lowered, and held in a suspended position for a minimum of five minutes with the test load evenly distributed on the platform.
  - After the five minutes suspension the Lift Supervisor and a qualified person must inspect the platform and rigging to determine if the test has passed.
  - Any deficiencies that pose a safety hazard must be corrected and the proof testing repeated until successful prior to lifting personnel.
- Trial Lift: A trial lift with the unoccupied personnel platform loaded at least to the maximum intended load shall be made from ground level, or any other location where personnel will enter the platform, and to each location at which the personnel platform is to be hoisted and positioned. This trial lift shall be performed immediately prior to placing personnel on the platform. The Crane Operator shall determine that all systems, controls, and safety devices are activated and functioning properly, that no interferences exist, and that all configurations necessary to reach those work locations will allow the Operator to remain under the fifty percent limit of the cranes rated capacity. Materials and tools to be used during the actual lift can be loaded in the platform during the trial lift, to the extent allowed per section 11.6 of this procedure. When more than one location will be reached from a single set-up position, either individual trial lifts for each location or a single trial lift in which the platform is moved sequentially to each location may be performed. The method and sequence chosen for the trial lift must be the same as the method and sequence that will be used to hoist the personnel. The trial lift shall be repeated prior to hoisting personnel whenever:
  - The crane is moved and set up in a new location or returned to a previously used location.
  - When a different Crane Operator assumes control of the crane.
  - When the lift route is changed, unless the Crane Operator determines that the route change is not significant (i.e. the route change does not affect the safety of hoisted personnel).
  - When the crane is reconfigured.
- Subsequent Inspection: Immediately after the trial lift, just prior to hoisting personnel, the platform shall be hoisted a few inches and the platform and crane shall inspected by the Lift Supervisor and Crane Operator to determine whether the testing has exposed any defect or produced any adverse effect upon any component or structure. Personnel shall not be hoisted unless the following conditions are determined to exist:

- Hoist ropes shall be free of kinks.
- Multiple part lines shall not be twisted around each other.
- The primary attachment shall be centered over the platform.
- If the load rope has become slack, the hoisting system shall be inspected to ensure all ropes are properly stated on drums and in sheaves.
- Test weight has been removed.
- Platform is secure and properly balanced.
- Crane base support and surrounding ground are stable.
- Any defects found which create a safety hazard have been corrected.

- Recordkeeping: The original, completed Critical Lift Plan shall be retained at the jobsite (i.e. in the Marathon Anacortes Refinery) and produced when requested. A copy of this Critical Lift Plan, the Daily Man Basket Inspection and Lift Preparation Form, and the Daily Man Basket Critical Lift Form shall be retained in the field at the crane used for the duration of the lift (see Attachments 2, 3, and 4). The original or copy of the most recent annual dated inspection records for the crane and the personnel platform must be retained at the jobsite for the duration of the personnel lift operation.

11.13 Pre-Lift Meeting Requirements for Man Basket or Boatswains Chair Lift

After the trial lift and immediately prior to the personnel lift, a Pre-Lift Meeting shall be conducted by the Lift Supervisor at the job site to complete the Work Permit, Job Hazard Analysis, and a review of the written Critical Lift Plan. Participating in the final JHA development will be:

- Responsible Marathon Maintenance or Project Coordinator/Supervisor
- Lift Supervisor
- Responsible Marathon Zone Operations Coordinator/Supervisor
- Marathon Area Safety Specialist
- Responsible Unit Operator(s)
- Crane Operator(s) for the job
- Signal Person(s) for the job
- The Qualified Rigger(s) and all personnel assisting the Rigger(s)
- Tag line person(s)
- Truck Driver/Others assigned to the lifting operation
- Platform or Boatswains Chair occupants

Items discussed and actions taken during the Pre-Lift Meeting shall include:

- A review of elements of the Critical Lift Plan.
- The weight of the load.
- Review of the load chart capacities of the crane configuration.
- Equipment lift radius, the lay down siding, lift routes, sequence of tasks.
- Stoppage of non-essential work.

