CONTENTS

INTRODUCTION 2
Purpose 2
Scope 2
ROLES AND RESPONSIBILITIES 2
Maintenance Crew Supervisor or MPC Job Rep 2
Crane Lift/ Operator 2
Operations Representative 3
All Employees and Contractors 3
DEFINITIONS 3
PERMIT TYPES OF LIFTS 3
Minor Lift 3
Critical Lift 4
Personnel Platform Lift 4
Aerial Lifts – Scissor and JLG 4
PRACTICES 4
Minor Lift 4
Critical Lifts 5
Personnel Platform Lift 7
Additional Requirements 9
REVIEW AND REVISION HISTORY 10
History of Revisions 10
ATTACHMENT 1 – MINOR LIFT PERMIT 11
ATTACHMENT 2 – CRITICAL LIFT PERMIT 12
ATTACHMENT 3 -- LIFT CHECK LIST 16
ATTACHMENT 4 - SUSPENDED PERSONNEL PLATFORM PRE-LIFT MEETING 17
ATTACHMENT 5 – LIFT PROCEDURE FLOWCHART 20

INTRODUCTION

Purpose

The purpose of this policy is to establish minimum requirements that protect personnel from injury that can occur as a result of a lift inside or outside of battery limits.

Scope

This instruction applies to MPC and Contractor personnel.

This safe work instruction provides specific information in the following areas:

- Any lift that takes place at the refinery using a crane, forklift, backhoe, etc., if it is traversing process piping or any utilities that have the ability to affect process.
- A crane is staged adjacent to battery limits where the lift has potential to impact refinery process units or near utilities such as electrical wires that have the ability to affect the process units.
- Lifts using two cranes and suspended personnel platform lifts.

The instruction does not cover general safety, inspection, and storage procedures for rigging. Rigging activities are performed by trained personnel in the maintenance department.

ROLES AND RESPONSIBILITIES

Maintenance Crew Supervisor or MPC Job Rep

The Maintenance Crew Supervisor or MPC Job Representative (for contracted activities):

Ensures each lift is planned, requirements are communicated, and safe rigging procedures are followed.

Crane Lift/ Operator

The Crane/Lift Operator:

- Assumes ultimate responsibility for the safety of the lift.
- Ensures the crane/lift device is in safe working condition, the load is properly rigged, and weights do not exceed the rated load of rigging equipment.

Operations Representative	The Operations Representative: • Completes lift preplans. • Acts as permit issuer for lift permit. •
All Employees and Contractors	Any person involved with the lift has the obligation to stop the lift if it becomes unsafe.

DEFINITIONS

Lift Stop Criteria	In addition to normal crane operator stop responsibilities there are environmental elements that will stop a lift. These include high winds, lightning, visibility etc.
Process Piping	Process piping includes anything that can affect process such as steam or electrical utility lines.

PERMIT TYPES OF LIFTS

Minor Lift

This permit is required for lifts inside or outside of battery limits that will traverse piping or utilities that have the ability to affect process. The purpose of this permit is to ensure that appropriate safety concerns have been considered and to ensure that Operations has created a preplan should the lift fail. The use of a front-end loader, forklift, etc. is permitted as long as a valid lift permit is in place.

In the event of an emergency or short notice work the crane operator must be given enough time to review the lift and the crane capabilities and be able to verify that the lift can be made safely.

Critical Lift

This permit is required for any of the following lifts that traverse piping or utilities that have the ability to affect process piping and have one or more of the following hazards listed below.

- Multi-crane lifts - A multi-crane lift is a crane lift utilizing two cranes. The use of a front-end loader, forklift, or anything in combination with a crane is not allowed.
- If the lift is equal to or greater than 25 tons. (Except in lay down yards)
- Lifts greater than 80% of the crane capacity.
- When requested by the Operations Manager, Mechanical Manager or the responsible Superintendent or other personnel responsible for the lift.

Note: If a lift is taking place in a laydown yard but meets one of the criteria above it is a critical lift.

Personnel Platform Lift

This permit is used only if conventional means of reaching the worksite would be more hazardous or not possible because of structural design or worksite conditions. Hoisting employees in a personnel platform requires that a pre-lift meeting take place to address the hazards specific to the lift. See Attachment.

