	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
Crane Safety Policy			Revision Date:	Jan 1, 2017
			Revision No.	1
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 1 of 16

Introduction

This policy applies to company owned and/or contractors who supply the crane and crane operator. It is each employee's responsibility to work in a safe and efficient manner while providing skilled and professional results.

Purpose


The purpose of this program is to:

- Make all affected company workers aware of the potential hazards of crane operations on this project;
- Ensure that all affected company workers are provided with the knowledge they need to protect themselves from the potential hazards associated with crane operations; and
- Establish safe work practices and procedures for all affected company workers.

General Requirements

Fatalities and serious injuries can occur if cranes are not inspected and used properly. Many fatalities can occur when the crane boom, load line or load contacts power lines and shorts electricity to ground. Other incidents happen when workers are struck by the load, are caught inside the swing radius or fail to assemble/disassemble the crane properly.

- Crane operators qualified by training or experience shall be allowed to operate equipment and machinery by one of the following methods:
 1. Certification by an accredited crane operator testing organization
 2. Qualification by an audited employer program
 3. Qualification by the U.S. military
 4. Licensing by a government entity
- Only qualified and experienced employees should be used as spotters and crane signalers.
- A pre-lift meeting shall take place before any lift begins. This will be documented on the Pre-Lift Checklist.
- Cranes are to be operated only by qualified and trained personnel.
- A designated competent person must inspect the crane and all crane controls before use. A Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- Be sure the crane is on a firm/stable surface and level.
- During assembly/disassembly, do not unlock or remove pins unless sections are blocked and secure (stable).
- Fully extend outriggers and barricade accessible areas inside the crane's swing radius.
- Watch for overhead electric power lines and maintain at least a 10-foot safe working clearance from the lines.
- Inspect all rigging prior to use; do not wrap hoist lines around the load.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
Crane Safety Policy			Revision Date:	Jan 1, 2017
			Revision No.	1
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 2 of 16

- Be sure to use the correct load chart for the crane’s current configuration and setup, the load weight and lift path.
- Do not exceed the Working Load Limit (WLL) or load chart capacity while making lifts.
- Raise load a few inches, hold, verify capacity/balance, and test brake system before delivering load.
- Do not move loads over workers.
- Be sure to follow signals and manufacturer instructions while operating cranes.

Ground Conditions

The designated competent person will ensure that appropriate ground preparations have been provided before crane operations begin.

Assembly/Disassembly

When assembling or disassembling equipment or attachments, affected workers will comply with all applicable manufacturer’s prohibitions.

- All crane assembly and disassembly will be directed by the designated competent person and the designated qualified person. **Qualified person** means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.

Powerlines


Operating Around Power Lines (Up to 350 kV)

When power lines are present in the work area the work zone must be identified by either demarcating boundaries (with flags or a device such as a range control warning device) and prohibiting the operator from operating equipment past those boundaries or defining the work zone as the area 360 degrees around the equipment, up to the equipment’s maximum working radius.

Supervision must determine if any part of the equipment, load line, or load, if operated up to the equipment’s maximum working radius in the work zone, could get closer than 20ft to a power line. If there is a potential for the equipment to contact the power line the requirements of Option 1, Option 2, or Option 3 must be met.

Option 1: De-energize and Ground

Confirm with the utility owner/ operator that the power line has been deenergized and visibly grounded at the work site.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
			Revision Date:	Jan 1, 2017
			Revision No.	1
Crane Safety Policy				
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 3 of 16

Option 2: 20ft Clearance

Ensure that no part of the equipment, load line, or load (including rigging) gets closer than 20ft to the power lines by implementing the measure listed below in *Preventing Encroachment/ Electrocutation*


Option 3: Table A Clearance

If option 3 is the only feasible option the Safety Department must be contacted. When using option 3 the lines voltage must be determined first and then the minimum clearance distance can be determined. If it is determined that any part of the equipment including the load line or load could get closer than the minimum clearance distance then preventive measure must be implemented that are listed in *Preventing Encroachment/ Electrocutation*.