- Review of task specific safety requirements.
- Identification/designation of who will be the Lift Supervisor, and that this person alone will control overall lift operations (i.e. rigging, crane positioning, lifting, movement, etc.). This designated person shall wear a reflective vest.
- Discussion of contingency plan.
- Review of the lift radius exclusion zone and the method to communicate/demarcate the lifting area (i.e. barricades, flags, horns, visible vest Spotters, etc.).
- Details of designated method(s) of communication to be used during the lift.
- Assignment and responsibilities of each person involved in the lift operation.
- Use of tag lines.
- Work to be accomplished during lift.
- Air quality monitoring, if applicable.
- Proximity of crane boom or cable to Furnace Stacks, if applicable.
- Responsibilities and assignments if working near electrical power lines.
- Any unique considerations of the lift.
- Execute required signatures of agreement at the bottom of the Critical Lift Plan.

11.14 Other Requirements Specific to Boatswain Chair Personnel Lifts

- Personnel lifts involving Boatswains Chairs shall comply with the applicable requirements of this procedure.
- Chair occupants must attach their personal fall protection equipment lanyard independent of the chair attachment, securing it to the lift line above the headache ball.
- Hooks on headache ball assemblies, lower load blocks, or other attachment assemblies must be of a type that can be closed and locked, eliminating the hook throat opening.
- Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.

12.0 TRAINING

12.1 Exemptions to Crane Operator Certification Requirements

WAC 296-155-52900(3) specifically exempts cranes and their Operators used on-site in manufacturing facilities for occasional or routine maintenance and repair work, from the certification requirements of WAC 296-155-52901 Crane Certifier Accreditation and Crane Certification through WAC 296-155-53300 Operator Qualifications and Certification. Since Marathon Anacortes Refinery is a manufacturing facility, this exemption applies to this refinery. However, this exemption is only applied on a limited basis to ensure the larger mobile Marathon cranes and Operators of those cranes are maintained and trained to the highest standard.

Per this exemption and other exemptions listed in WAC 296-155-52900, personnel operating the equipment listed below while performing routine maintenance work on site are not required to be certified Crane Operators:

- Any crane having a maximum rated capacity of 2,000 lbs. or less.

- The Marathon owned Broderson, Mini-Grove and cranes of similar capacity and having limited rotational capability, that are not used with the jib deployed, when used for routine maintenance and repair work. Defined as "Exempt Cranes" in Section 3.0. Note: If these cranes are used with the jib deployed or to perform construction work, they shall not be considered exempt cranes and must be operated by a certified Operator.
- Permanently installed overhead/bridge cranes, wall cranes, jib cranes and others having the same fundamental characteristics.
- Excavators, loaders, backhoes, track loaders. This machinery is also excluded when used with chains, slings or other rigging to lift suspended loads.
- Boom trucks.
- Automotive wreckers and tow trucks when used to clear wrecks and haul vehicles.
- Powered industrial trucks (forklifts), except when configured to hoist and lower by means of a winch or hook and horizontally move a suspended load.
- Mechanic's truck with a hoisting device when used in activities related to equipment maintenance and repair.
- Equipment that hoists by using a come-a-long or chain fall.
- Service cranes with booms that rotate manually.

12.2 Operator – Mobile Cranes Rated Above 2,000 lb. Capacity or Tower Cranes

Persons operating tower cranes, mobile cranes above 2,000 lb. capacity or any crane with a jib deployed shall possess current Crane Operator certifications meeting the requirements of WAC 296-155-53300 Operator Qualifications and Certification. (Information should be periodically audited for contractors during annual reviews with safety.)