Aerial Lifts – Scissor and JLG

No lift permit is required for aerial lifts. All operators must have current training and certification. PTW process must be followed.

PRACTICES

Minor Lift

The intent of the minor lift permit is to cover the entirety of the job associated with that lift. If the crane is required to be moved within the boundary of the job and in accordance with the job scope, then one minor lift permit can be used. If the crane is moved outside of the unit overnight, then a new permit is required.

The MPC Contractor Job Representative or the MPC Maintenance Supervisor:

- Initiates the minor lift permit. This will be dependent upon who is completing the lift.
- Signs the permit indicating that it was initiated and coordinated with operations and the crane operator.
- Notifies the fire department and crane operator in advance of the lift.
- Performs final walk around with crane operator and complete lift checklist.

The Operations Representative:

- Completes a preplan and complying with the Permit conditions.
- Signs the permit indicating that they are aware of the lift and have a pre plan in place.
- Establishes and sets up exclusion zones for nonessential personnel.

The Crane Operator is responsible for:

- Reviews the lift plan and verifying that the lift can be made safely and is a minor lift.
- Signs the permit indicating that they agree with the conditions of the permit.
- Verifies that the rigging is appropriate for the lift.
- Assumes ultimate responsibility for the safety of the lift.
- Verifies the communications between the operator and the signalman is established
- Performs final walk around with MPC Job Rep and complete lift checklist.

Important Note: A walkthrough which includes all of the above personnel must take place immediately prior to starting the lift. All persons involved with the lift are obligated to stop work the lift if it becomes unsafe.

Critical Lifts

The permit for a critical lift requires the following signatures or that of their designees:

- Projects Superintendent or Engineer
- Maintenance/Reliability Manager

- Operations Manager
- Crane Operator
- Safety Department Representative

The MPC Contractor Job Representative or the MPC Maintenance Supervisor:

- Initiates the critical lift permit. This will be dependent upon who is completing the lift.
- Initiates the tailing crane attachment it necessary.
- Signs the permit indicating that it was initiated and coordinated with operations and the crane operator.
- Notifies the fire department, process supervisor, and crane operator in advance of the lift.
- Performs final walk around with crane operator and complete lift checklist.

The Operations Representative:

- Completes a preplan and complying with the PTW conditions.
- Signing the permit indicating that they are aware of the lift and have a pre plan in place.

The Crane Operator:

- Reviews the lift plan and verifying that the lift can be made safely and is a critical lift.
- Verifying that the rigging is appropriate for the lift.
- Signs the permit indicating that they agree with the conditions of the permit.
- Assumes ultimately responsibility for the safety of the lift.
- Verifies the communications between the operator the signalman is established
- Performs final walk around with MPC Job Rep and complete lift checklist.

The MPC Project/Maintenance Manager of designee:

- Develops the lift procedure with input from others in the selection and use of lifting equipment (i.e. spreader bars, cables, slings, shackles, etc.)

- Provides weights, and physical dimensions of the equipment to be lifted;
- Matches lift equipment capacity.
- Provides a plot plan of the facility showing lifting equipment locations and boom travel/swings.
- Ensures that the lift procedure is followed.
- Signs the permit indicating that they agree with the conditions of the permit.
- Accounts for all dead weight attached to the boom in the lift calculation.
- Verifying that the crane operator has ensured adequate ground conditions to support the weight of the crane and load prior to set up.

The MPC Job/Divisional Superintendent:

- Making the final inspection of the prepared lift plan.
- Signing the permit indicating that they agree with the conditions of the permit.

Important Note: A walkthrough which includes all of the above personnel must take place immediately prior to starting the lift. All persons involved with the lift are obligated to stop work the lift if it becomes unsafe.

Personnel Platform Lift

This permit is used only if conventional means of reaching the worksite would be more hazardous or not possible because of structural design or worksite conditions. Hoisting employees in a personnel platform requires that a pre lift meeting take place to address the hazards specific to the lift. The personnel platform shall be used only for employees, their tools and material to complete the job. The pre-lift meeting form is included as an attachment.

The MPC Contractor Job Representative or the MPC Supervisor:

- Initiates the personnel platform lift. This will be dependent upon who is completing the lift.

