

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Table of Contents

1.	Introduction to the Lift Planning, Cranes, and Rigging Standard	3
2.	Lift Planning Requirements	4
3.	Lift Execution Requirements	7
4.	Cranes, Rigging, and Personnel Basket General Requirements	11
5.	Inspection, Testing, and Maintenance Requirements	13
6.	Roles and Responsibilities	15
7.	Definitions and Acronyms	15
8.	Reference Information	15
8.1	Applicable Regulations, Standards, and Codes	15
8.2	Reference Documents	15
9.	Interpreting and Revising this Standard	16
10.	Appendices	16
	Appendix A: Lift Planning and Authorization Forms and Checklists	A – 1
	Appendix B: Pre-Use Inspection Checklist for Hoisting Equipment	B – 1
	Appendix C: Pre-Use Inspection Checklist for Rigging Equipment & Devices	C – 1
	Appendix D: Roles and Responsibilities	D – 1
	Appendix E: Acronyms and Definitions	E – 1
	Appendix F: Sample List of Hoisting and Rigging Equipment	F – 1

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

1. Introduction to the Lift Planning, Cranes, and Rigging Standard

Purpose	<p>The purpose of this Standard is to:</p> <ul style="list-style-type: none"> • Provide Husky’s minimum requirements for lift planning, use and safe operations of cranes, hoisting, and rigging equipment • Ensure that lifting and rigging activities identifies and controls risks to people, equipment, process, and environment
Scope	<p>The scope of this Standard includes:</p> <ul style="list-style-type: none"> • Husky locations that employ hoisting equipment either temporarily or permanently excluding Husky Atlantic Region and Asia Pacific facilities • Selection, operation, inspection, testing and maintenance of rigging and hoisting equipment listed in Appendix F
Intended Users	<p>The intended users of this Standard include:</p> <ul style="list-style-type: none"> • Husky Operation, Maintenance, Construction, and Project personnel • Approved vendors conducting work at a Husky site • Husky and/or vendor personnel identified in Appendix D
Usage Requirement	<ol style="list-style-type: none"> 1. It is required that this Standard be used in conjunction with applicable: <ul style="list-style-type: none"> • Husky HSE policies, standards, and procedures • Equipment/device manufacturer’s specifications • Jurisdictional legislation and industry practices, codes, standards, policies and procedures 2. It is required that this Standard be used to form part of cranes, rigging, hauling and lifting contracts and be included in: <ul style="list-style-type: none"> • Purchase Orders (PO) • Scope of Work (SOW) • Request for Proposal (RFP) • Service Contracts to Service Providers
Deviation from this Standard	<p>The owner of this Standard – Director of Construction Management – shall approve deviations from this Standard.</p>

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

2. Lift Planning Requirements

Categorize the Lift The lift shall be categorized into one of the three categories below:

- Standard Lift
- Serious Lift
- Critical Lift

Lift Categorization Table The lift categorization table is presented below:

Table 1: Lift Categorization Table

Condition	Standard*	Serious*	Critical
Less than 80% of ONE hoisting equipment capacity	✓		
Four pick points or less on any hoisting equipment required for the lift	✓		
TWO or more hoisting equipment AND less than 75% of each hoisting equipment capacity		✓	
Occurs over live process equipment/piping and/or near energized electrical power lines or other energized electrical equipment and transmitters		✓	
Greater than 80% of ONE hoisting equipment capacity			✓
TWO or more hoisting equipment AND more than 75% of each hoisting equipment capacity			✓
More than four pick points on the load required for the lift			✓
Requires complex upending or rolling or inverting of load, or load equalization arrangements			✓
Requires specialized hoisting equipment such as: <ul style="list-style-type: none"> - Derrick Cranes - SPMTs - Strand Jacks 			✓

** These lift categories can be elevated if deemed necessary by the person-in-charge of the lift, in consultation with the Hoisting Equipment Operator, and written approval by Husky.*

- Determine the Load Weight**
- Determine the exact or approximate (within 10% of actual) weight of load
- Develop Written Lift Plan**
- Develop a written lift plan, based on the lift category (including personnel basket lifts) as shown in Table 1, by completing the lift plan and checklist forms presented in

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

[Appendix A](#) (or Husky-approved equivalent lift plan).

- A daily lift plan can be developed for similar or repetitive lifts and lifts involving picker trucks with capacity of 25 Tons or less



CAUTION: Do not exceed 90% of hoisting equipment capacity. Exceeding 90% of hoisting equipment capacity could result in equipment failure.

Standard Lift Plan

As a minimum, a competent Hoisting Equipment Operator shall prepare the standard lift plan. The Husky Site Representative shall review the plan prior to execution. As a minimum, the lift plan shall contain pertinent information about the:

- Hoisting equipment (including type, manufacturer, capacity, safe working load, maximum operating radius)
- Rigging components (including type and weight of rigging)
- Load to be lifted (including weight of the load)
- Lift location and personnel required for the lift

Serious Lift Plan

As a minimum, a competent Lift Supervisor / Coordinator shall prepare the serious lift plan. The Husky Site Representative shall review the plan prior to execution. As a minimum, the lift plan shall contain pertinent information about the:

- Hoisting equipment (including type, manufacturer, capacity, safe working load, maximum operating radius)
- Rigging components (including type, weight, and capacity of rigging)
- Load to be lifted (including CoG, weight, and dimension)
- Work location, environmental condition, and personnel required for the lifting operations

Critical Lift Plan

A professional engineer shall prepare and authenticate the critical lift plan. Competent Husky personnel shall review the plan. As a minimum, the lift plan shall contain pertinent information about the:

- The procedure to follow to safely execute the lift
- All applicable hoisting equipment, rigging (and auxiliary equipment) and load information
- Hoisting equipment and load initial and final positions
- The load radius, boom length and angle

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

- Travel path of the load and hoisting equipment
- Proximity of operational and/or critical equipment to the hoisting operation area
- Ground bearing pressures information
- If applicable, configuration of mats or other means to provide sufficient bearing capacity
- Other notes applicable to the hoisting operation (including weather and ground / soil requirements)
- Rigging hardware required (type, quantity, capacity, etc.)
- Exact pick points, sling angles, any special procedures involved, and notes
- If applicable, requirement for specialized equipment for lifting specific types of loads, e.g. spreader beams for unbalanced loads, plate or reel-handling equipment, SPMTs, Jacks, Jack and Roll / Slide equipment, and CPTs

Ensure Adequate Ground Bearing Capacity

Ensure adequate ground bearing capacity through the:

- Use of ground/soil preparation techniques for the travel path and lift locations
- Identification of underground utilities and services locations and ensuring they are protected against damage. An example of protection includes addition of hoisting equipment mats

Personnel Basket Lift Planning

Personnel basket lift planning shall also include:

- A competent Lift Supervisor / Coordinator shall complete the Personnel Basket Use Plan and Checklist Form presented in [Appendix A4](#).