Preventing Encroachment and Electrocutation

Where encroachment precautions are required under option 2 and option 3, all of the following requirements must be met:

- 1) Conduct a planning meeting with the operator, supervisor, and crew and any other workers working in the assembly/ disassembly area to review the location of the power lines and steps that will be implemented to prevent encroachment/ electrocutation.
- 2) Use nonconductive tag lines
- 3) Erect and maintain an elevated warning line, barricade, or line of signs, in the view of the operator, equipped with flags or similar high visibility markings, at 20ft from the power lines (if using Option 2) or at the minimum approach distance in option 3. If the operator is unable to see the elevated warning line, a dedicated spotter must be used in addition to using one of the following measures:
 - Use dedicated spotter who is in continuous contact with the operator. The dedicated spotter must be equipped with visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include but not limited to a clearly visible line painted on the ground, a visible line of stanchions, or a line of sight land mark. Clearly visible painted line is preferred. The designated spotter must be positioned to effectively gauge the clearance distance. Effective means of communication must be established between the operator and the spotter.
 - A proximity alarm set to give the operator sufficient warning to prevent encroachment.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
Crane Safety Policy			Revision Date:	Jan 1, 2017
			Revision No.	1
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 4 of 16

- A device that automatically warns the operator when to stop movement, such as a range control device.
- A device that automatically limits range of movement and set to prevent encroachment.
- An insulating link/device that is listed or labeled, or accepted by a Nationally Recognized Testing Laboratory installed at a point between the end of the load line (or below) and the load.

Operating Around Power Lines (Over 350 kV)


When operating near power lines above 350 kV and under 1000 kV, wherever the distance of 20ft is specified, the distance of 50ft must be substituted. ALL OTHER REQUIREMENTS STILL APPLY AS LISTED IN OPERATING UNDER 350KV.

For power lines over 1000kV minimum clearance distance must be established by the utility owner/ operator.

Inspections

Modified and/or repaired equipment will be inspected by the designated qualified person after the modifications and/or repairs have been completed, but before initial use.

- Upon completion of assembly, the equipment will be inspected by the designated qualified person to assure that it is configured in accordance with manufacturer's equipment criteria.
- Prior to each shift, the designated competent person will perform a visual inspection of the equipment that will be used.
- Once each month, all of the equipment that is in service will be inspected by the designated qualified person in accordance with the crane inspection criteria established at 29 CFR 1926 Subpart CC.
- Once each year, the designated qualified person will conduct a comprehensive inspection of all equipment that is in service in accordance with the crane inspection criteria established at 29 CFR 1926 Subpart CC.
- Safety devices are required to be on all equipment and must be in proper working order before operations begin. If any of the devices are not in proper working order the equipment must be taken out of service and operations must not resume until the device is working properly again. Examples of safety devices may include: crane level indicator, boom stops, jib stops, foot pedal brake locks, horns, etc...
- When the equipment is used frequently enough that there is a reasonable possibility of damage or excessive wear, affected workers will stop using the equipment and take it out of service until it passes inspection by the designated qualified person based on the inspection criteria established at 29 CFR 1926 Subpart CC.

	Health and Safety Policy	Section No:	28
		Initial Issue Date	1992
Crane Safety Policy		Revision Date:	Jan 1, 2017
		Revision No.	1
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page: Page 5 of 16

- Equipment that has been idle for three (3) months or more must pass inspection by the designated qualified person based on the inspection criteria established at 29 CFR 1926 Subpart CC before it can be used.

Qualifications of Maintenance and Repair Employees

Maintenance, inspection and repair personnel are allowed to operate the equipment only under the supervision of the designated qualified person. Modifications or additions that may affect the capacity or safe operation of the equipment must not be made without written approval from the manufacturer or approval from a registered professional engineer.

Wire Rope Inspections

- Prior to each shift, the designated competent person will perform a visual inspection of any wire rope that is intended for use during the subsequent shift.
- Once each month, all of the wire rope that is in service will be inspected by the designated qualified person in accordance with the wire rope inspection criteria established at 29 CFR 1926 Subpart CC.
- Once each year, the designated qualified person will conduct comprehensive inspections of all wire rope that is in service in accordance with the wire rope inspection criteria established at 29 CFR 1926 Subpart CC.

Wire Rope Selection and Installation


- The designated competent person will ensure that original equipment wire rope is selected and installed in accordance with the requirements established at 29 CFR 1926 Subpart CC.
- The designated competent person will ensure that selection of replacement wire rope is in accordance with the recommendations of the wire rope manufacturer, the equipment manufacturer, or the designated qualified person.