- Signs the permit indicating that it was initiated and coordinated with operations and the crane operator.
- Notifies the fire department, process supervisor, and crane operator in advance of the lift.
- Schedules the pre-lift meeting.
- Performs final walk around with crane operator and complete lift checklist.

The Operations Representative:

- Completes a preplan and complying with the permit conditions.
- Signs the permit indicating that they are aware of the lift and have a pre plan in place.

The Crane Operator:

- Reviews the lift plan and verifying that the lift can be made safely and is a minor lift.
- Signs the permit indicating that they agree with the conditions of the permit.
- Ultimately responsible to ensure that the conditions of the pre lift meeting are followed.
- Performs final walk around with MPC Job Rep and complete lift checklist.

The MPC employees and contractors that intend to be lifted:

- Attends a pre lift meeting.
- Signs the pre lift meeting agreement indicating that they will comply with the conditions set in the pre-lift meeting.

Refinery Safety personnel:

- Attends the pre-lift meeting.
- Signs the pre lift meeting agreement.

Additional Requirements

- Verify ground/ pad is sufficient to support crane and load weight. Matting shall be utilized under the outrigger floats to spread the load to a larger bearing surface where practical. Crane matting configuration must provide enough surface area to achieve soil or pad loading below allowable ground bearing pressure for surface.

- A review by an additional crane operator is required for all Minor Lifts. The second crane operator performing the review will sign the Minor Lift Form, Attachment 1, in the designated space.
- Hazardous conditions regarding fixed lifting equipment include, but not limited to, the following; improper or inadequate maintenance, overloading, dropping or slipping of the load, obstructing the free passage of the load, and using fixed lifting equipment for a purpose for which it was not intended or designed. Fixed lifting equipment shall meet the requirements of all industry codes, standards and design specifications.
- Appropriate rigging material and configuration shall be used on all lifts.
    - When rigging the load, the configuration shall be in accordance with manufacturer's specifications.
    - All rigging shall be inspected in accordance with HSE-SWI-040, Safe Rigging.
- Attachment 3 shall be completed prior to all lifts.

REVIEW AND REVISION HISTORY

History of Revisions

The Table below provides the revision history for this Safety Instruction.

Revision	Date	Change Author	Reason for Change
1.0	12/30/1993	---	Original Issue
1.0	01/15/2003	---	Review only
1.0	02/11/2004	---	Review only
1.0	01/12/2005	---	Review only
2.0	01/12/2006	---	Revised
3.0	12/15/2009	---	Revised
4.0	02/17/2010	---	Revised
5.0	11/02/2010	---	Revised
6.0	1/25/2011	---	Revised
7.0	10/24/2012	---	Revised
8.0	3/28/13	---	Revised
9.0	2/3/2016	Anne Alder	PSM audit finding—added lift restrictions
10.0	11/6/19	Sam Streacker	Updated with Recs. from INC# 25857
11.0	8/28/20	Tyson Martin	Updated headers to match Marathon format. Replaced Marathon/Marathon words with Marathon. Updated Attachment #3 to include Stabilizer in Crane column and Crane operator and MPC Foreman/Supervisor signatures.

ATTACHMENT 1 – MINOR LIFT PERMIT

Lift Plan Initiated By:							
Job Name:					**Lift Date:**		
Type of Lift Equipment:							
Crane Manufacturer:				**Crane Rating:**			
Description of Lift:							
1	**Crane Operating Radius**				**ft.**		
2	**Crane Outrigger Ground Pressure**				**PSF**		
3	**Crane Rated Capacity (From Load Charts)**				**lbs.**		
4	**Crane Lifting Accessories Deductions (i.e. jib, fly, blocks, etc.)**				**lbs.**		
5	**Equipment Weight**				**lbs.**		
6	**Rigging Weight**				**lbs.**		
7	**Total Weight on Crane (Line 5 + Line 6) + Line 4**				**lbs.**		
8	**Percent of Crane Capacity (Line 7 ÷ Line 3) x 100**				**%**		
9	**Rigging inspected per HSE-SWI-040 requirements**				**Inspector Initials**		
10	**Slings**						
	Configuration	**Capacity**		**Applied Load**		**% Used Capacity**	
a)			**lbs.**		**lbs.**		**%**
b)			**lbs.**		**lbs.**		**%**
11	**Shackles**						
	Configuration	**Capacity**		**Applied Load**		**% Used Capacity**	
a)			**lbs.**		**lbs.**		**%**
12	**Miscellaneous Lifting Devices**						
	Configuration	**Capacity**		**Applied Load**		**% Used Capacity**	
a)			**lbs.**		**lbs.**		**%**

