



UNION PACIFIC RAILROAD COMPANY ENGINEERING DEPARTMENT ADDENDUM

Contractor Minimum Safety Requirements

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Union Pacific Railroad's Contractor Minimum Safety Requirements document is incorporated by reference.

Depending on the type of work and the work location, there are many specific safety regulations, including but not limited to OSHA, FRA, FMCSA requirements, that Union Pacific requires its Contractors to follow. Contractors should also be prepared to comply with all safety requirements found in their agreements to perform work for Union Pacific.

All Union Pacific rules and/or policies in effect at the time work is performed are controlling, including rules that are not listed in this document. Please refer to the applicable General Orders, and other official publications of policy or instructions. Contractor Personnel are responsible for knowing and complying with rules that apply to their particular job responsibilities.

ON TRACK AND OFF TRACK WORK EQUIPMENT:

It is the responsibility of the Contractor-In-Charge to ensure that all on track and/or off track work equipment is in a safe condition to operate. There must be a written inspection process regarding daily, weekly and other periodic inspections for work equipment operated on Union Pacific property, including inspections mandated by FRA, AAR, OSHA and/or other government agencies. In addition to the inspection process there must be a written maintenance process that includes timelines regarding resolution of safety sensitive defects. If, in the opinion of the Railroad Representative, any of the Contractor equipment is unsafe for use, the Contractor shall remove such equipment from the railroad's property. The Contractor-In-Charge must ensure that there is a written training and qualification process for operators and support personnel regarding operation of such equipment. Written documentation of training and qualification must be carried by Contractor personnel. In addition:

- The operators of all work equipment must be properly trained and competent in the safe operation of the equipment. Operators must be:
 - Familiar and comply with OSHA regulations on lockout/tagout of work equipment.
 - Familiar and comply with FRA Regulation Title 49CFR214 Subpart D dealing with Roadway Maintenance Machine Safety.
 - Trained in and comply with the applicable operating rules if operating any hy-rail equipment on-track.
 - Trained in and comply with the applicable air brake rules if operating any equipment that moves rail cars or any other rail-bound equipment.
- The operators manual, which includes instructions for safe operation, must be kept with each machine.
- All self-propelled equipment is equipped with fire extinguisher and audible back-up warning device.
- Unless otherwise authorized by the Railroad Representative, all unattended equipment is parked a minimum of 25 feet from any track and minimum of 250 feet from any road crossing. Before leaving any equipment unattended, the operator must stop the engine and properly secure the equipment against movement.
- Cranes are equipped with three orange cones that will be used to mark the working area of the boom and load and the minimum clearances to overhead power lines. All overhead lines are considered to be high voltage.

- All moves are well communicated by the Contractor-In-Charge and coordinated with other Contractor workers and the Railroad Representative at the job site. Emergency signals to stop movements may be given by anyone.
- No equipment is moved or coupled into while under any color signal protection of workmen.
- No handbrakes are released on rolling equipment unless authorized by Railroad Representative.
- No derails are applied or removed without Railroad Representative permission.
- The Contractor shall provide its own Hazardous Energy Control (Lock-out/Tag-out) procedures and devices to prevent injury to Railroad and Contractor workers from unexpected energization, start-up, or release of stored power in machines with which they are working.
- The Contractor shall comply with all requirements of the U.S. Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.147 on controlling hazardous energy

WORKING AROUND LIVE TRACKS (RED ZONES):

Prior to beginning work on live track the Contractor-In-Charge must notify a Railroad representative and a job briefing must be conducted with the Railroad representative. Engineering Department Contractors are governed by FRA Roadway Worker Protection regulations, referenced in 49CFR214, Subpart C, which requires some form of On-Track Safety prior to fouling any track.

Red Zones are defined as that area within an arms length of the track, or any physical position, which places the worker in a life-threatening situation. Any questions that arise related to working in the Red Zone should be directed to the Railroad Representative.

ON-TRACK SAFETY:

The Contractor is responsible for compliance with the Federal Railroad Administrations Roadway Worker Protection regulations (49CFR214, Subpart C) and UPRRs On-Track Safety rules. Under 49CFR214, Subpart C, railroad contractors are responsible for the training and qualifications of their workers on these regulations. Contractor workers must have documentation of their training and qualifications while on the work site. At a minimum, each contractor worker must be trained as a Roadway Worker. Additional training and qualification requirements for the positions of Machine Operator, Lookout or Lone Worker must be met for those contractor workers performing those functions.