Operational Aids

All manufacturer procedures applicable to the operational functions of equipment, including its use with attachments, must be complied with. The operator shall have access to procedures applicable to the operation of the equipment. Procedures include rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions and operator's manual. The designated competent person will ensure that the following operational aids, when applicable, are present on all equipment:

- Boom hoist limiting device;
- Luffing jib limiting devices;
- Boom angle or radius indicator;
- Jib angle indicator;
- Boom length indicator;
- Load weighing and similar devices.

All affected workers will comply with all manufacturer procedures applicable to the operational functions of equipment, including its use with attachments.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
			Revision Date:	Jan 1, 2017
			Revision No.	1
Crane Safety Policy				
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 6 of 16

Authority to Stop Operations

Whenever there is a concern about safety, the designated equipment operator has the authority to stop and refuse to handle loads until the designated competent person has determined that the safety concern has been resolved.

Ordinary Lift Plan

The designated leader shall ensure that the following pre-lift planning issues are addressed, as applicable, prior to the lift (a written plan beyond normal site work planning and control documents is not required, though may be desirable for more complex lifts). A Pre-Lift Checklist may be used as documentation that a pre-lift meeting and pre-lift plan is in place. Also, for construction lifts involving multiple mobile cranes or temporarily installed overhead cranes, a written lift plan is required (refer 29 CFR 1926.1432).

- Identify the item to be moved, its intrinsic characteristics (e.g., load integrity, loose materials, liquids), weight, dimensions, its center of gravity, its ability to support imposed lifting forces (both the load and any lift points), and whether it contains any hazardous or toxic materials.
- Validate the loads path and clearances.
- Identify lifting equipment and rigging to be used by type and rated capacity.
- Prepare rigging sketches, as necessary.
- Evaluate the work area for conditions impacting crane setup operations (e.g., weather, soil bearing capacity, underground utilities, clearances to power lines and other structures). Identify any special or site-specific operating procedures and special instructions.


Critical Lift Plan

Any time a critical lift takes place, all safety concerns must be addressed and controls in place to eliminate identified hazards. Permits, if required, must be completed and approved per customer procedures.

Critical Lift Determination

A designated person shall classify each lift into one of the categories (ordinary, critical, personnel or pre-engineered production) prior to planning the lift. A lift shall be classified critical if any of the following conditions are met:

- If loss of control of the item being lifted would likely result in the declaration of an emergency as defined by the facility's emergency plan or construction site emergency plan.
- The load item is unique and, if damaged, would be irreplaceable or not repairable and is vital to a system, facility or project operation.
- The cost to replace or repair the load item, or the delay in operations of having the load item damaged would have a negative impact on facility, organizational, or budgets to the extent that it would affect program commitments.
- If mishandling or dropping of the load would cause any of the above noted consequences to nearby installations or facilities.
- For steel erection, a lift shall be designated as a critical lift if:
 1. The lift exceeds 75 percent of the rated capacity of the crane or derrick OR

	Health and Safety Policy	Section No:	28
		Initial Issue Date	1992
Crane Safety Policy		Revision Date:	Jan 1, 2017
		Revision No.	1
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page: Page 7 of 16


2. The lift requires the use of more than one crane or derrick. (§1926.751)

- Further site-specific criteria may be developed to supplement those cited above and may include criteria imposed by site or project safety basis requirements as well as lifting loads which require exceptional care in handling because of size, weight, close-tolerance installation or high susceptibility to damage as well as lifts using multiple pieces of lifting equipment.
- Though lifting personnel may meet the above criteria, personnel lifts shall not be considered critical lifts and shall be conducted in accordance with 29 CFR 1926.1431 and ASME B30.23.

Critical Lift Requirements

Ensure that the requirements are met for ordinary lifts specified in each section of this standard for each particular equipment category. The operating organization shall appoint a Lift Supervisor for critical lifts. The Lift Supervisor shall be present at the lift site during the entire lifting operation. The Lift Supervisor shall:

- Have the necessary knowledge and experience of the specific type of equipment and assigned lifting operations.
- Understand the site rules and procedures addressing:
 - Administrative requirements for lifting operations.
 - Personnel assignments and responsibilities commensurate with job requirements.
 - Selection of proper slings, rigging hardware, and lifting equipment.
 - Recognition and control of hazardous or unsafe conditions.
 - Job efficiency and safety.
 - Critical-lift determination and documentation.
- The Lift Supervisor shall ensure that a documented pre-job plan or procedure is prepared by qualified person(s) that defines the operation and includes the following:
 - Identify the item to be moved, its intrinsic characteristics (e.g., load integrity, loose materials, liquids), weight, dimensions, its center of gravity, its ability to support imposed lifting forces (both the load and any lift points), and whether it contains any hazardous or toxic materials.
 - Identification of operating equipment to be used by type and rated capacity (e.g., mobile crane, overhead crane, forklift).
 - Rigging sketches and/or descriptions.
 - Operating procedures and special instructions to operators including rigging precautions and safety measures to be followed as applicable.
- All rigging equipment used in critical lifts (i.e., slings, below-the-hook lifting devices, and rigging hardware) shall be proof load tested in accordance with applicable ASME standards.
- Experienced operators who have been trained and qualified to operate the specific equipment to be used shall be assigned to make the lift.
- Only designated, qualified signalers shall give signals to the operator. However, the operator shall obey a STOP signal at all times, no matter who gives the signal.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
Crane Safety Policy			Revision Date:	Jan 1, 2017
			Revision No.	1
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 8 of 16


- The procedure and rigging sketches shall be reviewed and approved by a qualified person, the responsible manager (or designee) and the responsible oversight organization (such as the safety or engineering departments) before the lift is made. Subsequent revisions shall be approved per site specific procedures.
- A pre-lift meeting involving participating personnel shall be conducted prior to making a critical lift. The critical lift plan/procedure shall be reviewed and questions shall be resolved.
- Prior to executing a critical lift, a qualified person shall verify that the as-installed rigging matches the configuration in the approved lifting plan.
- If required by the critical lift procedure, a practice lift shall be done before the critical lift. Conditions for a practice lift should closely simulate actual conditions involving: weight, rigging selection and configuration, load movement path, and other relevant factors. Practice lifts should be done by the same crew using the same lifting equipment that will be used in the lift.
- Although individual plans are generally prepared for critical lifts, multi-use plans may be employed to accomplish recurrent critical lifts. For example, a multi-use plan may be used to lift an item or series of similar items that are handled repeatedly in the same manner. However, if the lifting equipment or rigging must change to accomplish the lift, the critical lift plan must be revised and approved accordingly.

Signal Person Qualifications

- The designated competent person will obtain documentation from a third-party qualified evaluator showing that the signal person meets the qualification requirements before that signal person gives any signals to operators.
- The designated competent person will ensure that the signaler qualification documentation is always available at the jobsite. The documentation will specify each type of signaling the signal person is qualified to perform.
- Workers who do not meet the qualification requirements are not permitted to work as signal persons. This includes those who have signal person qualification credentials, but whose actions indicate that they are not performing signaling as required.

Signaling


- A qualified signal person will be used in each of the following situations:
 1. When the point of operation is not in full view of the operator;
 2. When the view in the direction of travel is obstructed when the equipment is traveling; and/or
 3. When site-specific safety concerns are an issue because either the operator or the person handling the load determines that it is necessary.
- Signals to the operator will be given by standard hand signals, unless, the signals cannot be seen by the operator.
- All directions given to the operator by the signal person will be given from the operator's direction perspective.
- When standard hand signals can't be used safely, radios will be used for communication.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
			Revision Date:	Jan 1, 2017
			Revision No.	1
Crane Safety Policy				
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 9 of 16

- When radios are used, the operator and the signal person chosen for the project will be able to effectively communicate in the same language.
- The devices used to transmit signals will be tested on site before beginning operations to ensure that the signal transmission is effective, clear and reliable.
- Signal transmission will be performed through a dedicated channel, except where the crane is being operated on or adjacent to railroad tracks, and the actions of the equipment operator need to be coordinated with the movement of other equipment or trains on the same or adjacent tracks.
- All operators will use a hands-free system to receive signals and communicate with the signal person.
- Before beginning operations, the operator and signal person will contact one other and agree on the voice signals to will be used. Once the voice signals are agreed upon, further meetings are not needed unless: a worker is added or substituted, there is confusion about the voice signals, or a voice signal is to be changed.
- Each voice signal will contain the following three elements, given in the following order.
 1. Function (such as hoist, boom, etc.) direction;
 2. Distance and/or speed; and
 3. Function stop command.
- If the ability to transmit signals is interrupted during operations, the designated equipment operator will safely stop all operations until the ability to transmit is re-established and proper signals can be given and understood.
- If the designated equipment operator becomes aware of a safety problem and needs to communicate with the designated signal person, the designated equipment operator will safely stop all operations. Operations will not resume until both parties agree that the problem has been resolved.
- Only the designated signal person may give signals to the operator, except in the case of an emergency.
- Any worker may give the emergency stop signal if an emergency occurs. The designated equipment operator will safely stop all operations any time the emergency stop signal is given.
- Before lift operations begin, the designated competent person will post a hand signal chart on the equipment or in a conspicuous place close to hoisting operations.