Exceptions:

- Marathon employees in training as Mobile Crane Operators, provided the requirements of WAC 296-155-53300 are met.
- Manufacturer's representatives, factory representatives and personnel performing crane maintenance when it is necessary to perform their duties.
- Operators of exempt cranes

Note: Marathon employees shall not train uncertified contractor Operators to operate mobile cranes above 2,000 lb. rated capacity. Marathon employees may assist certified contract Crane Operators in becoming familiar with the operation and maintenance of those Marathon cranes, provided the contractors certifications are for cranes of equal or greater load capacity than the crane they will be operating. Other than during this familiarization period, and when practical, contractors should not operate a Marathon mobile crane until a Marathon Lead Crane Operator reports in writing to the Maintenance Supervisors and the Marathon Mechanical Superintendent or their designee that the contract Operator is competent in operating that specific crane.

12.3 Operator-Exempt Cranes, Mobile Cranes Rated 2,000 lb. Capacity or Less & Operators of any Bridge, Wall, Jib or Other Crane Having the Same Fundamental Characteristics

Prior to operating a crane, each Operator must be trained on and capable of safely operating the type of crane the Operator will be using.

Exceptions:

- Persons in training to operate these cranes.
- Manufacturer's representatives, factory representatives and personnel performing crane maintenance, when it is necessary to perform their duties.

Note: WAC 296-155-54200 Overhead/bridge and gantry cranes – general, stipulates that permanently installed overhead/bridge cranes which are located in a manufacturing facility must follow the requirements of WAC 296-24-235 General safety and health standards, even when a construction activity is being performed. This requirement applies to overhead, bridge, wall cranes, jib cranes and others having the same fundamental characteristics.

12.4 Riggers

Riggers must have received documented training within the last five years that meets Rigger qualification requirements set forth in WAC 296-155- 53306. Documentation of this training must be available on site.

Exception: Per WAC 296-155-53414(7), for operations involving cranes of 2,000 lb. capacity or less, the Rigger is not required to meet the qualification requirements set forth in WAC 296-155-53306. However, Riggers for these cranes must be competent persons with regard to the rigging to be used and be trained in the requirements of WAC 296-155-53400(43), except (43)(iii) which does not apply.

12.5 Signal Persons

Signal Persons must have received documented training within the last five years that meets the Signal Person qualification requirements set forth in WAC 296-155-53302. Documentation of this training must be available on site.

Exception: Per WAC 296-155-53414 (6), For operations involving cranes of 2,000lb capacity or less the Signal Person is not required to meet the qualification requirements set forth in WAC 296-155-53302. However, Signal Persons for these cranes must be trained in the proper use of signals applicable to the crane work involved, and in the requirements of WAC 296- 155-53400 (43), except 43 (iii) which does not apply.

12.6 Crane Assembly/Disassembly Director

No specific certification or training is required for this role; however the A/D Director must be a person who meets the criteria for both a competent person and qualified person, or be a competent person assisted by one or more qualified persons. The A/D Director must understand the applicable assembly/disassembly procedures and possess a high level of familiarity and ensure compliance with requirements of WAC 296-155 Section 53402 Crane assembly/disassembly, Section 53408 Power Line Safety, and Section 56430 Assembly/disassembly – Working under the boom, jib or other components.

12.7 Persons Assisting in Crane Assembly/Disassembly

All persons assisting in crane assembly/disassembly shall be trained by a competent, qualified person in the requirements of WAC 296-155 Section 53402 Crane assembly/disassembly, applicable portions of Section 53408 Power Line Safety, and Section 56430 Assembly/disassembly, working under the boom, jib or other components.

12.8 Persons Entering or Working in the Fall Zone or Swing Radius of a Crane Operation

All persons entering or working in the fall zone or swing radius of a lift while the load is suspended or the crane is operating shall be trained in the requirements of Section 5 of this procedure.

12.9 Fall Protection

Personnel who may be exposed to fall hazards while on or hoisted by cranes/derricks must be trained on all of the following:

- Fall protection requirements applicable to specific job duties described or defined in this procedure.
- The requirements of R-11-033 Fall Protection.

