

Overhead Power Lines

I PURPOSE

To provide procedures, for working on overhead power lines or in their vicinity on COMPANY sites, which will prevent serious injuries associated with high tension electrical power lines and ensure that only qualified specialists conduct work on high voltage overhead power lines.

2 SCOPE

This procedure applies to all functional areas, operations, projects, Geology, Exploration, and offices, including employees, vendors, visitors and contractors within the scope of the Integrated Management System (IMS).

3 DEFINITIONS AND ACRONYMS

Definitions

Absolute Limit of Approach Distance is the minimum safe distance a vehicle, equipment, machine, or load can approach an energized overhead power line. This distance is voltage dependent as shown in Table 1 of this document.

At Risk Activities Work Near Overhead Power Lines is any work such as excavations, earth moving, drilling, blasting, lifting or reaching with the use of cranes and boom trucks within 75 feet of an energized overhead power line.

Overhead Element is any overhead metal element that may inadvertently get dangerously close to a high voltage line, such as crane booms, mobile scaffolding, dump truck hoppers, etc.

Overhead Power Line is any above ground, live or dead conductor that is not fully voltage sheathed or enclosed. Poles, guy wires, underground anchors and any such structural member that contributes to the structural integrity of the power line shall be included as part of the power line.

Overhead Power Line Work Supervisor is the supervisor responsible for the work and is present at the work site to monitor and control work within 75 feet of an overhead power line.

Qualified Line Builders are contractors, approved by the Maintenance Electrical Department and Contracts Department that specialize in working with overhead power lines.

Site refers to any COMPANY facility.

Acronyms

HMR HSLP Management Representative

HSLP Health Safety and Loss Prevention

4 ROLES AND RESPONSIBILITIES

Document Owner

HMR

Responsible Roles and Position Holders

Employees and Contracted Employees / Persons Performing the Work Near

Energized Overhead Power Lines are all employees in any position whether COMPANY or contracted employees working on any COMPANY site. They must be trained to recognize the hazards associated with overhead power lines and to understand and be responsible for complying with the requirements as outlined in this procedure.

Electrical General Foreman or Designee shall be a COMPANY employee working or traveling on any COMPANY site. The Electrical General Foreman or Designee authorizes all work meeting the "At Risk Activities" near overhead power lines definition within the 75 feet limit of overhead power lines.

Spotter/Signalman is an employee assigned to observe and monitor equipment performing "At Risk Activities Work Near Overhead Power Lines". The Spotter/Signalman shall be competent to communicate effectively through hand signals or verbally through radio or other communication forms.

Overhead Power Line Work Supervisor/Designee can be a COMPANY employee or a contractor/vendor working or traveling on any COMPANY site who shall remain on the work site and oversee all workers and equipment activities to ensure safe execution of work and compliance to this procedure. While work is performed, the Overhead Power Line Work Supervisor shall take immediate corrective measures, including stopping work, to eliminate hazardous conditions. They are responsible for training of and enforcement of all requirements, rules, and established guidelines as outlined in this procedure.

Contractor Supervision can be a COMPANY employee or a contractor/vendor working or traveling on any COMPANY site. They are responsible for training of and enforcement of all requirements, rules, and established guidelines as outlined in this procedure.

HSLP is any COMPANY employee working under and including the Regional Director of HSLP. They are responsible for periodically auditing for compliance to this procedure.

COMPANY Contractor Representative can be any COMPANY employee working or traveling on any COMPANY site. They shall ensure a proper work scope is provided to the contractor, ensure all electrical system drawings are updated and available for the contractor conducting the work, and ensure that the contractor complies with the applicable COMPANY procedures.

5 DIRECTION

All employees, vendors, contractors, and visitors traveling/working on site shall comply with and ensure personnel accountable to them comply with the following requirements of this procedure.

General Requirements

- Work on energized overhead power lines shall not be done by COMPANY personnel, with the exception of replacing fuses.
- Work beyond replacing of fuses will only be performed by contracted line builders with the appropriate qualifications specializing in this type of work.
 - a** Contractors performing any work at any COMPANY operation shall submit their safety plan to include standard operating procedures pertinent to the specific job being performed.
 - b** The safety plan shall comply with COMPANY procedures such as:
 - Personal Protective Equipment and Rules Compliance
 - Energy Isolation
 - Overhead Power Lines
 - Hot Work
 - Confined Spaces
 - Excavations and Trenches
 - Safe Work Permit
 - Cranes and Lifting Equipment
 - Electrical Storms

A “Working Near Overhead Power Lines Permit” shall be completed any time “At Risk Activities” are to be performed within 75 feet of an energized overhead power line.

