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## Load Handling (Hoisting) Policy

### 1.0 PURPOSE

This policy is to promote safe load handling (hoisting) practices and reduce the frequency and severity of incidents. The purpose is to protect personnel from injury, the environment from harm, and equipment and property from damage.

### 2.0 SCOPE

The scope of the policy applies to all activities that involve load handling equipment to move loads vertically, horizontally or manipulate their configuration. Materials, tools, equipment or workers with their accompanying tools and equipment are deemed as loads.

This policy is not intended to include the transportation of a load given the load's position cannot be manipulated while the equipment is in motion.

This policy is not a comprehensive technical set of load handling procedures rather it identifies the essential principles and steps to establish safe load handling (hoisting).

### 3.0 APPLICABILITY

This policy applies to all personnel involved in any load handling (hoisting) on behalf of SaskPower, including, but not limited to, the following:

- (1) All workers involved in acquiring, inspecting, maintaining, testing and or using load handling equipment and lifting accessories, regardless of ownership, and those workers involved in planning and supervising the lift; and
- (2) All supervisors of workers involved in load handling (hoisting).

Unless otherwise stated, this policy applies to all equipment, regardless of ownership, used to perform load handling (hoisting) including, but not limited to, all equipment identified in Appendix A and to any other equipment with a different primary design function that is being used in a load handling (hoisting) application.

### 4.0 EXCLUSIONS

This policy excludes the following equipment:

- (1) Elevators, fixed personnel lifts or medical lifts;
- (2) Power mobile equipment being used for excavation or pile driving activities;
- (3) Bulk material handling equipment (e.g. conveyors, concrete pumpers, augers, pipelines, pumps, draglines, etc.);
- (4) Engineered systems related to water conveyance structures (e.g. intake gates, spillway gates, etc.);
- (5) Automated and or robotic material handling systems; and
- (6) Aeroplanes.

## 5.0 REQUIREMENTS

This policy outlines the minimum requirements that shall be met or exceeded. Failure to comply may result in injuries, environmental harm, damage to equipment and property, performance management or any combination thereof.

The use of the word “shall” within this policy denotes a mandatory action, whereas the use of the word “should” or “may” denotes a recommended action.

## 6.0 IMPLEMENTATION

The requirements of this policy take effect June 27, 2017.

## 7.0 DEFINITIONS

The following definitions shall apply to this policy:

### 7.1 Competent

Person possessing knowledge, experience and training to perform a specific duty.

### 7.2 Employer

Person, firm, association or body that has, in connection with the operation of a place of employment, one or more workers in the service of the person, firm, association or body.

### 7.3 Fall Zone

The area (including, but not limited to, the area directly beneath the load) in which it is reasonably foreseeable that the load when partially or completely suspended/elevated could fall in the event of a mishap.

### 7.4 Hoisting

See Load Handling.

### 7.5 Lift

Execution of the load handling operation.

### 7.6 Lifting Accessory

Device intended to be used directly or indirectly to connect the load to the load handling equipment and is not part of either the load or the load handling equipment, including rigging.

### **7.7 Lift Plan**

Information, written or verbal, that, at a minimum, details how the load handling shall be undertaken, identifies the equipment to be used, how the load and lifting accessories shall be rigged up and the control measures to be implemented to manage risks.

### **7.8 Load**

Object to be hoisted; may include materials, tools, equipment or workers with their accompanying tools and equipment.

### **7.9 Load Handling**

Lifting a load vertically and or moving of a load horizontally or manipulating its configuration while in an elevated state using mechanical devices.

### **7.10 Load Handling Equipment**

Mechanical device designed to move a load vertically, horizontally or otherwise manipulate the load; refer to Appendix A.

### **7.11 Machine**

Any combination of mechanical parts that transmits from one part to another or otherwise modifies force, motion or energy.

### **7.12 Qualified**

Person possessing a recognized degree, a recognized certificate or a recognized professional standing and demonstrating, by knowledge, training and experience, the ability to deal with problems related to the subject-matter, the work or the project.

### **7.13 Regulations**

*The Occupational Health and Safety Regulations, 2020.*

### **7.14 Supervisor**

A person, including a SaskPower contracted individual, who is authorized by an employer to oversee or direct the work of workers.

### **7.15 Worker**

Person, including a supervisor, who is engaged in the service of an employer. This includes SaskPower contracted individuals.

## 8.0 METHOD/PRACTICE

Due to the inherent risks of load handling, the following steps shall be employed to establish safe load handling.

1. Define scope of the lift
2. Assess and categorize the lift (standard or critical)
3. Develop a lift plan (written or verbal)
4. Conduct a pre-lift review
5. Conduct preparations for the lift
6. Execute the lift
7. Conduct a post-lift review

These seven steps shall be performed in accordance with the *Planning for Load Handling Standard*.