CAUTION: Do not load personnel basket beyond 80% of its capacity. Exceeding 80% of personnel basket capacity could result in basket failure.



CAUTION: Personnel lifts shall not exceed 50% of hoisting equipment capacity.

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

3. Lift Execution Requirements

Inspect Lifting and Rigging Equipment

The lifting and rigging equipment shall be visually inspected prior to use

Hold Pre-lift Meeting and Safe Work Permit

Obtain a safe work permit and hold a pre-lift meeting before executing a lift. Other activities include:

- Identify roles and responsibilities of personnel involved in the lift as described in [Appendix D](#)
- Complete hazard assessment and control for the entire lifting operation. This can be in the form of Job Safety Analysis (JSA), Job Hazard Assessment (JHA), Field Level Risk Assessment (FLRA), or other equivalent
- Allow only competent Hoisting Equipment Operator, trained to use that specific equipment, to operate the hoisting equipment.
- Designate a lead signaller when more than one signaller is required. The signaller(s) must be readily identifiable by some means (e.g. high visibility gauntlet).
- Establish a secure method of communication between the Hoisting Equipment Operator and designated personnel.
- Review and adhere to the Husky site emergency response / fall protection / high angle rescue plan for personnel basket lifts.

Barricade the Lift Area

- Barricade the areas around the hoisting equipment with clearly visible warning signs.
- Ensure adequate clearance (minimum of 0.61 meter) between the hoisting equipment's swing radius and nearby equipment and structures during operations. Elevate the lift category if this prescribed minimum clearance is not possible
- Do not place the hoisting equipment (except Side Boom Tractor) closer than 2 meters to the edge of a slope or excavation

Conduct Trial Lift for Personnel Basket Use

- Conduct a trial lift prior to using the personnel basket. Calculate the maximum anticipated load and, where possible, load the unoccupied personnel basket to at least the maximum anticipated load.
- Complete the trial lift from the location where personnel

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

will enter the personnel basket to the final work location.

Identify Need for Load Control

- Ensure the hoisting equipment hook is equipped with a positive locking safety latch.
- Identify the need for load control using non-conductive taglines and ensure that the load is under control throughout the lifting operation. Correct out of plumb conditions as needed.
- Use softeners between the sling and sharp edges of loads. The softeners shall remain in place after the load has been initially lifted

Weather Considerations

- Unless otherwise recommended by the manufacturer, do not use cranes and hoisting equipment if wind speed/gust is greater than 32 km/h (20 mph). If suspension of activities occurs, land and secure the loads, and secure and stow the hoisting equipment.
- Do not use personnel baskets in winds greater than 20km/h (12mph).
- Do not use personnel baskets in electric storms, snow, ice, sleet, or other adverse weather conditions that could affect the safety of the personnel.
- During heavy snow or ice conditions, monitor the hoisting equipment sheaves and suspend operations if there is buildup of sleet.
- Take precautions to prevent cold weather-related failure of hydraulic hoisting equipment components.
- Follow manufacturer and site-specific guidelines for lift execution in lightning and thunderstorm conditions. Thoroughly inspect hoisting equipment struck by lightning before returning to service

Energized Electrical Equipment

Lifts near uninsulated energized electrical equipment and power lines shall adhere to the following requirements:

- If possible, de-energize, lockout and visibly ground the electrical equipment or line, or
- Relocate / re-route the electrical equipment or lines, or
- Erect or install insulating barrier and devices to prevent physical contact with the hazard
- If the above is not possible, maintain minimum clearance from the line or equipment as shown in Table 2 below:

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Table 2: Required Minimum Clearance from Power Lines

Phase to Phase Voltage	Required Minimum Clearance in ft. (m)
Up to 50 kV	10 (3.1)
50 to 200 kV	15 (4.6)
200 to 350 kV	20 (6.2)
350 to 500 kV	25 (7.6)
500 to 750 kV	35 (10.7)
750 kV and above	45 (13.7)



WARNING: Failure to maintain the minimum required clearance could result in serious injury or fatality.

Requirements During Lift Execution

The following are general requirements that shall be adhered to during lift execution:

- Perform a single hoisting equipment function or activity at a time.
- Ensure that the Hoisting Equipment Operator is at the controls of the hoisting equipment whenever the equipment is in operation, including in partial lift position.
- Ensure pedestrian and vehicle access and control.
- Prevent personnel from entering the hoisting equipment swing zone during operation.
- Adhere to the lift plan. Develop a new lift plan if lift conditions change.
- Avoid “walking” the hoisting equipment with suspended load unless otherwise specified by the manufacturer.
- Attach tag lines directly to the load. Never loop tag lines around body parts.
- At no time may personnel stand or reach under a load. Do not lift load over personnel.

Personnel Basket Requirements During Lift Execution

The following are general personnel basket requirements that shall be adhered to during lift execution:

- Ensure the personnel in the basket remain in continuous sight of, and in direct communication with, the operator and / or signaler.

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Requirements for Safety and Control Devices

- Allow only the exact number of personnel, their tools, and sufficient materials to occupy the personnel basket. Do not use the basket for transporting bulk materials.
- Use additional overhead protection (in addition to PPE) when overhead hazard is present.
- Ensure that the personnel in the basket keep all body parts inside the suspended personnel basket to avoid pinch points.
- Ensure the hoisting equipment hook is equipped with a positive locking safety latch.
- Ensure that personnel wear approved full body harnesses with lanyards equipped with a shock absorber or similar device attached to the lower load block or overhaul ball, or to a structural member within the personnel basket that can support a fall impact.
- Ensure that the hoisting equipment does not travel while personnel are in the personnel basket unless the travel requirement was included in the trial lift.
- Ensure that the hoisting equipment’s safety, control, and operational mechanisms (such as boom/jib stops, anti-two block devices, weight indicators, and load limiting devices) are functional prior to use in accordance with the manufacturer’s specifications.
- Avoid overriding or bypassing the hoisting equipment’s safety and control mechanisms unless:
 - In an emergency and/or when the hoisting equipment stability needs to be secured. The person-in-charge of the lift shall submit an incident report to the Husky Site Representative whenever this occurs.
 - Required as part of inspection, testing, maintenance, assembly, and dismantling of the hoisting equipment.