In addition to the instructions contained in FRAs Roadway Worker Protection regulations, all contractor workers must:

- Maintain a distance of at least 25 feet to any track unless the railroad's EIC is present to authorize movements.
- Wear an orange, reflectorized vest or similar orange, reflectorized workwear approved by the railroad's EIC. (High visibility safety apparel must be worn when working adjacent to a Federal highway.)
- Participate in a job briefing that will specify the type of On-Track Safety for the type of work being performed. Contractors must take special note of limits of track authority, which tracks may or may not be fouled, and clearing the track. They will also receive

special instructions relating to the work zone around machines and minimum distances between machines while working and traveling.

LOCKOUT / TAGOUT PROCEDURES ON MAINTENANCE OF WAY (MOW) EQUIPMENT:

The Contractor-in-Charge must be aware of and Contractor workers must adhere to applicable State, Federal and Railroad rules and regulations on lockout/tagout.

A. Lockout/Tagout Procedures During Work:

Follow these steps when servicing, maintaining, adjusting, or repairing equipment during the course of work when On-Track Safety has been established:

1. Notify the person in charge and the equipment operators on both sides of your equipment that a lockout/tagout is in progress. Let them know where you are located and in which direction you are working, so they will know whether you are behind them or in front of them.
2. Place 1 orange cone in the center of the track at least 15 feet from each end of your equipment.
Note: Other equipment operators are required to stop when approaching an orange cone and may not proceed until it is removed.
3. Tagout the equipment according to the procedures in Section D.
4. After completing the maintenance or repair, promptly notify the person in charge and all affected personnel that you are discontinuing the lockout/tagout process.
5. Remove the cones and tags.

B. Lockout/Tagout Procedures When Equipment Is Tied Up:

When equipment is tied up on a track, follow these steps to service, maintain, adjust, or repair equipment:

1. Ensure that switches leading to the equipment have been lined against the track the equipment is on.
 - Ensure that switches are spiked, clamped, tagged, and locked to prevent movements onto that track.
If the switches cannot be locked, or if it is necessary to use part of the track for train or track car movements, you may protect equipment with a derail that is locked in the derailing position 150 feet or as conditions warrant in advance of the equipment.
2. Apply your scissors lock, personal padlock, and tag to these switches or derails. Note: The scissors lock allows others working on equipment to place their personal padlocks and tags to ensure their own lockout/tagout protection.
EXCEPTION: When equipment is tied up under the direct supervision of a person in charge:
 - The person in charge may provide protection as long as he or she can prevent any movements onto that track.
 - Before beginning work, the operator or mechanic must inform the person in charge of the operator or mechanic's presence and request permission to work on the equipment.

- The person in charge must not release the limits or allow movements onto the track until he or she communicates with all affected personnel to make sure they are in the clear.
3. Place 1 orange cone on each side of your equipment.
EXCEPTION: If other equipment is within 15 feet, place the orange cones as far in advance of your equipment as possible.
 4. Tagout the equipment according to the procedures in Section D. Note: If other people are present, conduct a job briefing to discuss the lockout/tagout process being used.
 5. After completing the maintenance or repair, promptly notify the person in charge and all affected personnel that you are discontinuing the lockout/tagout process.
 6. Remove the cones, tags, and locks.
 7. When the last lock is removed, remove the scissors lock.

C. Tagout Procedures Inside Shops:

When performing service, maintenance, adjustments, or repair inside a shop, place the MW roadway machine and work equipment in a safe area and secure it according to the general tagout procedures described in Section D.

D. General Tagout Procedures:

Follow these steps to tagout equipment:

1. Apply the equipment's parking brake.
2. Test the brake to make sure it holds the equipment in position. If the brake does not hold, or if you are not sure it will hold, block the equipment to prevent any unexpected movement.
3. Lower all hydraulic components to the ground or secure them with their locking devices.
4. Mechanically secure all equipment components in a safe condition.
Note: Components must be mechanically locked or blocked to prevent any movement of the equipment or component, which could endanger workers in the area.
5. Shut down the equipment at the operator's controls.
6. Attach a railroad approved "Do Not Operate" tag at the operator's controls for each worker.
7. Remove the key from the ignition switch of engine powered equipment such as welders, light plants, small compressors, etc. If the ignition key does not remove all electrical control sources, or if the equipment does not have an ignition key switch, place the main battery switch in the OPEN position and secure the battery box. Attach a "Do Not Operate" tag. If the equipment does not have a battery disconnect switch, disconnect the battery leads and attach a "Do Not Operate" tag to the battery lead. Place as many tags as necessary to ensure that the equipment will not be started or energized unexpectedly.
8. Remove any sources of stored energy, including:
 - Electrical
 - Mechanical
 - Hydraulic
 - Pneumatic
 - Chemical
 - Thermal
 - Any other sources that may activate a component

9. Follow any special manufacturer procedures to ensure that the equipment is safe for performing maintenance or service.
10. Test the security of the tagout. If the equipment cannot be started and the components cannot be energized, you can start maintenance or service safely.

E. Unsafe Equipment:

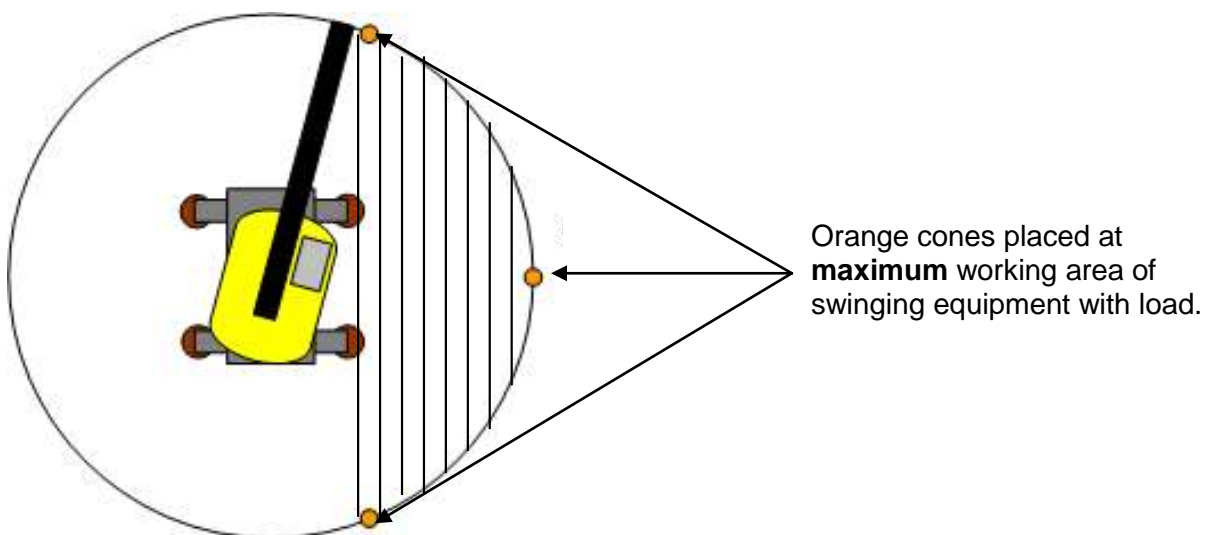
Place a red tag marked "Unsafe" on equipment that is removed from service and unsafe to use. Sign and date the tag. Only the person who places this tag should remove it.

EXCEPTION: If the person who placed the tag cannot be located, the person in charge may remove the tag, but only after a mechanic thoroughly inspects the equipment to ensure it is safe to operate.