13.0 REVIEW AND REVISION HISTORY

Revision #	Preparer	Date	Description
0	Brady Emmons	3/18/2022	Performed Revision to address Intelex Recommendation No. 265492 & 265486. Revised sections 4.1, 7.9, and 12.2. Changed Approver. Line-by-Line review Reformatted and Numbered SR-10 per Document Control Policy, R-63-001.
1	Brady Emmons	6/28/2022	Updated section 7.8 Safety Devices and Equipment. Added requirement for static grounding strap or grounding chain to be utilized.

14.0 ATTACHMENT 1 – SPECIAL LIFT PLAN FORM SAMPLE (R-11-008-F01)

Marathon Petroleum Company	REFINERY-WIDE	R-11-008-F01
ANACORTES REFINERY	Special Lift Plan Form	Page 1 of 1
		REVISION: 1

Location: _____ Date of Lift(s): _____

Lift Description:

_____

_____

_____

Affected Process Area Equipment/Piping:

_____

_____

_____

Summary of Contingency Plan:

_____

_____

_____

_____

_____

SAMPLE

1.	**Mitigation of Hazards**	☐ Yes	☐ No
a)	Electrical Hazards Identified	☐ Yes	☐ No
b)	Practical Swing Direction & Boom Angle	☐ Yes	☐ No
c)	Flagging Type & Location Identified	☐ Yes	☐ No
d)	Close Tolerance Positioning	☐ Yes	☐ No
e)	Other Unusual Factors	☐ Yes	☐ No
2.	**Crane Check Off**	☐ Yes	☐ No
a)	Crane Daily Inspection Complete	☐ Yes	☐ No
b)	Certified Crane Operator (Crane Specific)	☐ Yes	☐ No
c)	Lift is Below 75% of Crane Capacity	☐ Yes	☐ No
d)	Tag Lines Attached	☐ Yes	☐ No
e)	Wind Conditions Checked _____ MPH	☐ Yes	☐ No

Maintenance/Project Supervisor: _____ Date / /

OPS Coordinator/Supervisor: _____ Date __/__/

Responsible Zone Operator: _____ Date / /

Area Safety Specialist: _____ Date / /

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15.0 ATTACHMENT 2 – CRITICAL LIFT PLAN FORM SAMPLE (R-11-008-F02)

Marathon Petroleum Company LP	REFINERY-WIDE	R-11-008-F02
ANACORTES REFINERY	Critical Lift Plan Form	Page 1 of 2
		REVISION: 1

Location of Lift: _____ Date of Lift(s): _____

Load Description: _____

Lift Description: _____

Source of Load Weight: _____ Verified by: _____

Source of Contingency Plan discussion: _____

Site Supervisor has reviewed lift description

Site Supervisor _____ Date _____

1. Gross Load

a) Load _____ lbs.
b) Weight of Headache Ball _____ lbs.
c) Weight of Block _____ lbs.
d) Weight of Lifting Bar _____ lbs.
e) Weight of Slings/Shackles _____ lbs.
f) Weight of Jib Erected _____ lbs. Stowed _____ Lbs.
g) Weight of Headache Ball of Jib _____ lbs.
h) Height of Cable (Load Fall) _____ lbs.
i) Allowance for Unaccountable _____ lbs.

Total Load: _____ lbs.

SAMPLE

2. Fly/Extension/Jib

a) Erected/Stowed _____
b) Type of Jib _____
c) Length of Jib _____
d) Angle of Jib _____ Degrees
e) Chart-Related Capacity _____ lbs.