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

4. Cranes, Rigging, and Personnel Basket General Requirements

General Cranes and Rigging Requirements

Cranes and rigging equipment shall adhere to the following general requirements:

- Cranes and rigging equipment and devices to legibly show the:
 - Manufacturer's name and trademark
 - Rated and maximum capacity
 - Other information required by industry and jurisdictional codes and standards
- Wire rope, alloy steel chain, metal mesh, synthetic fibre rope and synthetic fibre web slings selected for use shall meet the requirements of ASME B30.9, unless required otherwise by jurisdictional codes and standards.
- When turnbuckles are used at load angles other than 90 degrees, the safe load rating shall be reduced per the manufacturer's specifications
- Use only shouldered eyebolts for rigging hardware if load configuration permits. Where non-shouldered eyebolts are required, they shall only be used in vertical pulls or in rigging systems that are designed and approved by competent personnel
- Synthetic Spreader bars and other specialized below the hook lifting devices must be constructed, inspected, installed, tested, maintained and operated according to the requirements of ASME B30.20, Below the hook lifting devices
- Custom made below-the-hook lifting devices or spreader bars shall be approved by a professional engineer prior to use

General Personnel Basket Requirements

Personnel basket shall adhere to the following general requirements:

- The weight and rated safe working load shall be legibly marked on the personnel basket.
- The personnel basket shall have a grab rail, with a locking gate that does not swing outward to minimize hand exposure.

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

General Suspension System Requirements

Do Not Use



- Access gates, including sliding or folding types, if installed, shall have a positive acting device to restrain the gate from accidental opening.
- Rough edges exposed to contact by personnel shall be surfaced (ground smooth) to prevent injury.
- The suspension system including wire rope, shackles, and other rigging hardware shall can support, without failure, at least five times the maximum intended load applied or transmitted to that component.
- Sling suspension systems shall utilize a master link or safety type shackle to connect the personnel basket to the load block and to ensure even distribution of the load among the suspension system legs.
- Shackles used in any part of the suspension system shall be a safety type (bolt-type shackle with nut and cotter pin).
- Wire ropes that contain six or more randomly-distributed wires that are broken in one rope lay, or three or more wires that are broken in one strand in a rope lay
- Wire ropes that are worn by more than one-third of the original diameter of the wire rope’s outside individual wires
- Slings that show evidence of kinking, bird-caging, corrosion or other damage resulting in distortion of the sling structure, or may result in sling failure
- Proof coil and transport chain for rigging and lifting
- Do not use the sling suspension system attaching the personnel basket to the hoist line for any other purpose when not hoisting personnel.
- Do not use synthetic webbing, natural or synthetic fiber rope, wire rope clips, wedge sockets, or knots in the sling assembly of suspension systems.

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

5. Inspection, Testing, and Maintenance Requirements

Inspection Requirements

Inspection of hoisting, rigging, and personnel basket equipment shall adhere to the following:

- Be inspected upon receiving at the Husky site, completion of maintenance work, and visually inspected prior to each use.
- Complete periodic and annual inspections per the manufacturer’s specification in conjunction with the requirements of the applicable ASME B30 Standard.
- Visually inspect the personnel basket for defect. A professional engineer shall certify any repairs or alterations to the personnel basket prior to use.
- Keep dated record of periodic and annual inspections and ensure records are available.
- Refer to [Appendix B](#) and [Appendix C](#) for inspection checklists.

Testing Requirements

Testing of hoisting, rigging, and personnel basket equipment shall adhere to the following:

- Complete periodic testing per the manufacturer’s specification in conjunction with the requirements of the applicable ASME B30 Standard.
- If not specified by the equipment manufacturer, use the expected normal operating load as the minimum test load and never exceed 110% of the hoisting equipment capacity.
- Pull testing of slings and other rigging hardware shall adhere to manufacturer’s specifications and jurisdictional codes and standards. In addition, new slings shall be pull-tested by the manufacturer prior to use.
- The personnel basket, rigging, and hook block, shall be proof tested by a competent inspector to 125% of the personnel platform’s capacity and deficiencies corrected. Certificate of inspection and testing shall be available upon request by Husky.
- Keep dated record of tests in the hoisting equipment logbook and, where applicable, signed off by competent

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

personnel. Ensure records are available upon request by Husky.

Maintenance Requirements

Maintenance requirements of hoisting, rigging, and personnel basket equipment include the following:

- Subject hoisting, rigging, and personnel basket equipment to a preventive maintenance program in accordance with the manufacturer’s specifications and applicable codes and standards
- Take the equipment out of service for repair or replacement, if found to have defect or unsafe to use. The original equipment manufacturer or a professional engineer shall certify any repaired load-bearing component.

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

6. Roles and Responsibilities

See [Appendix D](#) for roles and responsibilities.

7. Definitions and Acronyms

See [Appendix E](#) for list of definitions and acronyms.

8. Reference Information

8.1 Applicable Regulations, Standards, and Codes

The following is the non-exhaustive list of regulations, codes, and standards that are applicable to the Lift Planning, Cranes, and Rigging Standard:

- Husky Operational Integrity Management System (HOIMS)
- Husky Life Saving Rules
- Provincial Occupational Health and Safety Codes and Equivalent, including the Alberta OH&S, Work Safe BC, Saskatchewan Occupational Health and Safety Act & Regulations, etc.
- OSHA Standards on Hoisting equipment, Derrick and Hoist
- ANSI/ASME B30 – Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings
- CAN/CSA Standards and Codes on Cranes and Other Lifting Devices

8.2 Reference Documents

The following is the non-exhaustive list of reference documents:

- Husky's Electrical Safety Standard (HOIMS-ST-E02-IM-000014058)
- Provincial Occupational Health and Safety Codes and Equivalent, including the Alberta OH&S, Work Safe BC, Saskatchewan Occupational Health and Safety Act & Regulations, etc.
- DOE-STD-1090 – Hoisting and Rigging Standard for Self-Propelled Modular Transporters
- IOGP Lifting & Hoisting Safety Recommended Practice – Report No. 376
- IHSA Hoisting and Rigging and Specialized Rigging Safety Manuals

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

9. Interpreting and Revising this Standard

The owner of this document is the Director of Construction Management. The owner of this document is accountable for interpreting and updating the material herein.

This standard is on a 3-year revision cycle.