Lift Assessment Meeting: By signing this form, the following individuals are indicating they have actively participated in the pre-lift safety meeting for the lift in question and fully understand the scope of the lift to be made and their assigned roles and responsibilities.

Certified Operator#1:

Print *Signature* *Date*

Qualified Rigger:

Print *Signature* *Date*

Foreman / Supervisor:

Print *Signature* *Date*

Certified Operator #2:
(Addt'l Verification)

Print *Signature* *Date*

Qualified Signalman:
(If Applicable)

Print *Signature* *Date*

ATTACHMENT 2 – CRITICAL LIFT PERMIT

CRITICAL LIFT

(Note: use separate sheets if additional space is required)

Unit _____Job Description _____

_____

Anticipated Start Date: _____ Anticipated Completion Date:_____

☐ Operating contingency plan in place ☐ Emergency Response Coordinator or Fire Chief notified

Crane Size & Manufacturer: _____Capacity: _____Boom Length: _____

NAME & EQUIPMENT NO.	SIZE	LENGTH	LOAD RATING/ CHART CAPACITY	WEIGHT
MAIN HOIST BLOCK				
SECONDARY BLOCK OR BALL				
SLINGS				
SHACKLES				
SPREADER BEAM				
LOAD LINE				
JIB SECTION				
			RIGGING WEIGHT:	
			EQUIPMENT WEIGHT:	
			TOTAL LIFT WEIGHT:	

Note: *Vendor's chart showing capacity for different angles and sling configurations, type of wire rope and loop splice, must be attached to this procedure)*

LIFT COMPUTATION

Boom Length: _____ Lift Radius: _____
Crane Capacity at load radius: _____
Total Lift Weight: _____
% of Rated Capacity: _____

Note: Plot plan showing location and orientation of crane must be attached to this procedure

MATT SIZE

Beneath each fully extended outrigger: _____
Soil Bearing Pressure KSF: Calculate: _____
Allowable: _____

LIFT HEIGHT: _____

Note: Elevation sketch showing height relation to crane and obstacles must be attached to this procedure.

MAX. EQUIP SURFACE AREA: _____ *(Maximum-Subject to cross wind)*

LIFT ORIENTATION:

Initial orientation of lift relative to machine (check one)

☐ FRONT ☐ SIDE ☐ REAR

Swing orientation of lift relative to machine (check one)

☐ FRONT ☐ SIDE ☐ REAR

Will the vessel(s) rotate in the sling(s)?

☐ YES ☐ **NO**

LIFT PROCEDURE:

Describe in detail how the load will be lifted. Indicate the rigging location relative to vessel/object. Use separate sheet if necessary.

☐ *See attached Tailing Crane Procedure.*

PROCEDURE PREPARED BY:

Contractor Job Representative/MPC Supervisor	Operations Representative Signature
MPC Department Engineer	MPC Job Supervisor

APPROVAL SIGNATURES (The following must sign):

1. Projects Manager or Engineer _____
2. Maintenance Superintendent _____
3. Maintenance Manager _____
4. Operations Manager _____
5. Safety Department Representative _____
6. Crane Operator _____

<u>Special Note:</u> The Process Supervisor and Fire Department are to be notified prior to the lift. (Two days notice is recommended.) Prior to lift, MPC job superintendent to make final inspection. All dead weight attached to boom (e.g. job) must be accounted for. Ensure that the crane operator has verified adequate ground conditions to support the weight of the crane and the load prior to set up.

MPC and Contractor

TAILING CRANE

NOTE: Use this form and the lift procedure form when using a tailing crane.

