CAMPUS VOLTAGE UPGRADE PROJECT

Facilities Management – Energy Services
Craig Spencer, PE
Director of Energy Services
2/19/2018
Voltage Upgrade Background

- Required to retire and demolish the Power Plant and Poultry Substation.
- Much of existing underground infrastructure has exceeded lifespan by 30-40 years.
- Replaces old failing underground cable pathways (Ductbanks)
- Replaces aged transformers, switchgear and cable.
- Provides redundancy and reliability in the campus distribution system.
- More efficient distribution with the higher voltage of 12,470V versus 2,400V.
PROJECT-1 Morrill Courtyard Upgrade

This project consists of installing the underground infrastructure and cabling that will support the existing buildings upgrade from 2.4kV to 12.5kV.

Area/Buildings affected:
- GAB (Old Spears Business Bldg) Expected Outage - 5 days
- Morrill Hall Expected Outage - 24 hours
- Bartlett Center Expected Outage - 24 hours
- Thatcher Hall Expected Outage - 24 hours
- Parking Lot #16 - South Half

Start Date: March 19, 2018
Project Length: 45 days
Project 2: Architecture Upgrade Project

This project consists of installing the underground infrastructure and cabling that will support the existing buildings upgrade from 2.4KV to 12.5KV.

Area/Buildings affected:
- DW Reynolds Architecture Bldg - Estimated Outage: 48 hours
- CEAT Endeavor Lab
- Parking Lot #6A – East Side
- Parking Lot #6 - Near NE corner of Arch Bldg

Start Date: April 1, 2018
Project Length: 15 days
Project 3: Athletic/Hester Vault Upgrade Project

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLING THAT WILL SUPPORT THE EXISTING BUILDINGS UPGRADE FROM 2.4KV TO 12.5KV.

Area/Buildings affected
Intersection at Athletic and Hester
DW Reynolds Architecture Bldg
CEAT Endeavor Lab
Civil Lab Annex (South End) - Estimated Outage 10 days
Start Date: April 1, 2018
Project Length: 15 days
Project 4: Monroe Street Infrastructure Upgrade Project

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLES THAT WILL SUPPORT THE EXISTING BUILDINGS UPGRADE FROM 2.4KV TO 12.5KV.

Area/Buildings affected
Intersection at Monroe and Athletic
Parking Lot #34
Parking Lot #44
No Outages Required
Start Date: May 15, 2018
Project Length: 30 days
PROJECT 5: INFRASTRUCTURE UPGRADE-1

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLING THAT WILL SUPPORT THE NEW FACILITIES UPGRADED FROM 2.4KV TO 12.5KV

Area/Buildings affected
Athletic Avenue from Monroe to Hester
Physical Sciences
Edmon Low Library - Estimated Outage - 48 Hours
Engineering North - Estimated Outage - 24 Hours
Engineering South - Estimated Outage - 48 Hours
Civil Lab Annex (North End) - Estimated Outage - Tied to Engineering South
Parking Lot #53 – University Health Center
Parking Lot #46 – Near Kerr Hall
Parking Lot #45 – Near Agriculture Hall
Parking Lot #34 – Near Physical Sciences

Start Date: May 21, 2018
Project Length: 90 days
PROJECT 6: INFRASTRUCTURE UPGRADE-2

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLING THAT WILL SUPPORT THE NEW FACILITIES UPGRADED FROM 2.4KV TO 12.5KV

Area/Buildings affected
- Hester Street from Athletic to Morrill
- Classroom Building - Estimated Outage - 24 Hours
- Serebean Center for Performing Arts - Estimated Outage 24 Hours
- Fire Station - Estimated Outage - 24 Hours
- Parking Lot #19

Start Date: May 21, 2018
Project Length: 90 days
PROJECT 7: GUNDERSON SWITCH UPGRADE

This project consists of installing the underground infrastructure and cabling that will support the new facilities upgraded from 2.4kV to 12.5kV.

Area/Buildings affected:
- Old Central - Expected Outage - 4 Days
- Gunderson Hall - Expected Outage - 4 Days
- Alumni Center - Expected Outage - 4 Days

Start Date: July 1, 2018
Project Length: 30 days
PROJECT 8: MATH SCIENCE UPGRADE

This project consists of installing the underground infrastructure and cabling that will support the new facilities upgraded from 2.4kV to 12.5kV.