10. Appendices

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Appendix A: Lift Planning and Authorization Forms and Checklists

A1 Standard Lift Plan and Checklist Form

Equipment Type / Name / Model:	
Manufacturer:	

#1	Item(s) to be Lifted:			
#2	Weight of Item to be Lifted (specify unit):			
#3	Weight of Auxiliary Items including rigging (specify unit):			
#4	Total Weight (specify unit): (#2 + #3)			
#5	Boom Length:	Maximum operating radius:	SWL @ this radius:	
#6	Hoisting Equipment Capacity (specify unit):			
#7	Hoisting Equipment Capacity to be Used (%): (#4 / #6) * 100			
#8	Number of people required for lift (specify rigger, operator, etc.):			
#9	Work Permit Information:	Permit Number:		
		Issued Date & Time:	Expiration Date & Time:	

Questionnaire		YES	NO
1	Is this a Standard Lift according to Table 1 ?		
2	Has a Job Hazard Assessment (JHA), or equivalent, been completed?		
3	Has hoisting equipment and rigging been inspected and functionally tested?		
4	Do you know the lift geometry for the entire lift range?		
5	Are ground conditions adequate for the lift?		
6	Does everyone know the person-in-charge of the lift?		
7	Do the lift personnel fully understand the lifting and hoisting procedures applicable to the lift?		
8	Is the lift area controlled (swing radius and load trajectory clear of personnel and structures)?		
9	Does everyone know the environmental limits (e.g. maximum permissible wind speed) for the lift? (See Page 8)		

The standard lift can only proceed if answers to all the above questions are "YES".

Form Completed By: Name & Signature			
Company and Job Title:			
Date:			
Reviewed By (Husky Site Representative): Name & Signature			
Job Title:		Date:	

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

A2 Serious Lift Plan and Checklist Form

Equipment Type / Name / Model:	
Manufacturer:	

#1	Item(s) to be Lifted:			
#2	Dimension of Item to be Lifted (LxWxH) (specify unit):			
#3	Weight of Item to be Lifted (specify unit):			
#4	CoG of Item to be Lifted (Given or Calculated or Unknown):			
#5	Combined Weight of Auxiliary Items including rigging (specify unit):			
#6	Total Weight of Load (specify unit): (#3 + #5)			
#7	Boom Length:	Maximum operating radius:	SWL @ this radius:	
#8	Hoisting Equipment Capacity (specify unit):			
#9	Hoisting Equipment Capacity to be Used (%): (#6 / #8) * 100			
#10	Wind Speed (specify unit):			
#11	Number of people required for lift (specify rigger, operator, etc.):			
#12	Work Permit Information:	Permit Number:		
		Issued Date & Time:	Expiration Date & Time:	
#13	Description of Work:			

Questionnaire		YES	NO
1	Is this a Serious Lift according to Table 1 ?		
2	Has a Job Hazard Assessment (JHA), or equivalent, been completed?		
3	Has hoisting equipment and rigging been inspected and functionally tested?		
4	Do you know the lift geometry for the entire lift range?		
5	Are ground conditions adequate for the lift?		
6	Does everyone know the person-in-charge of the lift?		
7	Do the lift personnel fully understand the lifting and hoisting procedures applicable to the lift?		
8	Is the lift area controlled (swing radius and load trajectory clear of personnel and structures)?		
9	Does everyone know the environmental limits (e.g. maximum permissible wind speed) for the lift? (See Page 8)		

The serious lift can only proceed if answers to all the above questions are "YES".

Form Completed By: Name & Signature			
Company and Job Title:			
Date:			
Reviewed By (Husky Site Representative): Name & Signature			
Job Title:		Date:	

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

A3 Critical Lift Execution Information Form

CAUTION: No lifts shall exceed 90% of hoisting equipment capacity.

A. Hoisting Equipment Information				
1	Name, Type, and Manufacturer _____	3	Are two or more Hoisting Equipment Required? <input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Capacity (specify unit) _____	4	Is the equipment the same as the lift plan? <input type="checkbox"/> Yes <input type="checkbox"/> No	
B. Load Information				
5	Item to be lifted _____	7	Combined Weight of Load (includes item, rigging and other auxiliary items not already factored) (specify unit) _____	
6	Weight of Item to be lifted (specify unit) _____	8	Hoisting Equipment Capacity demand _____	
C. Weather Information				
9	Temperature (specify unit) _____	11	Visibility Distance (specify unit) _____	
10	Wind Speed (specify unit) and Direction _____			
D. Other Information				
12	Personnel required for lift (specify rigger, operator, etc.) _____			
13	Work Permit Info (Number, Issue and expiry date and time) _____	14	Method of Communication _____	
15	Description of Work:			
Questionnaire			YES	NO
1	Is this a Critical Lift according to Table 1 ?			
2	Has a Job Hazard Assessment (JHA), or equivalent, been completed?			
3	Has hoisting equipment and rigging been inspected and functionally tested?			
4	Do you know the lift geometry for the entire lift range?			
5	Are ground conditions adequate for the lift?			
6	Does everyone know who the person-in-charge of the lift is?			
7	Do the lift personnel fully understand the lifting and hoisting procedures applicable to the lift?			
8	Is the lift area controlled (swing radius and load trajectory clear of personnel and structures)?			
9	Have any major differences between the critical lift plan and execution been addressed?			
10	Does everyone know the environmental limits (e.g. maximum permissible wind speed) for the lift? (See Page 8)			

The critical lift can only proceed if answers to all the above questions are "YES".

Form Completed By: <i>Name & Signature</i>			
Company and Job Title:			
Date:			
Reviewed By (Husky Site Representative): <i>Name & Signature</i>			
Job Title:		Date:	

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

A4 Personnel Basket Use Plan and Checklist Form

CAUTION: Personnel lifts shall not exceed 50% of hoisting equipment capacity. Do not load personnel basket beyond 80% of its capacity.

A. Personnel Basket Use Justification				
1	Detail of job to be performed including scope, location, weather conditions, and safety concerns			
2	Justification for use of personnel basket			
3	Personnel required for lift (specify riggers, operator, etc.)			
B. Hoisting Equipment Information				
4	Name, Type, and Manufacturer _____	7	Safe Working Load @ Maximum Radius _____	
5	Capacity (specify unit) _____	8	Combined Weight of Rigging (specify unit) _____	
6	Expected Operating Radius (specify unit) _____			
C. Personnel Basket Information				
9	Personnel Basket Identification _____	13	Combined Weight of personnel (specify unit) _____	
10	Capacity / Rating (specify unit) _____	14	Combined Weight of Load (includes personnel, rigging and other auxiliary items not already factored) (specify unit) _____	
11	Weight of Basket (specify unit) _____	15	Hoisting Equipment Capacity demand (#14÷#5) (in %) _____ (must be less than 50%)	
12	Number of personnel to be lifted in Basket _____			
D. Weather and Environmental Information				
16	Temperature (specify unit) _____	18	Visibility Distance (specify unit) _____	
17	Wind Speed (specify unit) and Direction _____			
E. Other Information				
19	Work Permit Info (Number, Issue and expiry date and time) _____	20	Method of Communication _____	
Questionnaire			YES	NO
1	Did inspection and testing of the personnel basket take place?			
2	If travel is required, has it been included in the test case? (write "N/A" if not applicable)			
3	Has a Job Hazard Assessment (JHA), or equivalent, been completed?			
4	Has the hoisting equipment and rigging been inspected?			
5	Did you complete trial lift as required?			
6	Are ground conditions adequate for the lift?			
7	Does everyone know who the person-in-charge of the lift is?			
8	Do the lift personnel fully understand the lifting and hoisting procedures applicable to the lift?			
9	Is the lift area controlled and clear of personnel?			
10	Does everyone know the environmental limits (e.g. maximum permissible wind speed) for the lift? (See Page 8)			

The personnel basket lift can only proceed if answers to all the above questions are "YES".