3. Wire Rope

a) Parts of Line _____ Ea.
b) Diameter of Cable _____ In.
c) Construction Type _____

4. Support System

a) Compaction Study? ☐Yes ☐No ☐N/A
b) Foundation in Area Verified (explain)
c) Electrical Hazards Verified _____
d) Obstacles of Obstructions During Swing _____
e) Swing Direction and Degree _____
f) Flagging Locations and Type Used _____
g) Checked for Underground Systems and Hazards? ☐ Yes ☐ No

5. Sling Configuration

a) Type of Arrangement
b) Number of Slings in Hook-Up
c) Sling Size

6. Shackle Selection

a) Master Link (SWL)
b) Shackle(s) at Load (SWL)
c) Number of Shackles

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7. Crane Configuration

a) Type of Crane _____ Tons
b) Crane's Gross Capacity _____ Ft.
c) Load Radius _____ Ft.
d) Boom Length _____ Ft.
e) Angle of Boom _____ Degrees
f) Rated Capacity of Crane:
Over Rear _____ Lbs.
Over Front _____ Lbs.
Over Side _____ Lbs.
g) Chart-Rated Capacity for this Lift _____ Lbs.
h) Total Load on Crane _____ Lbs.
i) Lift is _____ % of Crane's Capacity

8. Lift Administration

a)	Matting Acceptable	☐ Yes	☐ No	☐ N/A
b)	Outrigger Fully Extended	☐ Yes	☐ No	☐ N/A
c)	Crane in Good Condition	☐ Yes	☐ No	☐ N/A
d)	Swing Radius is OK and Flagged	☐ Yes	☐ No	☐ N/A
e)	Head Room Checked	☐ Yes	☐ No	☐ N/A
f)	Manufacturer Approved Counterweights	☐ Yes	☐ No	☐ N/A
g)	Attached Diagram Chart	☐ Yes	☐ No	☐ N/A
h)	Tag Lines Attached	☐ Yes	☐ No	☐ N/A
i)	Experienced Operator (Crane Specific)	☐ Yes	☐ No	☐ N/A
j)	Designated Signal Person	☐ Yes	☐ No	☐ N/A
k)	Designated/Authorized* Rigger	☐ Yes	☐ No	☐ N/A
l)	Load Chart in Crane	☐ Yes	☐ No	☐ N/A
m)	Wind Conditions _____ MPH	☐ Yes	☐ No	☐ N/A
n)	Soil Compaction Study	☐ Yes	☐ No	☐ N/A
o)	Certified Rigging	☐ Yes	☐ No	☐ N/A

*Note: All Lifting Lugs must be engineered and approved for this lift, with records on file.

SAMPLE

Lift Company Representative	Date	Lift Supervisor	Date
Safety Specialist/Superintendent			
Responsible Zone Operator(s)	Date	Operations Coordinator/Supervisor	Date
Crane Operator(s)	Date	Signal Person(s)	Date
Rigger 1	Date	Rigger 2	Date

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16.0 ATTACHMENT 3 – DAILY MAN BASKET INSPECTION AND LIFT PREPARATION FORM SAMPLE (R-11-008-F03)

Marathon Petroleum Company LP	REFINERY-WIDE	R-11-008-F03
ANACORTES REFINERY	Daily Man Basket Inspection and Lift Preparation Form	Page 1 of 2
		REVISION: 1

Complete man basket inspection using this form prior to scheduling the lift.

		Yes	No
1.	Basket markings and tags present and legible. Basket inspection is current.	☐	☐
2.	Permanent basket rigging in place, in good condition, rigging inspections current.	☐	☐
3.	Basket suspension shackle pins locked, or nutted, or safety wired as applicable.	☐	☐
4.	Basket load supporting bolts/welds structural members in good condition.	☐	☐
5.	Basket suspension anchorage points in good condition.	☐	☐
6.	Toe boards and barrier from toe boards to mid rail in place and in good condition	☐	☐
7.	Handrails, gate, and gate locking mechanism in place and in good condition.	☐	☐
8.	Fall protection rail, and anchorage point welds in good condition.	☐	☐
9.	Basket flooring intact, no uneven surface or other tripping hazards.	☐	☐
10.	Crane hook has locking mechanism, or safety wire on hand to lock it shut.	☐	☐
11.	Radios and spare batteries available as required, and tested.	☐	☐
12.	Basket occupants know hand signals, or are capable of voice communication.	☐	☐
13.	Tag lines available to control basket, only if required.	☐	☐
14.	Anemometer on hand.	☐	☐