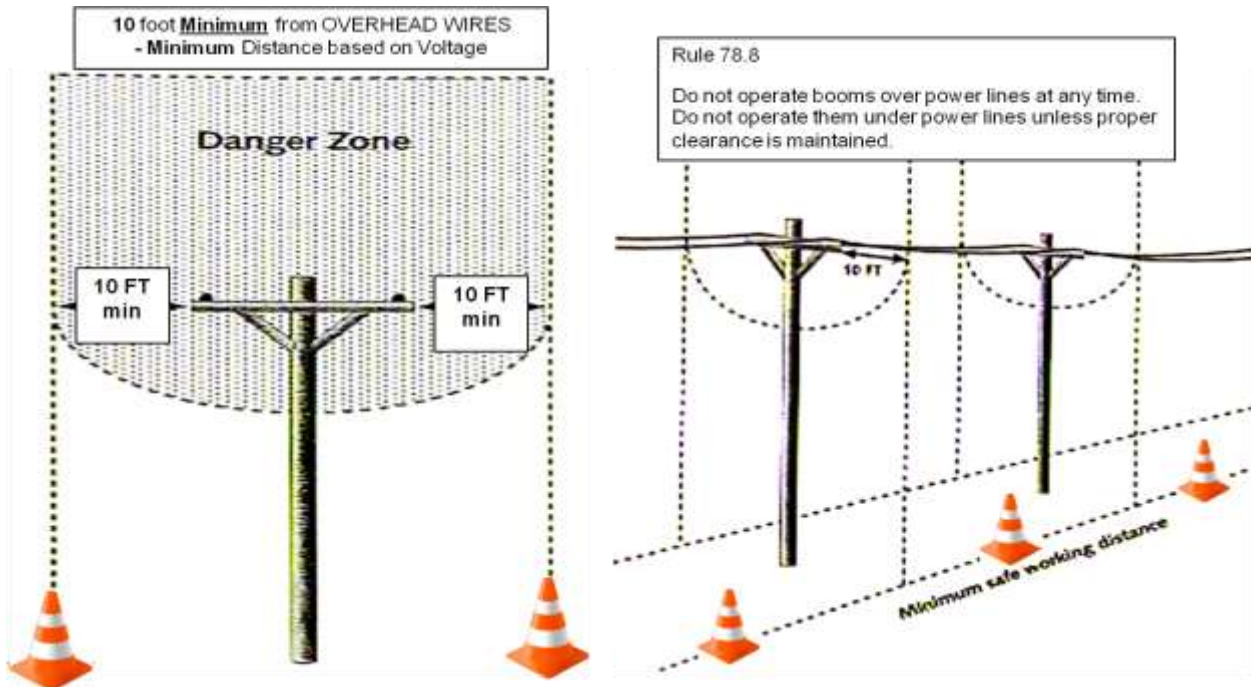
ORANGE CONE POLICY:

There are five required uses of orange cones in the Engineering Department:

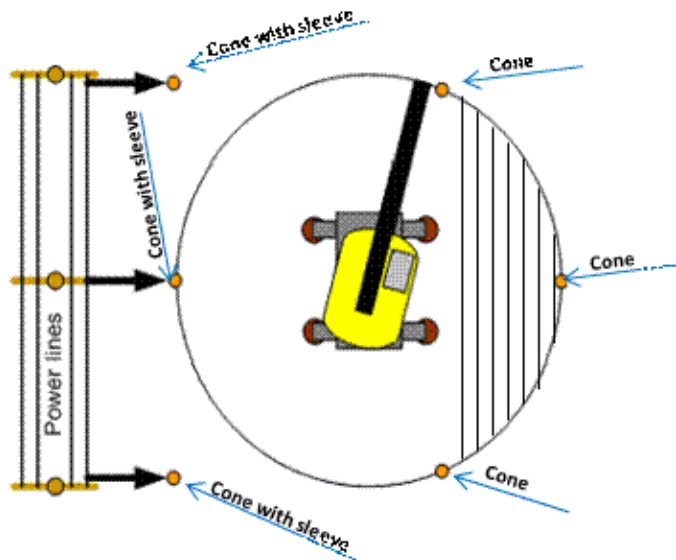
1. **To mark the maximum working area of swinging equipment and its load at a stationary worksite.** This would include but is not limited to cranes, backhoes, trackhoes and trucks with knuckle, articulated or telescopic booms. The purpose of marking this working area is to remind personnel from inadvertently fouling the working area where material and equipment is being handled. In addition, the cones will also serve as a visual reminder of the working area for the operator. Unless absolutely necessary (e.g. guiding load with a non-conducting tagline) and a job briefing with the operator has been conducted, workers are prohibited from entering this working area while the equipment is in operation. (**Note: This prohibition also applies to non-stationary worksites where cones are not required - i.e. a pick and carry situation or when a piece of equipment works while moving down a track.**)



2. To mark overhead power lines at stationary worksites and where equipment with the capability to reach within 10 feet of them will be traveling / moving. Cones used for this purpose must be equipped with a reflective sleeve (PB-21957 "Overhead Wires") that slips over the cones. If these sleeves are unavailable a flagman must be stationed by the cones to warn the operator when the boom approaches the danger zone. Additionally, per rule 78.8, do not operate booms over power lines at any time. Do not operate them under power lines unless proper clearance is maintained.