De-energizing and grounding of lines (where possible) shall be the primary means of preventing injury from contact between cranes or machinery and power lines.

Evaluate alternative work methods that do not require use of cranes, boom trucks, or overhead elements in the proximity of energized overhead power lines.

Vehicles, equipment, booms, scaffolding, personnel etc. shall adhere to the appropriate Absolute Distance of Approach of any energized power line, except for specialized overhead power lines crews with appropriate equipment and personnel trained to handle this type of work safely.

Absolute Limit Of Approach Distance	
Line Voltage	Minimum Distance From Power Line
Up to 50,000 volts	10 feet
50,000 to 115,000 volts	12 feet
115,000 to 230,000 volts	16 feet
230,000 to 500,000 volts	25 feet

The “Working Near Overhead Power Lines Permit” must be completed during daylight hours.

If work near overhead power lines will be performed during darkness, a safe work permit must be completed and written authorization must be obtained from the Maintenance Electrical Department.

Work near overhead power lines shall be stopped anytime environmental conditions could potentially effect the safe completion of the work.

Work shall be stopped if environmental conditions have some of the following characteristics:

- Wind speed higher than 20 miles/hr.
- Heavy rain, hail and snow.
- Electrical storms.
- Other abnormal phenomena affecting safety.

Insulating barriers, proximity warning devices, insulating boom guards, swing limit stops, non-conductive tag lines, ground rods, and similar devices may be used for protection against electrical hazards, but shall not take the place of de-energized lines or minimum absolute limit of approach distances.

When the work requires excavation, the Excavation and Trenches procedure shall be followed, which includes an excavation and trenches permit.

Overhead power lines shall be installed and maintained such that the minimum distance between the cable and the tallest piece of rolling stock normally accessing the road meets the criteria in the table above.

When specialized equipment taller than the normal rolling stock must work in or travel under the overhead power line, a Working Near Overhead Power Lines Permit shall be completed.

Existing conditions related to the safety of the work to be performed shall be determined before working on or near overhead power lines as per this procedure.

Only authorized personnel shall enter switch yards of transformer areas.

Working Near Overhead Power Lines Permit

As part of the permit, an Overhead Power Line Work Supervisor must be assigned to the work project and shall:

- a** Generate the permit with a complete sketch of the work area and any overhead power lines in the area.
- b** Post and barricade the work area prior to requesting authorization from the Electrical General Foreman.
- c** Notify the Electrical General Foreman or his designee of the work / project and conduct an inspection of the work area.
- d** Sign the “Working Near Overhead Power Lines Permit” and accept responsibility for the safe execution of the work as stated on the permit.

The Electrical General Foreman or his designee shall:

- a** Inspect the work site before work starts.
- b** Review the permit and add any additional safety precautions required to the permit.
- c** Sign the permit authorizing work to proceed within the 75 foot limit of overhead power lines after documenting all special requirements for the job.

The Overhead Power Line Work Supervisor shall sign the permit and remain at the work site to supervise the work and ensure the permit procedures are followed throughout the duration of the job.

The permit shall remain in the work area until the job is complete.

When the work is completed, the Overhead Power Line Work Supervisor shall sign the permit signifying it has been closed and return the permit to the Electrical General Foremen.

Protective safety systems, i.e., warning signs and barricades shall be removed upon completion of work.

The completed and signed permit shall be kept on file with the Maintenance Electrical Department for a period of six (6) months.

Equipment Spotter \ Signalman

A competent person shall be assigned to observe equipment:

- a** Where it is difficult for the equipment operator to visually observe how close his equipment or the load is to an energized overhead power line.
- b** Whenever the equipment is within a booms length of the energized overhead power line.

The spotter \ signalman shall:

- a** Warn the operator when the machine is working near a power line.
- b** Warn the operator when any part of the machine is nearing the Absolute Limit of Approach Distance.
- c** Remain vigilante to this assignment not allowing them to become distracted.
- d** Position themselves in full view of the operator when hand signals are used.

Job Briefing

Supervisors shall ensure that the employee in charge of a job conducts a job briefing or pre-task meeting with the employees involved before they start each job.

The briefing shall cover at least the following subjects:

- Hazards associated with the job
- Work procedures involved

- Special precautions
- Energy source controls
- Personal protective equipment requirements

If the work or operations to be performed during the work day or shift are repetitive and similar, at least one job briefing shall be conducted before the start of the first job of each day or shift.

Additional job briefings shall be held if significant changes, which might affect the safety of the employees, occur during the course of the work.