SAMPLE

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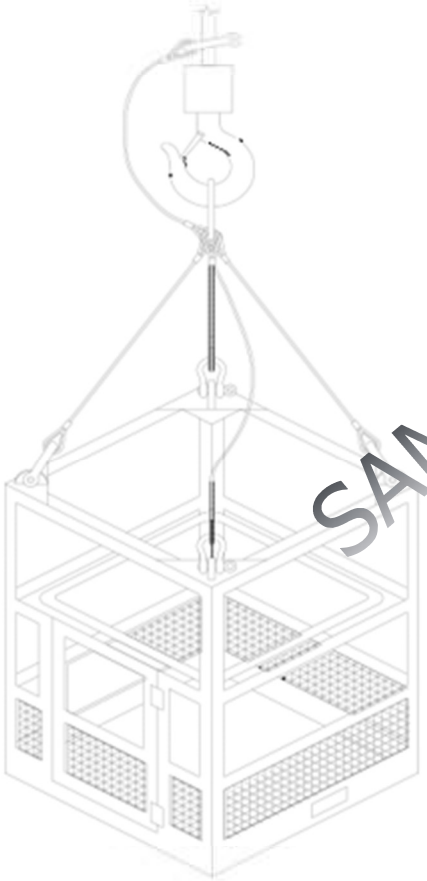
Marathon Petroleum Company LP	REFINERY-WIDE	R-11-008-F03
ANACORTES REFINERY	Daily Man Basket Inspection and Lift Preparation Form	Page 2 of 2
		REVISION: 1



NOTES

1. All shackle pins to be safety-wired closed.
2. Crane hook to have functioning safety latch.
3. Person in man basket to wear safety harness tied off to the man basket.
4. Tag line (not shown) to be installed and manned while basket is in service unless use of a tag line creates an unsafe condition.
5. Competent person to give proper hand signals or use radio to establish communication between operator and personnel in man basket.
6. Area below to be barricaded off.

SAMPLE

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17.0 ATTACHMENT 4 – DAILY MAN BASKET CRITICAL LIFT FORM SAMPLE (R-11-008-F04)

Marathon Petroleum Company	REFINERY-WIDE	R-11-008-F04
ANACORTES REFINERY	Daily Man Basket Critical Lift Form	Page 1 of 1
		REVISION: 1

Complete this form through Step 15 prior to pre-lift meeting

Site Supervisor has reviewed lift description and agrees man basket is best choice for access

Site Supervisor _____ Date

Location: _____ Job No: _____ Insp. Tag Date: _____

Crane No: _____ Model/Type: _____

Length of Boom: _____ Boom Angle: _____ Radius: _____

Name of Persons in Basket:

a. _____ b. _____

c. _____ d. _____

Date on Certificate of Inspection – To Be Annually

1.	Basket No.	_____ Lbs.	_____
2.	Weight of Headache Ball	Lbs.	_____
3.	Total Weight of Occupants, Tools & Equipment	Lbs.	_____
4.	Load Block Weight =	Lbs.	_____
5.	Whip Line Ball Weight =	Lbs.	_____
6.	Working Load Capacity (2)+(3)+(4)+(5) =	Lbs.	_____
7.	Chart Related Capacity at Operating Radius		_____
8.	Maximum Load Capacity (7) (2) =		_____
9.	Is working area for the crane free of power lines?	☐ Yes	☐ No
10.	Crane set up on firm footing and level with outriggers in use, if equipped.	☐ Yes	☐ No
11.	Anti two-blocking device for two block damage prevention	☐ Yes	☐ No
12.	Is safety line provided for basket and attached above Headache Ball	☐ Yes	☐ No
13.	Is platform suspended from crane that has controlled towering capability?	☐ Yes	☐ No
14.	Tag lines provided to control basket, only if required	☐ Yes	☐ No
15.	Area of lift to be properly flagged off for overhead lifts	☐ Yes	☐ No
16.	Proof testing at 125% of rated capacity before lift	☐ Yes	☐ No
17.	Has crane operator's inspection been performed after trial lift	☐ Yes	☐ No
18.	Has backet and all rigging equipment been inspected after trial lift? Hook to be positive locking type and locked?	☐ Yes	☐ No
19.	Weather conditions good. Wind speed 20 mph max at job site. Manbasket to be supplied with hand held wind speed indicator	☐ Yes	☐ No
20.	Radio communications provided if hand signals impossible. Use voice commands.	☐ Yes	☐ No
21.	Safety harness worn by employees inside basket	☐ Yes	☐ No