The signal person must always

- Be in clear view of the crane operator.
- Have a clear view of the load at all times.
- Keep people outside the load travel path.
- Ensure the load does not pass above people.
- Keep the crane away from power lines.
- Watch for other potential hazards during the lift.
- There should be only one designated signaler at a time. More than one will only confuse the operator.
- Wear a bright vest, or different colored hard hat that will help the operator identify who is currently in charge of signaling.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
			Revision Date:	Jan 1, 2017
			Revision No.	1
Crane Safety Policy				
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 10 of 16

- Communication between the crane operator and the signal person shall be maintained continuously during all crane movements.
- If at any time communication is disrupted, the operator shall stop all crane movements until communication is restored.
- If there are any concerns regarding the signal or needs to communicate with the signal person, the operator shall stop all crane movement.
- Crane movement shall not resume until the operator and the signal person agree the issue has been resolved.
- If it is desired to give instructions other than those provided by the established signal system, the crane movements shall be stopped.

Basics when using radio commands:

- Discuss the lift plan with the operator and agree on signals to be used.
- All directions shall be given from the operator's direction perspective.
- Use a secure frequency, free of distracting chatter.
- Use specific names not just titles. (i.e. "Jim" or "Tom Smith" as opposed to just "operator").
- Command names should be same as the hand signal names, (i.e. "Use whip line", "Boom down", "Boom Up", etc.).
- Each series of voice signals shall contain three elements stated in the following order:
 - Function and direction
 - Distance and/or speed
 - Function stop (i.e. "swing right 15 feet, 10 feet, 5 feet, 2 feet, swing stop)
- Once lift has begun, the signaler should never break communication with the operator. This is referred to as "constant communication".
- Never un-key the mic while the load is moving. The signaler should repeat the command to let the operator know everything is alright: (i.e. "slowly down, slow, slow....").
- If the signaler breaks communications (un-keys mic), the operator should stop immediately.

Hand Signals

Hand signal charts must be either posted on the equipment or conspicuously posted in the vicinity of the hoisting operations. **(see chart on next page)**

Crane Safety Policy

Mobile Crane Hand Signals



Hoist



Lower



Use Main Hoist



Use Whipline



Raise Boom



Lower Boom



Move Slowly



**Raise the Boom
Lower the Load**



**Lower the Boom
Raise the Load**



Swing



Stop



Emergency Stop



Travel



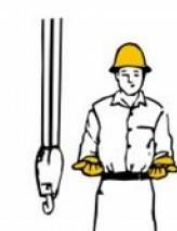
Dog Everything



**Travel
(Both Tracks)**



**Travel
(One Track)**



Extend Boom




Retract Boom



**Extend Boom
(One Hand)**



**Retract Boom
(One Hand)**

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
			Revision Date:	Jan 1, 2017
			Revision No.	1
Crane Safety Policy				
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 12 of 16

Rigger Qualifications

- The designated competent person will ensure that any worker being considered for designation as a qualified rigger has the knowledge, experience and expertise to serve in that capacity.
- The designated competent person will ensure that the documentation used to help determine that a worker is a designated qualified rigger is always available at the jobsite. The documentation will specify the types of rigging that the rigger is qualified to perform.
- Workers who do not meet the qualification requirements are not permitted to work as qualified riggers, including those who have qualified rigger credentials, but whose actions indicate that they are not performing rigging operations as required.

Fall Protection


The designated competent person will ensure that adequate fall prevention and/or protection is provided any time a worker is exposed to a fall of 6 feet or more to a lower level or 15 feet for the assembly and disassembly of lattice boom cranes.

