	Big Ox Energy - Siouxland, LLC Safety Management System		SSC.SAFE.POL.140-014.HoistingAndRigging	
			Initial Issue Date	03/02/2017
HOISTING AND RIGGING			Revision Date:	
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Purpose:

Hoisting and rigging refers to the lifting and moving of loads using mechanical devices. The objectives of the hoisting and rigging standard is to protect personnel from injury, the environment from harm, and equipment and property from damage, specifically, to protect load operators and others in the work area, other client/government property, and the hoisting and rigging equipment itself.

Scope

Designated Operator

Big Ox Energy - Siouxland, LLC shall designate a worker to operate a hoist, crane or lifting device, and ensure that the designated operator is trained in the operation of that hoist, crane or lifting device. No worker shall operate a hoist, crane or lifting device other than the designated operator. Where the crane to be operated is a mobile crane that has a load rating greater than 5 tons, Big Ox Energy - Siouxland, LLC shall designate an operator that is competent and qualified.

With regards to operation, no worker shall be permitted to operate any crane, hoisting or lifting device without written proof of training. The operation shall have ready accessible the written proof of training at all times while operating the crane, hoisting or lifting device.


Precautions

A manufacturer's operating manual or an operating manual for the hoist, crane or lifting device is to be readily accessible to the operator. The operator is to be trained in and follow the manufacturer's recommended operating procedure. The rated load capacity (or load chart) must be clearly marked on a lifting device. The single most important rigging precaution is to determine the weight of the load before attempting a lift. Make ample allowances for unknown factors, and determine the lifting capacity and limitations of the lifting equipment being used. In cases where assessment of load weight is difficult, safe load indications or weight devices should be fitted. Unless the center of gravity of the load is below the hook, the load will shift.

Remember These Safe Practices

Hazard Assessment is to be completed prior to work commencing. If the lift is identified as being a CRITICAL LIFT, extra time to plan the coordination of the lift and to ensure everyone understands their role involved in the lift must be taken as well as any other precautions deemed necessary by the supervisor on site.

The operator shall inspect and document the mechanical lifting equipment before performing a lift. Examine all hardware, equipment, tackle, wire and fiber rope and slings before using it for signs of wear and abrasion, broken wires, kinks or cracked fittings, loose seizing and splices, flattening and corrosion and destroy defective components. All components in which the weight rating is not legible are to be destroyed as with any defective component. Do not discard without destroying as they maybe are used by someone no aware of the hazards of defects. Big Ox Energy - Siouxland, LLC and associated contractors will ensure that all rigging is assembled, used, maintained and dismantled under the supervision of a competent employee/sub-contractor and in accordance with manufactured

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specifications. The competent person performing the work must also be trained in safe rigging practices. In addition a safety latch must be on all lifting hooks or some other effective means to ensure the load does not come off the hook unexpectedly. Any hook shall be clearly labeled with a maximum load that can be easily seen, or the maximum load must be readily available to the employee/sub-contractor.

Any personnel who has reasonable cause to believe that any equipment or tackle which has been assigned to him/her is unsafe or unsuited to the job should not use or operate it until he/she has reported the defect or hazard to the supervisor, safe work procedures have been assured, and order to proceed has been issued by some person of authority who is then responsible for the safety of all personnel exposed to the condition.

All wire rope/slings must be suitable for the intended use and must be in compliance with fitting and attachments, with legislated standards. Both wire and sling must be suitable and capable of supporting the load being hoisted. In the event that a large load is being lifted more than one wire rope/sling may be required for support. Wire rope/slings will have a 10 to 1 factor of safety for hoisting personnel and a 5 to 1 factor for other loads.

The appropriate PPE Equipment must be worn at all times.

Determine the load before rigging, to ensure that the lifting equipment and hardware to be used is within the ratings and never exceed the limits.

Make certain there is ground clearance and overhead clearance for all required lifts.

The most serious incidents involving riggers and those persons handling loads is electrocution caused by the contact of the boom load line or load with electrical power lines. When working with or around mechanical lifting devices that are in close range of any power line ensure that a competent signal person is stationed at all times within view of the operator to warn him/her when any part of the machine or its load is approaching the minimum safe distance (varies depending on voltage) from the power line.


The mechanical lifting device will be in level position before use, which may require extra blocking depending on the terrain. Outrigger pads to be utilized, fully extended and locked if equipped with a locking mechanism during hoisting operations. When extending or retracting the outriggers, a signal person is required to be in the line of sight of the operator to prevent accidental contact with another object.

Use softeners for slings on sharp edges.

Use same length slings if load has an even weight at the rigging points. If the weight is unequal use different length slings to make the lift level, never shorten slings by twisting or knotting.