Crane Size & Manuf. _____Capacity: _____Boom Length: _____

NAME & EQUIPMENT NO.	SIZE	LENGTH	LOAD RATING/ CHART CAPACITY	WEIGHT
MAIN HOIST BLOCK				
SECONDARY BLOCK OR BALL				
SLINGS				
SHACKLES				
SPREADER BEAM				
LOAD LINE				
JIB SECTION				
			RIGGING WEIGHT:	
			EQUIPMENT WEIGHT:	
			TOTAL LIFT WEIGHT:	

Note: *Vendor's chart showing capacity for different angles and sling configurations, type of wire rope and loop splice, Attached?)*

LIFT COMPUTATION

Boom Length: _____Lift Radius: _____
Crane Capacity at load radius: _____
Total Lift Weight: _____
% of Rated Capacity: _____

Note: Plot plan showing location and orientation of crane, Attached?

MATT SIZE

Beneath each fully extended outrigger: _____
Soil Bearing Pressure KSF: Calculate: _____
Allowable: _____

LIFT HEIGHT: _____

Note: Elevation sketch showing height relation to crane and obstacles, Attached?

MAX. EQUIP SURFACE AREA: _____
(Maximum-Subject to cross wind)

TAILING CRANE PROCEDURE 1 of 2
LIFT ORIENTATION:

Initial orientation of lift relative to machine (check one)
□ FRONT □ SIDE □ REAR

Swing orientation of lift relative to machine (check one)
□ FRONT □ SIDE □ REAR

LIFT PROCEDURE:
Describe in detail how the load will be lifted. Show rigging location relative to vessel/object and primary crane. Use separate sheet if necessary.

Tailing Procedure prepared by: _____

TAILING CRANE PROCEDURE 2 of 2

ATTACHMENT 3 -- LIFT CHECK LIST

Using this checklist, the MPC Maintenance Superintendent or designee and the Crane Operator must complete a final walk around prior to the lift and complete form.

	OK		OK		OK
CRANE		**RIGGING**		**SET-UP**	
Crane Type & Size		Shackle Size		Lift Radius:	
Boom Length		Sling Size & Number		Verify Mat Calculation	
Outriggers, Stabilizers, Counterweights Fully Extended		Lowering of Lifts Under Geared Control (Chain fall and etc.)		Wind Speed	
Boom & Block Condition		Angle Between Sling and Vertical is not Greater than 30^{deg}		Fire Dept. Notified	
Cable Condition		All Sling Legs Taut Upon Initial Lift		Unit Contingency, Planning in Place	
Operator Qualification Verified		Vehicle Entry		Sewers covered	
Derails and Blue Flags in place		Other:			

COMMENTS: _____

_____

_____

_____

_____

Signatures

Crane Operator _____ Date: _____

MPC Maintenance/Project Foreman/Supervisor: _____ Date: _____

ATTACHMENT 4 - SUSPENDED PERSONNEL PLATFORM PRE-LIFT MEETING

1. GENERAL REQUIREMENTS

Would conventional means of reaching the worksite be more hazardous or not possible because of structural design or worksite conditions than hoisting employees in a personnel platform? □ YES

___

Maintenance Supervisor Signature

ALL EMPLOYEES WHO INTEND TO BE LIFTED, THE JOB SUPERVISOR, A SAFETY DEPARTMENT REPRESENTATIVE AND THE CRANE OPERATOR SHALL ATTEND THE PRE-LIFT MEETING. ADDITIONAL PARTICIPANTS MAY ALSO ATTEND WHERE APPLICABLE.

2. CRANES

A. OPERATIONAL CRITERIA:

___ 1. Hoisting shall be performed in a slow, controlled, cautious manner.

___ 2. Load lines shall be capable of supporting at least seven (7) times maximum intended load. For rotation resistant rope, load lines shall be capable of supporting ten (10) times maximum intended load.

___ 3. Load and boom hoist drum brakes, swing brakes and locking devises such as pawls or dogs shall be engaged when the occupied personnel platform is in a stationary working position.

___ 4. 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. FREE FALL IS PROHIBITED

___ 5. Crane shall be level within one percent of grade and on firm footing. Cranes equipped with outriggers shall have them fully extended.