Form Completed By: Name & Signature			
Company & Job Title:		Date:	
Reviewed By (Husky Site Representative): Name & Signature			
Job Title:		Date:	

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Appendix B: Inspection Checklist for Hoisting Equipment

Equipment Name / Model:	
Manufacturer:	
Capacity:	

1 – Pre-Start-up Walk-around	OK	NO	N/A	3 – Start-up	OK	NO	N/A
Cab – glass/doors/2nd exit				Instrumentation – warning lights/gauges			
Steps/ladder – secure/clean/no ice				Oil pressure			
Wheels & tires – rims/lug nuts/tire condition/ inflation				Air (brake) pressure			
Boom – angle indicator/jib/condition				Coolant temperature			
Main/auxiliary hoist(s) – hook/attachment/block/ sheaves/wire rope/A2B				Battery charge rate/level			
Hydraulics – cylinders/hosing/pins/fittings/ fluid level				Fuel level			
Turntable – ring & pinion condition				Noises – engine sounds normal			
Engine – fluids/belts/hoses/leaks/debris				Lights			
Battery/batteries – secure/electrolyte level/ connections clean & tight				Horn			
Counterweight – secure/condition				Accessories – wipers/heater/fan/radio			
Drum(s) – condition/line spooled properly				LMI – functions/calibrated properly			
Air (brake) tanks – condition/water drained				House lock-pin – disengaged (as applicable)			
Outriggers/stabilizers – condition/leaks							
Warning decals – in place/condition/legible				4 - Function Checks			
Lights/strobes – condition				Boom – lift/lower/extend/retract			
				Hoist(s) – raise/lower			
2 – Interior Cab Checks				Turntable swing			
Housekeeping				Outriggers/stabilizers			
Fire extinguisher				Steering			
Manufacturer’s operating manual				Transmission – gear & direction selector			
Log book				Brakes			
Inspection certificate							
Load charts/range diagrams							
Level indicator							
Seatbelt							

OK – In good condition
NO – Maintenance required

Completed By:	
Company:	
Date:	

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Appendix C: Inspection Checklist for Rigging Equipment & Devices

Equipment Name:	
Manufacturer:	
Capacity:	

Rigging Equipment, Device, and Hardware Inspection	PASS	FAIL	N/A
Check for corrosion			
Check for kinking, bird caging, or distortion			
Check for bent hooks			
Check for broken wires			
Check for evidence of heat damage (burns)			
Check for elongation of links			
Check for dented or bent links			
Check for missing or illegible tag			
Check for burns or similar damage			
Check for tears, cuts beyond permitted by manufacturer			
Check for brittle or worn stitches and edges			
Check for torn stitches			
Check for damaged, missing, or inoperable safety latch			
Check for pin thread damage			
Check for missing capacity markings			

Completed By:	
Company:	
Date:	

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Appendix D: Roles and Responsibilities

A. Husky Director of Construction Management

The Husky Director of Construction Management is a Corporate Engineering, Procurement & Project Management (EPPM) entity accountable for ensuring that the information presented in this standard is accurate and up to date.

B. Husky Construction Planning Engineer

The Husky Construction Planning Engineer is a Corporate Engineering, Procurement & Project Management (EPPM) entity responsible for ensuring that the information presented in this standard is accurate and up to date. The Husky Construction Engineer or Planner is also responsible to:

- a) Assist with the review and acceptance of Critical Lift Plans (as specified in Section 2) including drawings, procedures and specifications.
- b) Provide technical support and resources for the planned lift ensuring compliance with applicable codes, standards and regulations.
- c) Determine if additional regulations are applicable to hoisting equipment operations.
- d) Provide site lift planning and execution technical support to construction, operations, and maintenance personnel as required.
- e) Support the Site Manager and/or Site Representative with the approval and/or authorization of Critical Lifts execution when present at the Husky site.

C. Husky Procurement Category Manager

The Procurement Category Manager is responsible to ensure that this Standard is included in all SOW, POs, RFPs, and service contracts when engaging a hoisting equipment / lifting / hauling / rigging services provider.

D. Husky Site Manager / Superintendent

The Husky Site Manager / Superintendent (official title may vary from one Husky site to the other) is the Controlling Authority with the overall accountability for the Husky site. The Husky Site Manager can delegate accountabilities. The Husky Site Manager has overall **accountability** for the application of the Husky Lift Planning, Cranes, and Rigging Standard at the worksite. The Husky Site Manager is **accountable** to:

- a) Approve and/or authorize lifts at the Husky site prior to execution.
- b) Ensure that competent personnel carry out hoisting equipment inspection, testing, and maintenance on Husky-owned equipment.
- c) Ensure coordination with other jobsite activities that will affect, or may be affected, by the lift.
- d) Ensure that the area for the hoisting equipment, including ground/soil, is adequately prepared.
- e) Prohibit hoisting equipment operation inside clearance zones of energized power lines or other uninsulated energized electrical equipment.

E. Husky Site Representative

In the context of this standard, the Husky Site Representative reports to the Husky Site Manager / Superintendent. In situations where the Site Representative has the overall accountability for the Husky site, then the role of the Site Manager is assumed by the Site Representative. The Husky Site Representative (examples include Construction Site Representative (CSR) or Work Site Leader (WSL) or Maintenance Representative or Superintendent) has a supervisory role and is responsible for ensuring that lifting operations are carried out safely. The Site Representative has overall **responsibility** for ensuring that the Husky Lift Planning, Cranes, and Rigging Standard is applied at the worksite. Technical expertise in matters of hoisting equipment and lifting operations is provided by

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

representatives of the lifting services contractor (including a competent lift director / supervisor / coordinator). However, the Husky Site Representative must have a good understanding of the inherent risks associated with lifting and hoisting operations and be knowledgeable of this standard. The Site Representative is **responsible** to:

- a) Be familiar with and support the implementation of the contents of this standard at the worksite.
- b) Ensure that every lift, or series of similar lifts, have a written lift plan. Review and sign the lift plans prior to commencement of the lifting operations. The technical integrity of the lift plan is the responsibility of the service provider's representative that prepared the plan.
- c) Ensure that Husky-owned hoisting equipment undergo applicable inspection, testing, and maintenance.
- d) Verify that personnel involved with any lifting operation have been properly trained and competent to perform necessary tasks.
- e) Ensure adequate supervision of rigging and lifting activities.
- f) Ensure that permits are in place prior to carrying out any lifting activity.
- g) Ensure that alternatives to personnel basket have been considered prior to use of personnel basket for personnel lift.