No lifts shall be undertaken at or exceeding rated capacity of the load handling equipment or lifting accessories.

No load shall consist of personnel when the load handling equipment is comprised of material hoists (i.e. overhead cranes), or hoists, excluding personnel hoists.

When the load consists of personnel the lift shall also comply with the Personnel Hoisting Standard.

Only personnel essential to the lift plan shall be permitted in the fall zone; barriers shall be implemented to prevent unauthorized entry.

When any potentially unsafe condition is recognized or if the lift cannot proceed according to the lift plan, the job shall be stopped immediately and the load placed in a safe state until the issue is addressed; then the lift can proceed.

No workers shall place themselves under or on top of a suspended or unsecured elevated load. No load shall be positioned above workers or be left unattended while in the suspended or elevated state unless it is securely blocked against movement.

All load handling activities and associated equipment shall comply with the current applicable Regulations.

All load handling equipment records shall be in compliance with the *Load Handling Equipment Record Keeping Standard*.

In specific cases, exemptions to the Regulations have been granted to SaskPower. Active exemptions are accessible through SafetyNet and shall be confirmed to be applicable and current prior to use.

Load handling undertaking deviations from this policy and any related approved internal documents shall follow the process outlined in the internal Deviation from Safe Work Procedures Standard.

## 9.0 EQUIPMENT REQUIREMENTS

Load handling equipment and lifting accessories selected for use shall be fit for the intended purpose and operating conditions. Load handling equipment and lifting accessories shall not be altered, repaired or modified unless under the direction of a qualified person.

Load handling equipment and or lifting accessories that have been involved in an incident, overload situation, or subject to modification/major repair, regardless of the maintenance schedule, shall be assessed by qualified personnel prior to continued service.

The construction, inspection, testing, maintenance and operation of load handling equipment and the inspection, assembly, use and maintenance of lifting accessories manufactured on or after December 4, 1996 shall comply with Regulations, adopted industry standards, internal standards as well as manufacturer's recommendation; if inconsistencies exist the most stringent shall apply. A listing of adopted industry standards is located in Appendix A.

### **9.1 Procurement of Services and or Equipment**

SaskPower workers acquiring load handling equipment and or lifting accessories, rental or purchase, and or services to conduct load handling shall specify compliance to the Regulations and this policy, including all applicable approved internal standards, as part of the contract requirements. The most recent adopted industry standard(s) referenced herein applicable to the scope of work shall also be invoked by contract to accompany the policy.

Manufacturer(s) and or service provider(s) shall supply load handling equipment with all documentation as defined by the *Load Handling Equipment Record Keeping Standard*.

### **9.2 Equipment Markings**

All markings required by Regulations and the applicable adopted industry standard(s) shall be permanently and legibly marked on each piece of load handling equipment and lifting accessory. Additionally, special warnings related to limitation of equipment or operating procedures shall be included in the markings provided by the manufacturer. Markings shall be affixed in a location visible to the worker.

The maximum load rating or, where applicable, load rating chart of any active load handling equipment and lifting accessories shall be legible and readily available to the worker. All efforts should be made to have the load ratings marked on the equipment or affixed to the equipment.

If markings are missing, replacements shall be obtained from the manufacturer. In the event that the manufacturer is not able to provide markings a qualified person shall provide the markings. If the missing markings are critical to the safe operation, the equipment shall be removed from service until markings are affixed on the equipment. The records of any replacement labels and supporting documentation shall be kept on the file with the maintenance history for that specific piece of load handling equipment.

### **9.3 Equipment Status**

All SaskPower owned equipment should be categorized into one of the following statuses:

- Under Commissioning
- Active
- Out of Service
- Removed from Service
- Decommissioned

Equipment is classified as under commissioning following receipt or transfer of ownership prior to placing into service. Equipment under commissioning is not to be operated except as required for the testing and commissioning process. Once fully commissioned and available for service the equipment moves to active status. The equipment shall be classified as out of service when any deficiency that affects the safe operation of the unit is noted, the equipment is overdue for scheduled inspections and maintenance, or is involved in an incident. The removed from service status is used for equipment infrequently utilized or pending decommissioning to mitigate excessive scheduled inspections and maintenance. Equipment that is decommissioned shall either be rendered inoperable or salvaged according to procurement guidelines.

Prior to equipment returning to active status it shall be assessed and subject to any required inspections and maintenance by a competent worker to ensure the equipment is adequate to safely perform its function.

#### **9.4 Inspections**

Inspections shall include both visual and operational inspections of load handling equipment, lifting accessories and the load. Inspections shall include, but are not limited to, initial inspections, preoperational (frequent) inspections and periodic inspections.