Work Area Controls

- The designated competent person will take measures to protect workers from reasonably foreseeable risks of being struck by and/or pinched or crushed by the equipment's rotating superstructure.
- All affected workers will be trained to recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure.
- The designated competent person will ensure that control lines, warning lines, railings or similar barriers are erected to mark the boundaries of the hazardous areas, unless it is infeasible to do so. Where it is infeasible to erect barricades, the hazard area will be marked by a combination of warning signs (such as "Danger-Swing/Crush Zone") and high visibility markings on the equipment. The designated competent person will ensure that all affected workers are trained with regard to what these markings signify.
- Before any worker goes to a location in the hazard area that is out of the view of the operator, the worker will ensure that the operator is informed that he is going to that location.

Keeping Clear of the load

- Where available, affected workers will use hoisting routes that minimize their exposure to hoisted loads.
- While a suspended load is not moving, only the following workers will be allowed in the fall zone.
 - Workers engaged in hooking, unhooking or guiding a load; and
 - Workers engaged in the initial attachment of the load to a component or structure.
- When affected workers must be in the fall zone the following will apply:
 - The materials being hoisted will be rigged to prevent unintentional displacement;

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
			Revision Date:	Jan 1, 2017
			Revision No.	1
Crane Safety Policy				
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 13 of 16


- Hooks with self-closing latches or their equivalent will be used; and
- The rigging will be done only by the designated qualified rigger.
- Only workers receiving the load are allowed in the fall zone when the load is being landed.
- During tilt up or tilt down operations, the following will apply:
 - No worker may be directly under the load; and
 - Only workers who are essential to the operation can be in the fall zone, but may never be directly under the load. A worker is considered to be an “essential worker” only when it is infeasible for that worker to perform the operation from outside the fall zone and he is physically guiding the load, closely monitoring and giving instructions regarding the loads movement, or must detach the load or initially attach the load to another component or structure.

Free-Fall and Controlled Lowering

- Use of equipment in which the boom is designed to free fall is prohibited when:
 - A worker is in the fall zone of the boom or load;
 - The load or boom is directly over a power line or other hazardous area;
 - The load is over a shaft in which workers are present;
 - The load is over a cofferdam in which workers are present; or
 - Lifting operations are taking place in a refinery or a tank farm.
- Where the use of equipment with a boom that is designed to free fall is prohibited, the boom hoist will have a secondary mechanism or device designed to prevent the boom from falling in the event the primary system fails.
- Hydraulic telescoping booms will have an integrally mounted holding device to prevent the boom from retracting in the event of hydraulic failure.
- When a worker is directly under the load being hoisted, or when the load is directly over a power line or any other hazardous areas, controlled load lowering is required and free fall of the load line is prohibited.

Hoisting Personnel – Personnel Platforms

- Lifting equipment will not be used to hoist workers.
- Personnel platforms will be used only as a last resort. All other avenues of elevated work should be explored and eliminated before working from a personnel platform. (except in Steel Erection)
- The number of employees occupying the personnel platform shall not exceed the manufacturer’s load rating specification.
- Personnel platforms shall be used only for employees and their tools necessary to do their work, and shall not be used to hoist materials and/or equipment.
- Materials and tools for use during a personnel lift shall be secured to prevent displacement.
- Materials and tools for use during a personnel lift shall be evenly distributed within the confines of the platform while the platform is suspended.
- Employees shall keep all parts of the body inside the platform during raising, lowering, and positioning. This provision does not apply to an occupant of the platform performing the duties of a signal person.

	Health and Safety Policy	Section No:	28
		Initial Issue Date	1992
Crane Safety Policy		Revision Date:	Jan 1, 2017
		Revision No.	1
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page: Page 14 of 16

- Before employees exit or enter a hoisted personnel platform that is not landed, the platform shall be secured to the structure where the work is to be performed, unless securing to the structure creates an unsafe situation.
- Hoisting of employees shall be promptly discontinued upon indication of any dangerous weather conditions or other impending danger.


Overhead Jib and Gantry Cranes

- Overhead jib and gantry cranes will be installed per manufacturer's directions.
- Daily visual inspections before use will include:
 - All functional operating mechanisms
 - Operation of limit switch and associated components
 - Host braking system for proper operation
 - Deterioration or leakage in lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems
 - Hooks with deformation or cracks
 - Hoist chains
 - Cracks in welds or base structure
- Overhead cranes will be inspected monthly and documented by a competent person
- Complete annual inspections will be performed by a qualified crane company.
- Any overhead jib or gantry crane/hoist that does not pass inspection will be immediately tagged out of service and reported to the appropriate supervisor.
- Repairs will be made by a qualified person.
- Before performing any maintenance or electrical maintenance on the equipment, de-energize the main switch supplying power to the equipment. Follow all pertaining lockout tagout procedures.
- Hoist operators shall read the operation manuals and heed all instruction and warning labels. They will be required to be familiar with the hoist and hoist controls before being authorized to operate the hoist or lifting system.