The following roles and responsibilities apply to Husky and/or lifting services contractor (that may be performing the work on behalf of Husky).

F. Hoisting Equipment Owner

The Hoisting Equipment Owner is the individual, partnership, firm, or corporation who owns the hoisting equipment. The Hoisting Equipment Owner can be Husky, or the lifting services contractor or service provider (or a subcontracted temporary hoisting equipment service provider). In situations where hoisting equipment is rented, the renter assumes the responsibilities of the owner during the rental period. The Hoisting Equipment Owner is responsible to:

- a) Ensure that the hoisting equipment is completely inspected, tested, and maintained per the manufacturer's specifications and meets all applicable federal, provincial, state and local regulations prior to mobilizing to any Husky site.
- b) Maintain a record of inspections, tests, repairs, maintenance, modifications and deficiencies and ensure that maintenance records of all hoisting equipment, including load test certificates, examination reports, reports of any defective hoisting equipment, a log of override of equipment's safety and control mechanisms, and repairs are available upon request by Husky.
- c) Maintain records of the identification, capability, training and competence of all hoisting equipment operators and site support personnel.
- d) Maintain a logbook.

G. Hoisting Equipment User

The Hoisting Equipment User is the individual, partnership, firm, or corporation who uses (or intends to use) the hoisting equipment to execute a hoisting operation. The Hoisting Equipment User can be Husky, or the lifting services Contractor. The Hoisting Equipment User is responsible to:

- a) Adhere to the equipment manufacturer's requirements and regulations applicable at the Husky site.
- b) Use Lift Supervisors, Hoisting Equipment Operators, and other lift personnel that are competent. Document and store the training requirements and competency assessments of these individuals.
- c) Address conditions that may adversely affect the hoisting equipment operations. Such conditions include, but are not limited to, the following:
 - 1) Poor ground/ soil and support conditions
 - 2) Wind velocity or gusting winds

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

- 3) Heavy rain, hail, freezing rain, snow
- 4) Operating or live plant process upsets (e.g. flaring, etc.)
- d) Ensure that the hoisting equipment is in good operating condition prior to initial Husky site use
- e) Verify that the hoisting equipment has the necessary lifting capacity to perform the proposed lifting operations in the planned configuration and load-rating charts are available and placed in the manufacturer's designated location before operation.
- f) Notify the assigned Hoisting Equipment Operator of adjustments or repairs to the equipment prior to hoisting equipment operations.
- g) Ensure that the inspection, testing, and maintenance programs specified by the Hoisting Equipment Owner and/or manufacturer are followed.
- h) Assign appropriate personnel for the purpose of inspection, testing, maintenance, repair, transport, assembly and disassembly.
- i) Securely quarantine damaged, uncertified and incorrectly marked hoisting and rigging equipment.
- j) Ensure that permits are in place prior to carrying out any lifting operations.
- k) Provide support with the planning of lifts where feasible.

H. Hoisting Equipment Operator

The Hoisting Equipment Operator is an individual who uses hoisting equipment to move, raise or lower load as part of the lifting operation.

Operators' certification is required to operate different types and lifting capacities of hoisting equipment. Certification programs (terms and requirements) vary from jurisdiction to jurisdiction. Hoisting Equipment Operators must be able to produce a valid regional (provincial, state, territory, national, and jurisdictional) certificate for the region they are working in. Apprentice Operators are permitted to operate equipment under the direction of a journeyman. Operators shall only operate hoisting equipment that they have valid certification to operate. The Operator's responsibilities are to:

- a) Only operate equipment they have been specifically trained and competent to operate. Maintain proof of qualification. Copies of this certification must be available for review always.
- b) Have a thorough understanding of the information contained within the hoisting equipment (operating) manuals and understand the hoisting equipment's limitations as well as its operating characteristics.
- c) Know, understand and properly use the hoisting equipment load rating charts and diagrams and apply all notes and warnings related to the charts to confirm the correct hoisting equipment configuration to suit the load, site, and lift conditions.
- d) Select the appropriate boom, jib and hoisting equipment configuration to meet lift requirements and determine the net lifting capacity of this configuration as required.
- e) Confirm that the provided load and rigging weights (including the actual or approximate centre of gravity (CoG)) are correct.
- f) Ensure that the load chart is present in the cab of the hoisting equipment and that it shows the capacity loads at various radii and boom angles.
- g) Confirm that all operating aids and safety devices are operational. Inform the Husky Site Representative of any safety devices are bypass or override.
- h) Check that the site is adequately prepared for the hoisting equipment (e.g. ground / soil preparations, access and clearances, matting).
- i) Check that all hazards have been identified, e.g., power-lines, pipelines, culverts.
- j) Know the types of site conditions that could adversely affect the operation of the hoisting equipment and inform the Lift Supervisor of the actual or possible presence of those conditions.
- k) Cease operations if an unsafe situation or condition is present including loss of communication with Signaller.

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

- l) Inspect the hoisting equipment using the checklist provided in Appendix B.
- m) Where feasible, support the planning of all lifts.
- n) Ensure that permits are in place prior to carrying out any lifting operations.
- o) Participate in the Job Hazard Assessment (JHA), or equivalent, and pre-lift meeting held prior to all lifts.
- p) Refuse to operate the hoisting equipment when any portion of the load or hoisting equipment would enter the clearance zone of energized power lines or other energized electrical equipment except when planning and precautions are in place as specified in Section 3.4.4 Lift Execution near Electrical Hazards.
- q) Follow applicable lock out/tag out procedures.
- r) Ensure that all controls are in the off or neutral position and that all personnel are in the clear before energizing the hoisting equipment or starting the engine.
- s) Ensure complete focus on task while operating the hoisting equipment controls.
- t) Test the hoisting equipment function controls that will be used and operate only if those function controls respond properly. Take adequate care to ensure that the Hoisting Equipment Operator does not inadvertently engage the controls of the hoisting equipment.
- u) Do not wear loose-fitted clothing and ensure clearance to hoisting equipment controls to prevent inadvertently engaging the controls of the hoisting equipment.
- v) Wear seatbelts whenever the hoisting equipment is in operation.
- w) Observe and/or use a signaller to observe each outrigger during extension, setting, and retraction.
- x) Verify applicable standard and special signals with signaller prior to execution and respond to such signals. When a signaller is not required, the Operator is responsible for the movement of the hoisting equipment. The Operator shall obey a stop signal always, regardless of who gives it.
- y) Understand load-rigging procedures.