All inspections shall be conducted by a competent worker and shall be performed in accordance with Regulations, adopted industry standards, internal standards and manufacturer's requirements. If manufacturer's instructions are not available, an engineering evaluation of the equipment shall be performed to establish, in writing, the necessary inspection procedures.

If a defect or suspected defect is identified in the load handling equipment or lifting accessories action shall be taken immediately to protect the health and safety of any worker who may be at risk until the defect is corrected.

When load handling equipment and or lifting accessories have been determined to be in unsatisfactory working order, the competent worker inspecting the equipment shall remove the equipment from service and shall classify the equipment as either repairable or non-repairable. Equipment categorized as non-repairable shall be immediately rendered unusable for any future load handling and then disposed of. Load handling equipment identified as repairable shall be tagged as per the *Load Handling Equipment Record Keeping Standard* and then processed for repair. Lifting accessories identified as repairable shall be tagged as such, including details regarding what was found in the inspection and then processed for repair.

Competent workers shall inspect load handling equipment and lifting accessories suspected to have been damaged during a lift prior to placing the equipment into storage. If the suspected damage cannot be confirmed by visual inspection, the equipment shall be assessed further by qualified personnel.

#### **9.5 Maintenance**

Maintenance shall be conducted, by competent workers, in such a manner as to mitigate risks to any worker.

When maintenance is to be carried out on load handling equipment that falls under the definition of a "machine" the process used shall be compliant with Part X Machine Safety of the Regulations.

When a repair tag is required as per the *Load Handling Equipment Record Keeping Standard* it shall be placed on the controls to prevent the equipment's use.

Additionally, as per Regulations, a tag shall be placed on the controls when a safety device has been removed for maintenance, indicating which safety device has been removed and why.

#### **9.5.1 Maintenance Plans and Schedules**

A preventative maintenance plan and schedule considering work environment, operating history, severity of use and effects of ageing shall be implemented for each classification of load handling equipment and lifting accessories; reviews of the plans and schedules should be conducted periodically. The plans and schedules, at a minimum, shall follow Regulations, applicable adopted industry standard(s) and the manufacturer's recommendations; whichever is more stringent.

All safety devices shall be inspected, maintained and calibrated at regular intervals specified by the manufacturer or qualified person to ensure they are fully operational.

For further information refer to the *Load Handling Equipment Record Keeping Standard*.

#### **9.5.2 Testing**

New, reinstalled, altered, repaired, and or modified load handling equipment or components thereof shall be tested to verify adequacy prior to initial use or returning to service according to Regulations, applicable adopted industry standard(s), internal standard(s) and the manufacturer's recommendations; whichever is more stringent.

Load handling equipment may require testing that exceeds the rated capacity of the machine. These tests shall be performed by personnel competent in the maintenance/testing of the specific load handling equipment and shall be performed in accordance with the manufacturer's instructions or under the direction of a Professional Engineer.

### **9.6 Records**

Records pertinent to the safe operation of the load handling equipment and lifting accessories shall be maintained to inform workers of equipment condition.

For detailed requirements regarding records refer to the internal *Load Handling Equipment Record Keeping Standard*.

Lifting accessories require thorough periodic inspections to ensure they can safely perform their intended function. The record of this inspection shall be available to the worker and an indicator shall be readily available to inform the workers of the last periodic inspection and that the lifting accessory is available for service pending the preoperational inspection. Any indicator used shall not impact the integrity or operation of the lifting accessory.

### **9.7 Safety Devices**

Load handling equipment and lifting accessories shall be fitted with appropriate safety devices such as anti two block warning device, stabilizing devices, overload limit switch, in accordance with the Regulations, applicable adopted industry standard(s) and manufacturers' specifications.

No worker shall use any load handling equipment or lifting accessory in which any safety device(s) have been removed or made ineffective.

## 10.0 PERSONNEL REQUIREMENTS

All workers involved in load handling shall understand and comply with applicable Regulations, applicable adopted industry standard(s), approved internal documentation including, but not limited to, policies, standards, procedures and work practices.

No worker shall undertake a work assignment for which they are not competent.

Workers shall use load handling equipment and lifting accessories provided to them by the employer in accordance with the Regulations, applicable adopted industry standard(s), approved internal documentation, manufacturer's instructions, their training and supervisory direction.

The employer shall supply information (i.e. applicable adopted industry standard(s), manufacturer's operating manuals, etc.), instruction, training, assessments, supervision and equipment, in regards to load handling, which is necessary to protect the health and safety of workers at work.

The employer shall provide adequate resources, including the number of workers, to ensure safe load handling.

Supervisors responsible for work assignments for load handling shall ensure that assignments do not exceed the qualifications and or competence of the worker.

Periodic assessment and refresher training should be conducted as necessary to ensure the required level of performance is maintained.