___ 6. Total weight of loaded personnel platform and rigging shall not exceed 50 percent of rated capacity for radius and configuration of the crane. or derrick.

___ 7. Use of machines having live booms is prohibited.

___ 8. Only persons required to do the work may ride in the man-basket

B. INSTRUMENTS AND COMPONENTS:

___ 1. Cranes with variable angle booms shall be equipped with a boom angle indicator visible to the operator.

___ 2. Cranes with telescoping booms shall be equipped with a device to indicate the boom's extended length, or an accurate determination of the load radius shall be made prior to hoisting personnel.

___ 3. A positive acting device, such as an anti-two-blocking device, shall be used which prevents contact between the load block or overhaul ball and boom tip, or a system shall be used which deactivates the hoisting action, before damage occurs.

____ 4. Hooks on overhaul ball assemblies or load blocks used for personnel lifting shall be of the type that have a safety latch can be closed and locked.

C. PLATFORM SPECIFICATIONS:

___ 1. Employees shall be protected by overhead protection when exposed to falling objects.

D. PERSONNEL PLATFORM LOADING:

1. The personnel platform itself shall be capable of supporting, without failure, its own weight and at least five times the maximum intended load.
   Each personnel platform shall be equipped with a guardrail system which meets the requirements of CFR 1926.550 subpart M, and shall be enclosed at least from the toe board to the mid-rail with either solid construction or expanded metal having openings no greater than 1/2 inch.

___ 2. Personnel platform shall be used only for employees, their tools and material to do their work, and shall not be used to hoist only materials or tools when not hoisting personnel.

___ 3. Materials and tools shall be secured to prevent displacement.

___ 4. Materials and tools shall be evenly distributed within the platform.

SUSPENDED PLATFORM PRE-LIFT 1 of 2

E. RIGGING:

___ 1. Rigging associated with the platform shall not be used for any other purpose.

F. TRIAL LIFT, INSPECTION AND PROOF-TESTING:

___ 1. A trial lift to each location where platform is to be hoisted with at least the anticipated lift weight. The trial lift shall be performed immediately prior to placing personnel on the platform.

___ 2. Trial lift shall be repeated whenever the crane is moved and set-up in a different location or after any modifications to any part of the lift or crane.

___ 3. After trial lift and just prior to hoisting personnel, the platform shall be hoisted a few inches and inspected to insure that it is secure and properly balanced.
- Hoist ropes free of kinks.
- Multiple part lines not twisted.
- Primary attachment centered over platform.
- Inspect hoisting system if load rope is slack.
- Visually inspect crane, rigging, personnel platform and base support or ground.
- Proof-test platform and rigging to 125 percent of platforms maximum intended load in a suspended position for five minutes if any repairs or modifications are made to the platform. The platform shall be inspected per paragraph 3, a to e, above.

A. WORK PRACTICES:

Personnel platform should not be used in winds in excess of 15 mph, electric storms, snow, ice, sleet, or other adverse weather conditions which could affect the safety of personnel.

___ 1. Employees shall keep all parts of their body inside the platform during hoisting.

___ 2. Before employees exit or enter a platform that is not landed, platform shall be secured to the structure; unless securing creates an unsafe situation.

___ 3. Tag lines shall be used unless their use creates an unsafe condition.

____ 4. The crane operator shall remain at the controls at all times when the engine is running and platform is occupied.

____ 5. Hoisting of employees shall be promptly discontinued upon indication of any dangerous weather conditions or other impending danger.

____ 6. Employees being hoisted shall remain in continuous sight of and in direct communication with operator or signal person. Where direct visual contact with the operator is not possible and use of a signal person would create a greater hazard, direct communication may be used.

____ 7. Employees occupying the platform shall remain tied-off during hoisting or while suspended.

____ 8. No lifts shall be made on another of the crane's load lines while personnel are suspended on a platform.

H. TRAVELING:

____ 1. Hoisting of employees while the crane is traveling is prohibited except where employer demonstrates that there is no less hazardous way to perform the work.

____ 2. Under circumstances where a crane would travel while hoisting personnel, refer to 1926.550.

PRE-LIFT MEETING ATTENDANCE: **DATE:**

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

ATTACHMENT 5 – LIFT PROCEDURE FLOWCHART