I. Lift Director / Coordinator / Supervisor

The Lift Director or Coordinator or Supervisor is an individual who directly oversees the execution of lifts. The Lift Director or Coordinator or Supervisor is a subject matter expert that is competent and has sound training, knowledge and experience of all aspects of the hoisting operations. The Lift Director or Coordinator or Supervisor is typically designated by the Contractor but can sometimes be designated by Husky. The Lift Director or Coordinator or Supervisor shall be responsible to:

- a) Be present during serious and critical lift operations.
- b) Require and confirm that all personnel involved in the lifting operations are competent and understand their roles, responsibilities, and associated hazards.
- c) Confirm that all lifting operation have been properly assessed and appropriately planned.
- d) Obtain appropriate permits and approvals for hoisting equipment activities.
- e) Ensure emergency and contingency plans are developed and communicated.
- f) Assess weather conditions at the time of lift to confirm lift can proceed safely (See Page 8).
- g) Ensure that custom-made lifting devices are fit for use and certified by a professional engineer.
- h) Ensure that all necessary lift plan documentation, as described in this standard, have been completed and signed off by the appropriate personnel prior to commencement of lifting operation.
- i) Work with Site Manager and/or Site Representative to ensure that the lifting operations are coordinated with other jobsite activities.
- j) Provide leadership for the Job Hazard Assessment (JHA) and pre-lift meeting held prior to all lifts.
- k) Ensure the completion of preparation of the area needed to support operations (including ground / soil preparation) prior to operations commencement.
- l) Ensure that necessary traffic controls are in place to restrict unauthorized access to the hoisting

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

equipment work area.

- m) Immediately address safety concerns identified by the Hoisting Equipment Operator or other personnel and use good judgment, as well as assume responsibility, in deciding whether to proceed with operations. In all cases, adhere to the the equipment manufacturer's safe operations guidelines and other applicable industry, worksite, regional and jurisdictional codes, standards and regulations always.
- n) Disallow hoisting equipment operation inside the clearance zone of energized power lines or other energized electrical equipment.
- o) Verify and assess, in conjunction with the Hoisting Equipment Operator, the weight of loads, as well as the lifting, moving, and placement locations for these loads.
- p) Ensure that the load is properly rigged and balanced prior to lifting.
- q) Ensure that assembly and competent personnel supervise disassembly of hoisting equipment.

J. Lift Engineer

The lift engineer is a person who is a Professional Engineer (as defined by the applicable Jurisdiction) and deemed by their employer to be appropriately trained and competent in the preparation of lift plans and studies. The Lift Engineer is responsible to:

- a) Use thorough understanding and application of knowledge, training and experience for all lift studies.
- b) Provide technical support and resources for the planned lift ensuring compliance with applicable codes, standards and regulations.
- c) Investigate and understand the nature of the lift, in regard to the:
 - 1) Load, size, weight, center of gravity, special conditions, shape, load integrity, and other pertinent information
 - 2) The initial and final position, orientation, and elevation of the load
 - 3) Any special weather/climate conditions or concerns
 - 4) Special ground or area conditions and/or concerns
 - 5) Soil compaction and matting requirements to ensure stable ground conditions for the hoisting equipment
- d) Identify hoisting equipment travel or swing, capacity through each phase of the lift, point-loading requirements, rigging hardware requirements, etc.
- e) Review drawings and/or site information to verify access and clearances; identify obstructions; and eliminate interference with respect to the lift.
- f) Prepare, review, discuss, revise and issue drawings, plans and specifications to personnel who will make the lift.
- g) Consider the potential for induced voltage (see pages 8 and 9).

K. Rigger / Slinger

Rigging and slinging work shall be performed by or under the direct supervision of competent rigger familiar with the rigging to be used. The Rigger or Slinger is responsible to:

- a) Be competent to perform rigging activities. Document and retain training requirements and proof of competency assessments.
- b) Identify appropriate rigging components and rig loads and equipment to the manufacturers' specifications.
- c) Interpret the sling charts and follow the lift plans.
- d) Be knowledgeable of and use the hand signal chart for hoisting and moving loads. Confirm key hand signals with the Hoisting Equipment Operator prior to lift execution.
- e) Communicate with the Hoisting Equipment Operator throughout all stages of the rigging process.

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

- f) Participate in the Job Hazard Assessment (JHA) and pre-lift meeting held prior to all lifts.
- g) Provide support with site preparation activities as required.
- h) Inspect all rigging devices and associated equipment (including softeners) thoroughly on all sides prior to each lift and adhere to all manufacturer's recommendations and capacity limitations.
- i) Follow general safety rules and procedures.

L. Flagperson / Signaller

The Flagperson or Signaller is a competent individual that is responsible to:

- a) Perform signaling activities.
- b) Document and retain training requirements and proof of competency assessments.
- c) Be knowledgeable of and use the hand signal chart for hoisting and moving loads. Confirm key hand signals with Hoisting Equipment Operator prior to lift execution.
- d) Be aware of surrounding personnel, hazards and obstructions.
- e) Wear highly visible vest and/or armband.
- f) Ensure that the loaded or unloaded load block stays level when out of sight of Hoisting Equipment Operator.
- g) Communicate with the hoisting equipment operator throughout all stages of the lift.
- h) Participate in the Job Hazard Assessment (JHA) and pre-lift meeting held prior to all lifts.
- i) Be familiar with and aware of lift plan.
- j) Be in continuous sight of the load.
- k) Follow general safety rules and regulations

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Appendix E: Acronyms and Definitions

