Best Practice Category:	**General Work** *Category the document will be located on the Intranet under Best Practices*	**Document #:**	BP051 BP + Sequential Number = Category
Document Title:	Electrical Safety		
Owner:	 *BUL of Originating Business Unit*	**Effective Date:**	09/10/2020
Revision #:	**0**		

Business Unit Designation:

☐ BU 01 - Infrastructure	☐ BU 02 - BR Civil	☐ BU 04 - Houston Civil	
☐ BU 15 - Deep Foundations	☐ BU 23 - Marine	☐ BU 29 - BR Mechanical	☐ BU 30 - Houston Mechanical
☐ Pipe Fab Facility	☐ Form Fab Facility	☐ Westport Operations	☐ Cajun Office Facilities

A check next to a Business Unit indicates this best practice is required by that business unit and therefore is a mandatory Standard Operating Procedure (SOP) for that business unit.

PURPOSE:

The purpose of this requirement is to protect Cajun employees from the hazards associated with energized electrical equipment.

PROCESS:

Where there is a potential for mobile equipment to operate in close proximity to aboveground or underground electrical obstructions the requirements of the Close Proximity Work Required Best Practice shall be followed. In addition, prior to breaking ground, all excavation area must be screened with an underground utility locator. Areas that have been screened must be marked with paint, flagging, etc. to indicate where screening has already occurred. This must also be marked on a drawing and kept as back-up documentation. Utility locators must be used by trained individuals. Locators are not intrinsically safe, so when used in a process area, be sure to contact the client for issuance of a hot work permit.

If at any point in time an unknown underground obstruction is encountered, all employees involved in the activity are required to utilize their Stop Work Authority and work must cease immediately.

If contact is made with live electrical equipment, the operator must first attempt to break contact by slowly backing or swinging away from the utility if it is safely possible to do so. If it is not possible to safely break contact, the operator must attempt to STAY on the equipment until the utility can be de-energized. The operator must not attempt to exit the machine while still in contact unless it becomes absolutely necessary (i.e. an electrical fire breaks out). If the operator must exit the equipment, he/she should attempt to jump clear of the equipment without making contact with both the machine and ground at the same time. The operator and any employees within proximity of the contacted equipment should exit the area slowly by using the "shuffle" method of sliding their feet a few inches at a time, being sure to never break contact with the ground with either foot and never sliding feet further than 8 inches apart from each other.

No employee or subcontractor is permitted to chip, cut, break, attach/nail/fasten to, or in any other way alter or modify any duct bank, duct chase, conduit, etc. All employees must be educated on the presence and purpose of red concrete for housing electrical utilities.

The following clearances must be maintained from overhead electrical lines while **traveling** with mobile equipment:

TRAVELING ONLY - no other operation permitted	
Voltage (nominal, kV)	Minimum clearance distance
up to .75	4
over .75 to 50	6
over 50 to 345	10
over 345 to 750	16
over 750 to 1,000	20
over 1,000	established by utility owner

When overhead electrical lines are present, and contact with equipment is possible, the site superintendent must evaluate the situation to determine if a warning system should be utilized (example: overhead powerlines crossing over a road that is commonly traveled on with equipment). The approved warning system consists of two non-conductive telescopic poles with red pennant flagging between the two poles. The pole height must be adjusted to accommodate the minimum clearance distance provided in the table based on the voltage.

These warning systems can be obtained by contacting Business Unit Management

The following clearances must be maintained from overhead electrical lines while **operating other than traveling** with mobile equipment:

Equipment shall stay 20 feet away from any overhead electrical lines up to 350kV. For anything above 350kV but less than 1,000 kV, the distance shall be 50 feet. Anything over 1,000 kV you must contact the utility company for clearance distances.

When determining the potential for machine operation to encroach the minimum clearance distance, this must be based on the machine's maximum working radius (full boom extension, 360 degrees around equipment). Using this method, if any part of the machine has the potential to encroach the minimum clearance distance, then a designated spotter must be assigned specifically to watch for overhead contact.

All other electrical safety requirements set forth in Cajun's EHS Manual, including but not limited to Lock-out/Tag-out, Assured Grounding (monthly inspections and GFCI), and working in proximity to power lines, must be strictly adhered to. Due to the high incident potential when dealing with electricity, violations of electrical safety requirements can result in immediate disciplinary action, up to and including termination.

Approvals		
Title	***Signature***	***Date***

Revision History				
Rev #	***Date***	***Reason for Changes***	***Originator***	***Effective Date***

Note: SOP Requirement

Work must be performed in accordance with the information in this Best Practice. If it is determined, that work cannot be done as required in the document or that it presents additional risk, you must obtain authorization for variance from the Business Unit Sr. Construction Manager and Business Unit Manager of Safety.