### 10.1 Roles and Responsibilities Specific to Load Handling Activities

All roles and responsibilities identified in the lift plan shall be defined and understood by all workers involved in the lift. An individual or entity may perform multiple roles at the same time given the roles do not conflict and doing so will not negatively impact the safety of the load handling operation.

For detailed information and requirements refer to the internal *Planning for Load Handling Standard*.

### 10.2 Qualifications and Competence

Workers performing duties associated to load handling specifically addressed by the Regulations shall be competent or qualified as per the Regulations.

Workers involved with load handling for which requirements are not specifically addressed by the Regulations shall meet the minimum requirements listed within the applicable adopted industry standard(s) to be deemed a competent worker for the specific task or duty.

If no qualifications are given in the approved adopted industry standard(s) to be deemed competent the worker shall:

- A. Be physically able to perform the specific job requirements;
- B. Complete training for the equipment type and or assigned function; and
- C. Pass the competency check for the specific task or duty.



### 10.2.1 Worker in Training

Work required to be performed by a competent or qualified worker may be performed by a worker in training for the purposes of gaining experience to become a competent or qualified worker and given that:

- A. The worker who is being trained is performing the work under direct supervision of a competent or qualified worker as required for the task being performed; and
- B. The work being performed is not part of a lift that is classified as critical.

### 10.3 Records

Qualification and competence records for workers involved in load handling shall be available for review.

Records owned by SaskPower, in its custody or under its control shall be maintained in accordance with the Records and Information Management Policy and Standard. These records shall be classified according to the Enterprise Classification and Retention Schedule (ECaRS) at the point of creation or receipt.

Records may be either physical information or electronic information and shall be legible. Records should only be duplicated where necessary.

## 11.0 RESOURCES

Appendix A (Mandatory) - Listing of Adopted Industry Standards

## 12.0 REFERENCES

- Saskatchewan
  - The Saskatchewan Employment Act, 2014
  - *The Occupational Health and Safety Regulations, 2020*
- SaskPower
  - Deviation from Safe Work Procedures Standard
  - Enterprise Classification and Retention Schedule (ECaRs)
  - Load Handling Equipment Record Keeping Standard
  - Personnel Hoisting Standard
  - Planning for Load Handling Standard
  - Records and Information Management (RIM) Policy
  - Records and Information Management (RIM) Standard



## Appendix A (Mandatory) - Listing of Adopted Industry Standards

Note: No year of publication is given as the most recent one shall apply.

	Grouping of Equipment	Equipment Type	Adopted Standards	
Load Handling Equipment	Material Hoists (Overhead Cranes)	Top Running Bridge Cranes	CSA B167	
		Underhung Bridge Cranes	CSA B167	
		Monorails	CSA B167	
		Gantry	CSA B167	
		Jib	CSA B167	
	Stationary Cranes	Tower	CSA Z248	
	Mobile Cranes	Articulating Boom Cranes	CSA Z150.3	
		Mobile Lattice & Telescopic Boom Cranes	CSA Z150.3	
	Digger Derricks	Digger Derricks	ANSI A10.31	
	Vehicle-mounted Aerial Devices	Bucket Truck	CSA 225	
		Aerial Ladder	CSA 225	
	Elevating Work Platforms	Suspended		CSA Z271
				CSA Z91
		Manually Propelled	CSA B354.1	
		Self Propelled	CSA B354.2	
		Boom Type	CSA B354.4	
	Hoists	Mast Climbing Lifts	CSA B354.5	
		Air Chain	ASME HST-5	
		Air Wire Rope	ASME HST-6	
		Electric Chain	ASME HST-1	
Electric Wire Rope		ASME HST-4		
Hand Chain Operated		ASME HST-2		
Lever Operated			ASME HST-3	
			ASME B30.21	
Base-mounted Drum		CSA Z256		
Jacks & Rollers		ASME B30.1		
Vehicle	ANSI/ALI ALCTV			
Powered Mobile Equipment	Forklifts	CSA B335		
	Side Boom Tractors/Pipelayers	ASME B30.14		
	Earth Moving Equipment	SAE Codes		
Personnel Hoists	Personnel Hoists	CSA Z185		
Helicopters	Helicopters	ASME B30.12		
Lifting Devices	Below-the-Hook	ASME B30.20		
Lifting Accessories	Rigging Hardware	Shackles, Links & Rings	ASME B30.26	
		Sheaves, Spools, Drums & Blocks	ASME B30.26	
		Knots & Wire Rope Clips	ASME B30.26	
		Swivel, Turnbuckles, Eyebolts & Hoist Rings	ASME B30.26	
		Wedge Sockets	ASME B30.26	
	Hooks	Hooks	ASME B30.10	
	Wire Rope	Wire Rope	CSA G4	
	Slings	Slings	ASME B30.9	
	Load Indicating Devices	Load Indicating Devices	ASME B30.26	