Training

The employer must train each operator and crew member assigned to work with the equipment on all of the following:

- The procedures to be followed in the event of electrical contact with a power line. Such training must include:
 - Information regarding the danger of electrocution from the operator simultaneously touching the equipment and the ground.
 - The importance to the operator's safety of remaining inside the cab except where there is an imminent danger of fire, explosion, or other emergency that necessitates leaving the cab.
 - The safest means of evacuating from equipment that may be energized.
 - The danger of the potentially energized zone around the equipment (step potential).
 - The need for crew in the area to avoid approaching or touching the equipment and the load.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
			Revision Date:	Jan 1, 2017
			Revision No.	1
Crane Safety Policy				
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 15 of 16

- Safe clearance distance from power lines.
- Power lines are presumed to be energized unless the utility owner/operator confirms that the power line has been and continues to be de-energized and visibly grounded at the worksite.
- (Power lines are presumed to be un-insulated unless the utility owner/operator or a registered engineer who is a qualified person with respect to electrical power transmission and distribution confirms that a line is insulated.
- The limitations of an insulating link/device, proximity alarm, and range control (and similar) device, if used.
- The procedures to be followed to properly ground equipment and the limitations of grounding.
- Employees working as dedicated spotters must be trained to enable them to effectively perform their task.
- Employees who may be exposed to fall hazards while on, or hoisted by equipment under this section.
- Signal persons. The employer must train each employee who will be assigned to work as a signal person who does not meet the requirements of Sec. 1926.1428(c) in the areas addressed in that paragraph
- Competent persons and qualified persons. The employer must train each competent person and each qualified person regarding the requirements of this subpart applicable to their respective roles.
- Crush/pinch points. The employer must train each employee who works with the equipment to keep clear of holes, and crush/pinch points and the hazards pertaining to those tasks.
- Tag-out. The employer must train each operator and each additional employee authorized to start/energize equipment or operate equipment controls (such as maintenance and repair employees), in the tag-out and start-up procedures.

	Health and Safety Policy		Section No:	28
			Initial Issue Date	1992
			Revision Date:	Jan 1, 2017
Crane Safety Policy			Revision No.	1
Prepared by: MSC Safety Solutions	OSHA Standard	1926.1400	Page:	Page 16 of 16

Overlapping Boom Operations

At periods of time when two cranes boom on site are placed within each other's working swing radius there shall be several provisions that apply to prevent possible contact of the two booms.

Provisions shall be made to prevent contact between the crane booms or crane loads as follows:

- 1) Crane operators should attend pre-task meetings on daily basis and coordination shall be discussed between crews and the areas that work will be conducted for that day. Special emphasize on booms contacting shall be discussed.
- 2) Both operators shall have radio dedicated communication available at all times. Spare batteries shall be readily available.
- 3) Both cranes/ operators have been instructed that loads being lifted shall swing to the opposite side of where potential contact could occur. There will be occasions when loads are being hoisted and will be inside of the over lapping zone.
- 4) Prior to an operator entering the overlap zone with a boom, the operator shall inform the operator of the other crane of his intentions to enter the zone. Operators shall also inform each other of their intentions when leaving the zone. These will be done by radio contact.
- 5) Radio contact will be maintained by Foremen, Operator and signalperson by a designated channel. This channel shall be discussed during morning pre-task meetings.

Loads are not to be hoisted until operator has specific directions from foreman or supervisor to do so. Operators shall be given clear distinct signals on where loads shall be swung. In the event of emergency circumstances the operator shall exercise his/her best judgments to prevent possible damage/ loss/ or injury to equipment/ property and employees.

Training Administration

- The employer must evaluate each employee required to be trained under this subpart to confirm that the employee understands the information provided in the training.
- The employer must provide refresher training in relevant topics for each employee when, based on the conduct of the employee or an evaluation of the employee's knowledge, there is an indication that retraining is necessary.
- Whenever training is required under subpart CC, the employer must provide the training at no cost to the employee.