Summary of contingency plan discussion: _____

Signature of Crane Operator _____

Signature of Lift Supervisor _____ Signature of Safety Inspector _____

Signature of Persons in Basket 1) _____ 2) _____

3) _____ 4) _____

SAMPLE

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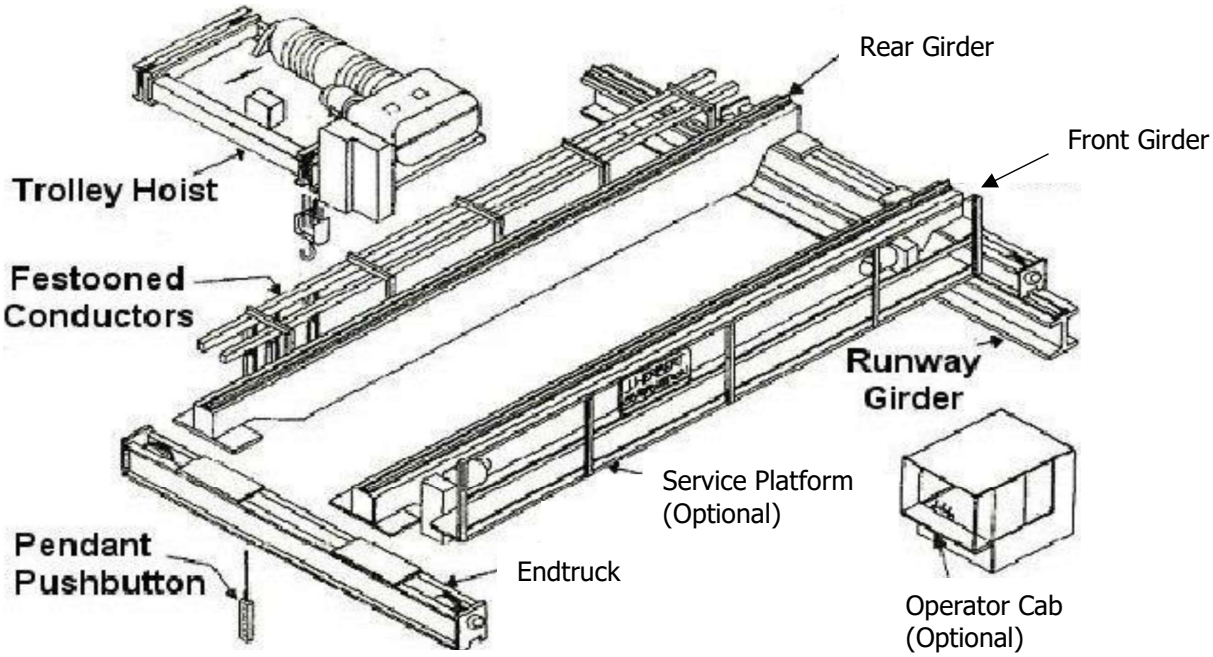
18.0 ATTACHMENT 5 – EXAMPLES OF CRANE TYPES

WALL CRANE

JIB CRANE

OVERHEAD/BRIDGE CRANE



19.0 ATTACHMENT 6 – CRANE HAND SIGNALS