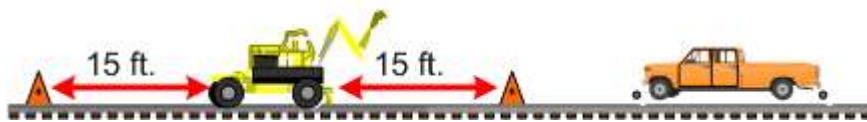
IRES – Minimum Distance Based



At least 3 orange cones with reflective sleeve labeled "OVERHEAD WIRES", placed at the required distance depending on voltage AND 3 orange cones to mark the boom / load working radius.

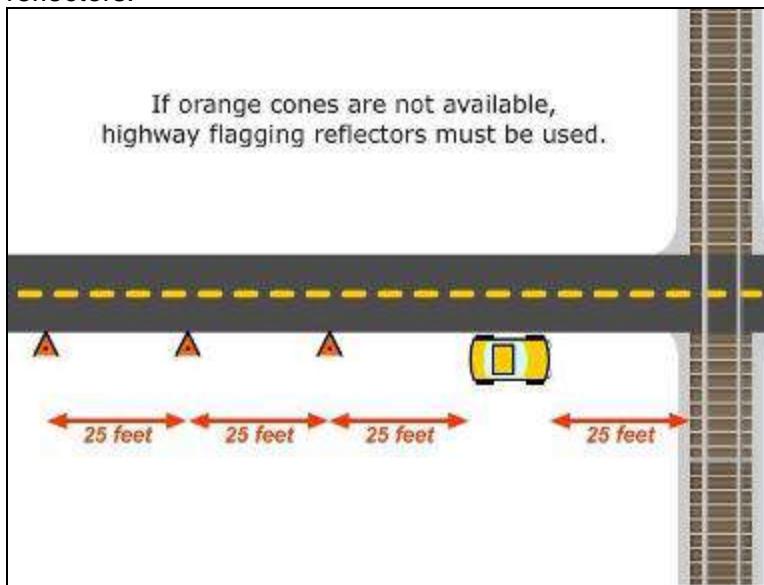
3. **Isolating a piece of equipment that is being worked on from other M/W equipment.**
Chief Engineers Instruction Bulletin 135.3.2 (Lockout/Tagout of M/W Equipment) directs:

A.2 - Place one orange cone in the center of the track at least 15 feet from each end of the equipment. **Note: Other equipment operators are required to stop when approaching an orange cone and may not proceed until it is removed.**



4. **Protecting someone who is responding to an emergency call at a highway road crossing or who is parked foul of the traveled portion of any public road.**
Chief Engineers Instruction Bulletin 137.3.3.B.8.C (Emergency Work Zone Traffic Control) states:

Place 3 orange emergency cones (if available) at approximately 25 foot increments behind the parked vehicle below to warn oncoming traffic. If cones are not available, use highway flagging reflectors.



NOTE: In some cases, (because of State or Local requirements) workers may be required to carry and use 7 cones with reflective collars for flagging protection.

Chief Engineers Instruction Bulletin 137.2.3.C.4 & 137.2.3.C.5.

Reminder to remove a track shunt

137.2.3.C.4 The EIC places the track shunt and documents the shunt location on the track authority form to serve as an additional reminder to remove the shunt before releasing the protection. In all cases, **place an orange cone alongside the track shunt** as a reminder to remove the track shunt when the work is completed.

137.2.3.C.5 When the work in the approach is completed, the person in charge removes the track shunt and the orange cone.

Vehicles that must be equipped with orange cones

All Engineering Department vehicles, except passenger sedans, must be equipped with 3 orange cones at all times and used as described in this policy. **NOTE:** Equipment with booms will require 6 cones when working within 10 feet of power lines. Passenger sedans must carry a highway flagging kit to protect workers and vehicle at road crossings and when parked foul of a public road.

For trucks less than 15,000 lbs. GVW and equipment without booms:

Item 380-0675 Cone, Safety, full skirt design, flexible, high visibility fluorescent orange, 18" high with a 6" reflective collar

For trucks greater than 15,000 lbs. GVW and all equipment with booms:

Item 380-0652 Cone, Safety, full skirt design, flexible, high visibility fluorescent orange, 36" high

OR

Item 380-0654 Cone, Traffic Safety 28", with 4" and 6" reflective collars

Item PB-21957 Reflective sleeve that fits over cones and labeled " OVERHEAD WIRES "

If you have any questions about this policy, please ask your manager, director, or manager of safety.

