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Team 310 Robotic Lineworker

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Project Background

Florida Power & Light (FPL) is the largest energy company in the United States with upwards of 5 million customer accounts across the state.

Bureau of Labor Statistics (BLS) reports that electrical power line installers are among the Top 10 most dangerous jobs in terms of fatal injuries each year



BLS reports that most line worker injuries are due to overexertion

Mission Critical Criteria

- Voltage threshold of 17 kV
- Allow for 60 feet of space between on-site line workers and energized components
- Perform up to six (6) degrees of motion during operation
- Adhere to all relevant FPL company standards

Mission Statement

"Our team is determined to develop a solution for Florida Power & Light that aids in the performance of routine installation and repair on distribution power lines while increasing operator safety."

Proposed Design



Spring 2020 Timeline

January:

Finish Prototype
Begin Semi Operational Model

February:

Finish Semi Operational Model
Complete Team Web Design

March:

Finish Working Model
Design Testing/ Benchmarking
Engineering Design Day Preparation

April:

Engineering Design Day
FPL Quality Exposition

Design Specifications

- Device will drop into existing boom truck bucket.
- Modular attachments are in reach of the arm.
- Motors and other components will be housed in the main body.

Additional Resources

- Center for Advanced Power Systems
- 5-Megawatt Testing Facility
- FPL – Lake City Team