When lifting objects, always keep in mind the sling angles and adjust slings or change sling length to keep a greater angle.

Prepare a place to land the load. Lower the load gently and make sure it is stable before slackening the sling or chain. Prevent landing the load on the lifting hardware.

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To ensure control over the lift, a tag line may be required by competent person to control the load. For very large or long objects, you may need to utilize two tag lines with two personnel controlling the tag lines.

On worksites where there is high traffic or congestion, flag off and identify the hoist and swing areas where the lift is to be performed to ensure personnel remain outside the area. Barricades, ribbons, fencing, rope and signs can be used to identify or flag off the area.

Personnel are cleared from pinch points, never stand under the load or in the path of the load.

Competent signal person to be identified during pre-lift meeting, he must be in clear view of the operator at all times, and be wearing a highly visible striping.

If the situation doesn't permit the signal person to be in clear view of the operator, another signal person(s) may be required to transmit signals such as radios, signal lights or sounds.

Prior to giving a signal to proceed, the designated signal person must ensure there are no hazards in the vicinity.

The operator must acknowledge a stop signal from any of the personnel involved with the job.

The operator must never leave the controls with a load suspended.

A fatigued or tired operator shall not attempt to operate and will inform his superior of his condition.

Keep all rope away from flame cutting and welding operations.

Avoid contact with solvents and chemicals.

Never carry out any rigging or hoisting operation when the weather conditions are such that hazards to personnel, property or public are created.


If the visibility of the riggers or hoist crew is impaired by dust, darkness, snow, fog or rain, strict supervision of the operation must be exercised and if necessary suspended.

Extreme caution must be exercised to ensure that no part of the hoist or crane structure or tackle is shock loaded or impacted as brittle fracture of the steel can result.

Extended boom crane operators must pay out more line before extending boom.

Manufacturer's specifications will be followed when assembling or dismantling the crane or hoisting booms. Side boom policy and procedures are to be followed as outlined in the Side boom manufacturer manual.

Raising and Lowering of Workers


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This procedure applies to all personnel being hoisted in a man basket and personnel operating a crane and man basket. All operators shall be competent and trained on its usage.

- Man baskets shall only be used for the express purpose they are supplied for and no other operation.
- The lifting equipment and personal lifting are to be inspected by the competent person before each use. The results of this inspection must be documented in the log book of the lifting equipment. Ensure equipment is fully operational. Do not use man basket if it is defective. Report any defects to the supervisor.
- Hoisting of the man basket shall be performed in a slow, controlled, cautious manner with no sudden movements of the crane.
- A meeting attended by the crane operator, signal person(s) (if necessary for the lift), employee(s) to be lifted and person responsible for the task to be performed shall be held before work begins to review the lift procedures, work at hand and communication.
- The man basket shall be inspected to ensure that it is secure and properly balanced. Personnel shall not be hoisted unless the following conditions are met:
 - Outriggers have been activated to stabilize and level the load.
 - The primary attachment shall be centered over man basket.
 - Personnel occupying the man basket shall inspect and use a body harness system with lanyard appropriately attached to the lower load block on the overhaul ball or onto a structural member within the man basket capable of supporting a fall impact for employee using the anchorage.
 - Before personnel exit or enter a man basket that is not landed, it shall be secured to the structure where the work is to be performed, unless securing it to the structure creates an unsafe situation.
 - Tag lines shall be used unless their use creates an unsafe condition.
 - Personnel being hoisted shall remain in continuous sight of and in direct communication with the operator or signal person.
- All workers shall be trained in proper work practices and procedures.
- Annual Inspection
- Annual inspections are performed by a qualified inspector. Equipment that meets inspection criteria is marked with an inspection sticker indicating the date of the next inspection.
- All cranes, hoists and below-the-hook lifting devices (spreader bar, 2-4 leg chains, hooks, plate clamps, etc) are inspected annually. Equipment with expired inspection must not be used.
- Ensure that records of the maintenance, repair, inspection and testing are available for audit in a maintenance file.
- No shackle shall be subjected to a load greater than the maximum load indicated on the shackle. Ensure that all shackle pins are installed properly to prevent accidental withdrawal and a bolt shall never be used in place of the properly fitted shackle pin.
- Only Screw pin shackles will be used for lifting

OTHER REQUIREMENTS

Maintenance and inspection records (log book) must be maintained for each lifting device.
Loads shall not be passed over workers, and workers shall not stand or pass under suspended loads.
Safe working load must be clearly marked on all rigging equipment.
Rated capacity of rigging equipment shall never be exceeded.
Pre-use inspections shall be completed before rigging is used.
Any defective equipment must be removed from service immediately and supervisor notified.

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We will not utilize DOT binding chain for overhead lifting as this does not meet the regulations