NOTE: UP Engineering has specific requirements in these following areas, many of which apply to contractors. Ask the UP Contract Manager for the most current copy of these rules. Additional UP rules may also apply to contractor operations with Engineering.

CHIEF ENGINEER BULLETINS:

121.0: Protection For Gangs From Trains On Adjacent Tracks

122.0: Bridge Worker Safety

124.0: Trenching Safety Rules And Shoring Standards

125.0: Outfit Car Protection And Policy

126.0: Protection Of Employees At Road Crossings

128.0: Loading And Unloading Of Prefabricated Panel Turnouts

130.0: Operation Of Ultrasonic Rail Flaw Detectors And Track Evaluation Vehicles

133.0: Requirements For Work On Elevated Surfaces And Structures

135.0: Lockout/Tagout Process For M/W Roadway Machines And Work Equipment

136.0: On-Track Safety

137.0: Working At Or Around Grade Crossings

138.0: Crane Safety

NOTE: The following UP Safety Rules and Chief Engineer Bulletins are attached for reference.

HEARING PROTECTION (excerpts) 71.2.3, 71.2.4, 71.2.5, 71.2.6, 71.2.7:

Hearing protection is required within 150 feet of operating roadway or work equipment, jet blowers, or pile drivers.

Hearing protection is required when operating or within 15 feet of any of the following equipment or tools in operation:

- Welding or cutting equipment (oxy-fuel, gas, or electric).
- Abrasive wheel grinder or sander (pedestal, bench, or portable).
- Air lance or nozzle (for blowing compressed air).
- Chain saw.
- Nail gun (air or powder-actuated).
- Power saw, planer, router, or joiner.
- Equipment or tools powered by: Air, Combustion engine, Electricity, Hydraulic, Pneumatic, or Steam

Hearing protection is required within 150 feet of master or group retarders during humping and trimming operations. Dual hearing protection (ear plugs and muffs) is required within 10 feet of these operations.

77.5: GROUNDMAN

The groundman is responsible for directing and safe-guarding all machine movements. Before signaling boom or machine movement, the groundman must ensure the load, cab or boom will not come in contact with nearby wires, structures or other objects and persons. A groundman required to move cars or on-track equipment must be qualified on the use of their braking systems.

78.8: OPERATING BOOMS NEAR POWER LINES

Do not operate booms over power lines at any time. Do not operate booms under power lines unless proper clearance is maintained.

At stationary worksites, crane operators must place at least three (3) orange cones evenly spaced along the minimum clearance line to mark the minimum safe working distance to overhead power lines.

A. Operation Near Energized Lines

If booms must be operated near energized lines, maintain the minimum clearances listed in the table listed below. **If proper clearance cannot be maintained, shut off the power and ground power lines before performing work.**

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

Note: The value that follows "to" is up to and includes that value. For example, over 50 to 200 means up to and including 200kV

A groundman must be designated to observe equipment clearance and give timely warning for all operations when it is difficult for the operator to observe clearance.

B. In Transit

B. When in transit with no load and boom lowered, use the table below.

MINIMUM CLEARANCE DISTANCES WHILE TRAVELING WITH NO LOAD

Voltage (nominal, kV, alternating current)	While traveling—minimum clearance distance (feet)
up to 0.75	4
over .75 to 50	6
50 to 345	10
over 345 to 750	16
over 750 to 1,000	20
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

138.3.11: RIGGING LOADS

A qualified worker must follow these requirements when rigging a load:

1. Make sure that slings, chains, wire rope, and other lifting devices conform to UPRR Rules 77.14.1 through 77.17.7. Contractors must comply with these rules and:
 - OSHA 1910.180 and 1926.550
 - ANSI B30.5-1968 and B30.5-1992

2. Determine the load angle factors, the number of slings to handle the load, and the rigging to be used.
3. Use tag lines according to UPRR Rule 45.1. **Note: It is particularly important to use tag lines when handling bridge girders, bridge substructure components, etc.**
4. Safely handle wire rope, wire rope slings, and chains according to the manufacturer's recommendations and UPRR rules.