Area/Buildings affected:
- PIO Building - Expected Outage - 48 Hours
- Math Sciences - Expected Outage - 48 Hours
- ITE Building - Expected Outage - 48 Hours

Start Date: TBD, 2018
Project Length: 30 days

NEW VISTA SWITCHGEAR & DUCTBANK

NEW CABLE PULL THROUGH EXISTING DUCTBANKS
PROJECT 9: MURRAY UPGRADE PROJECT

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLEING THAT WILL SUPPORT THE NEW FACILITIES UPGRADED FROM 2.4KV TO 12.5KV

Area/Buildings affected
Murray Hall - Expected Outage - 48 Hours
North Murray Hall - Expected Outage - 48 Hours
Stout Hall - Expected Outage - 48 Hours
Wentz Parking Garage - Expected Outage - 48 Hours
Start Date: TBD, 2018
Project Length: 20 days
PROJECT 10: CITD/ TENNIS UPGRADE PROJECT

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLING THAT WILL SUPPORT THE NEW FACILITIES UPGRADED FROM 2.4KV TO 12.5KV

Area/BUILDINGS affected
- Wes Watkins CITD Bldg - Expected Outage - 48 Hours
- Greenwood Tennis Center - Expected Outage - 48 Hours

Start Date: TBD, 2018
Project Length: 10 days

ENERGIZE EXISTING 15KV CABLE WITH 12.470V FEED

REFEED EXISTING SWITCHGEAR WITH 12.470V SERVICE
NEW CABLE PULL THROUGH EXISTING DUCTBANKS
PROJECT 11: AGRICULTURE UPGRADE PROJECT

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLELING THAT WILL SUPPORT THE NEW FACILITIES UPGRADED FROM 2.4KV TO 12.5KV

Area/Buildings affected
Agriculture Building - Expected Outages - South End - 48 Hours
Northwest - 24 Hours
Northeast - 3 Days
Start Date: TBD, 2018
Project Length: 30 days

NEW CABLE INSTALLED IN EXISTING CONDUIT

NEW CONDUIT & CABLE FROM SWITCH TO TRANSFORMER
PROJECT 12: 4-H / AGRICULTURE NORTH UPGRADE PROJECT

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLING THAT WILL SUPPORT THE NEW FACILITIES UPGRADED FROM 2.4KV TO 12.5KV

Area/Buildings affected
4-H Youth Development Bldg - Expected Outage - 48 Hours
Agriculture North Bldg - Expected Outage - 48 Hours

Start Date: TBD, 2018
Project Length: 15 days
PROJECT 13: PHYSICAL SCIENCE UPGRADE

THIS PROJECT CONSISTS OF INSTALLING THE UNDERGROUND INFRASTRUCTURE AND CABLEING THAT WILL SUPPORT THE NEW FACILITIES UPGRADED FROM 2.4KV TO 12.5KV

Area/Buildings affected
Physical Science 1 - Expected Outage - 24 Hours
Physical Science 2 - Expected Outage - 4 Days

Start Date: TBD, 2018
Project Length: 30 days
Power Distribution Center

This project consists of a new distribution switching center for all the campus power distribution. The power distribution center is fed from the OG&E McElroy Substation and the new university substation located at Pioneer and Virginia. The new distribution center is required to retire and demolish the OSU/Poultry Substation on Hall of Fame.

Area/Buildings affected
Parking Lot #49E
Parking Lot #53
University Health Center
Lincoln Street

Start Date: May, 2018
Project Length: 8 Months
Phase II Overview

PHASE II OUTLINE:

- PRIOR TO PHASE II, POWER DISTRIBUTION CENTER IS REQUIRED TO BE CONSTRUCTED.
- EXISTING 2400V LINES FROM POULTRY SUB WILL BE REPLACED WITH NEW FEEDS FROM POWER DISTRIBUTION CENTER.
- UPON COMPLETION, POULTRY SUBSTATION CAN BE DEMOLISHED.
- WILL RE-USE EXISTING UNDERGROUND INFRASTRUCTURE WHERE PRACTICAL AND IDENTIFIED DURING DESIGN.
Questions