Term	Definition
Boom or Load Radius	Is the horizontal distance from the base of center pin of the hoisting equipment to the centre of gravity of the load being lifted
Capacity (dynamic and structural)	Structural capacity is the capacity based on strength of materials as well as efficiency of hoisting devices; Dynamic capacity is the capacity of the equipment with deductions, depending on the amount of applied forces, from the structural capacity
Certified (Lifting or Rigging Equipment)	The condition or state when rigging loose gear and lifting and rigging equipment has been inspected and has been found to follow the manufacturer's design and specifications, and found to be in satisfactory condition and operation, and function according to the requirements within this standard, and applicable industry standards and regulatory requirements
Certified (Personnel)	Meet a standard through examination, following a course of study. For hoisting equipment operations, this means successfully completing a course of instruction in hoisting equipment operation, rigging practices, or hoisting equipment inspection
CoG	Centre of gravity: the point where all the weight of the load can be concentrated
Competent Personnel	A competent person is an individual who, by way of training and/or experience, is knowledgeable of applicable standards, can identify workplace hazards relating to the specific operation, is designated by the employer, and has authority to take appropriate actions
CPT	Conventional Platform Trailers
Critical Lift	See Lift Categorization Table (page 4)
Ground Bearing Pressure (GBP) or Soil Bearing Capacity	GBP of soil is the value of the average contact pressure between the foundation and the soil that will produce shear failure in the soil. It is the capacity of soil to support the loads applied to the ground
Hoisting Equipment	Equipment that is used in raising, lifting and lowering of load and moving a load horizontally (see Appendix F)
Inverting of Load	Is the process of turning a load upside down
Job Hazard Assessment (JHA)	JHA is a written process to recognize existing and potential hazards at work before they cause harm to people or property. The JHA provides an analysis of each task, identifies the hazard with each job step and assists in the creation of a job procedure
Load Weight or Weight of the Load	This is total weight experienced by the hoisting device. This includes the weight of the element being hoisted PLUS the weight of the rigging equipment and devices PLUS any other auxiliary hoisting component
Lift Plan	A lift plan is a written document that specifies the requirements and resources necessary to safely and efficiently carryout a lifting / hoisting operation. Critical lift plans and studies must contain summary drawings and be signed off by a professional engineer applicable to the jurisdiction of the lifting operation
Lift Plan Drawing	A drawing that, at a minimum, collates the hoisting equipment curves, or capacity at a given radius, the lift rigging and the lift location/over boarding details, and steps / precautions to be taken when executing the lift
Load block	The assembly of hook or shackle, swivel, sheaves, pins, and frame
Load Chart	A table that summarizes the hoisting equipment static, dynamic, and personnel handling load capacities at various boom angles, radii, and reeving configurations. The load chart will include boom length, cable size, and weight of block, hoisting equipment model, and serial number



Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Term	Definition
“near” with respect to electrical hazards	Means lifting operations within 3 meters to power lines or other uninsulated energized electrical equipment (as described in Table 2 on Page 9). This distance is in reference to any part of the hoisting equipment, rigging, load, etc. and should allow for movement due to wind or other factors
Outriggers	The extendable (or fixed) metal arms attached to the hoisting equipment-mounting base that rest on supports on the outer end. Operations and use of outriggers as per the manufacturer, along with adequate support, will level and stabilize the hoisting equipment
“pick points”	The rigging attachment points or locations on the load to be lifted
Pre-Lift Meeting	A briefing meeting with all relevant personnel to discuss and align on the lift plan to ensure safe and successful lift
Purchase Order (PO)	A request to a supplier to deliver a quantity of material or deliver a service at a certain point in time
Reeving	Reeving refers to passing rope or sling through the swallow of a load block. It is the configuration of the wire rope, blocks and drum of the hoist in which wire rope travels around drums and sheaves, or pulleys, for hoisting or hauling
Rolling of Load	Is the process of spinning a load about its longitudinal axis
RFI (Request for Information)	This is a request made typically during the early stages of the sourcing process where a buyer cannot clearly identify product/service requirements, specifications, and purchase options
RFP (Request for Proposal)	This is a document used in sealed-bid procurement procedures through which a purchaser advises the potential suppliers of statement and scope of work, specifications, schedules or timelines, etc.
Rigging and Lifting Inspector	A rigging and lifting inspector is a person possessing the necessary technical expertise, training, and experience to carry out the examination, testing and certification of all rigging and Hoisting Equipment. This should be carried out by an independent third party
Rigging	Rigging includes the process of safely moving loads with slings, hoists, jacks, and other types of hoisting equipment and the equipment used to lift and move these loads
Rigging Equipment	The assembly used to connect the load to the hoisting equipment. Refer to Appendix F of this standard for sample list of rigging equipment, hardware and devices
Safe Working Load (SWL)	The SWL is the maximum load, as assessed by a competent person, which an item of hoisting equipment may raise, lower or suspend under particular service conditions. SWL is the maximum load that the hoisting equipment can withstand under normal use. In all lifting operations, care shall be taken to ensure that the load imposed on any item of hoisting equipment, or part thereof, does not exceed its SWL
Serious Lift	See Lift Categorization Table (page 4)
Sling	A device used to connect loads to the hoisting equipment.
SPMT	Self-Propelled Modular Transporter
Standard Lift	See Lift Categorization Table (page 4)
Tag line	A length of rope attached to the load and used by riggers to help control its movement
Upending of Load	Is the process of raising a load from the horizontal to the vertical
Working Load Limit (WLL)	The maximum load that the hoisting equipment is certified to withstand under normal use and in a given configuration

 Husky Energy		Engineering, Procurement & Project Management	
Knowledge Area:	Construction Management	Document No:	PDM-CM-ST-0006
Title:	Lift Planning, Cranes, and Rigging Standard	Revision:	2

Appendix F: Sample List of Hoisting and Rigging Equipment

Hoisting Equipment

- a) All Conventional Cranes including:
 - Mobile Cranes (All-Terrain and Rough-Terrain)
 - Crawler Cranes
 - Ring Cranes
- b) Boom (including Knuckle Boom), Conventional, and Hydraulic Trucks
- c) Carry Deck Cranes
- d) Overhead Cranes
- e) Tower and Self-Erecting Cranes
- f) Gantries and their components
- g) Derrick Cranes
- h) Jacks, Jack and Slide, and Jack and Roll components
- i) Self-Propelled Modular Transporters (SPMT) and Conventional Platform Trailers (CPT)
- j) Side Boom Tractors
- k) Gin Pole, Bed, and Winch Trucks
- l) Triggers

Rigging Equipment, Hardware, and Components

- a) Hooks
- b) Slings
- c) Shackles
- d) Turnbuckles, Eyebolt, and Eye Nuts
- e) Stingers
- f) Swivel Hoist Rings
- g) Links (including Forged links/rings), Rings, and Swivels
- h) Wire Rope Clips
- i) Wedge Sockets
- j) Rigging Blocks
- k) Spreader bars and other Below the Hook Lifting Devices
- l) Chain Fall
- m) Beam Clamps

Sample List of Equipment not covered

- a) Drilling rigs
- b) Service rigs
- c) Elevated work platforms
- d) Earthmoving equipment
- e) Forklifts (including zoom booms)
- f) Elevators
- g) Helicopter lifting operations