

Scope of Work
 Project 623-16-102
 Replace Electrical Switchgears and Transformers

Request A/E firm provide all required labor, material and equipment to develop construction documents to include contract drawings, specifications and site investigations, for the development of contract documents, pre-bid construction conference, construction period services and multiple site visits.

The project is to consist of upgrade, replace and modernize selected electrical primary and secondary power distribution and ancillary equipment at the facility to correct deficiencies. This project will require phased sequence of work plan for replacement and evaluations as to the most viable, cost effective, energy saving and least disruptive means for upgrading, retro-fitting, replacing and modernizing of the Unit Substations (USS) in building 1 (USS "I" / 1E10), building 52 (USS 1 & 4), building 53 (USS 5, 6 & 7), Building 22 main distribution panel (208Y/120 V – 800 amp) and outdoor pad mounted, oil-filled transformers A, B, C, D & E. Project to include networking for Power Logic power metering and monitoring of facility electrical distribution system and EPSS utilizing existing electrical metering network if available and/or utilize Engineering Niagara network. Project is to include replacement of batteries and battery charger for building 54, 130vDC power source for the Medium Voltage Circuit Breakers located in building 54.

USS "I" in building 1, E-wing, room 1E10 consist of an indoor Dual Primary High Voltage Load Interrupter Switch, Oil-Filled transformer and Switchboard and will require the complete unit to be replaced with minimal impact to the facility. USS's 1 and 4 in building 52 have Square "D" QED-2 Switchboards on the secondary side with Power Logic, USS 1 currently utilizes a Square "D" DS420 MCB with AMPTECTOR I trip unit and USS 4 utilizes a Square "D" SE style with electronic trip Main Circuit Breakers, both styles of the Main Circuit Breakers are obsolete. USS's 5, 6 & 7 in building 53 also have the same QED-2 Switchboards with Power Logic. The Main Circuit Breakers with electronic trip units are obsolete. (Additional information provided in table below)

| Electrical Distribution Equipment Nomenclature | | | | | | | |
|---|--------------------------------|------------------------|------------------------|--------------------------|--------------------|--|------------------------------|
| <u>SUB Station ID</u> | <u>Transformer Designation</u> | <u>Transformer KVA</u> | <u>Voltage Primary</u> | <u>Voltage Secondary</u> | <u>SWBD. Mains</u> | <u>Primary & Alternate Feeders</u> | <u>Buildings Served</u> |
| | A | 300 KVA | 12,470V | 208Y/120V | | Primary 7 / Alternate 4 | Building 1 A,B & C Wings |
| | B | 1000 KVA | 12,470V | 480Y/277V | | Primary 5 / Alternate 7 | Building 1, C-wing / Surgery |
| | C | 300 KVA | 12,470V | 208Y/120V | | Primary 4 | Building 22 MDP |
| | D | 500 KVA | 12,470V | 208Y/120V | | Primary 5 / Alternate 7 | Building 24 |
| | E | 300 KVA | 12,470V | 208Y/120V | | Primary 4 | Building 11 & 18 |

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| Electrical Distribution Equipment Nomenclature | | | | | | | |
|---|---|----------|---------|-----------|--------|----------------------------------|---------------------------------|
| USS I | I | 1500 KVA | 12,470V | 480Y/120V | 2000 A | Primary 7 / Alternate 5 | Building 1 C & E Wings |
| USS 1 | L | 1000 KVA | 12,470V | 480Y/120V | 1200 A | Primary 8 / Alternate 5 | Building 52 Chiller Plant |
| USS 4 | P | 1000 KVA | 12,470V | 480Y/120V | 1600 A | Primary 8 / Alternate 5 | Building 52 Chiller Plant |
| USS 5 | M | 1000 KVA | 12,470V | 480Y/120V | 1600 A | Primary 9 / Alternate 4 | Building 53 Bed Tower |
| USS 6 | N | 1000 KVA | 12,470V | 480Y/120V | 1600 A | Primary 9 / Alternate 4 | Building 53 Bed Tower |
| USS 7 | M | 750 KVA | 12,470V | 480Y/120V | 1200 A | Primary 9 / Alternate 4 | Building 53 Bed Tower |

- MANHOLES - - ○ #2A
- TRANSFORMERS - E
- MV GENERATOR - G
- LV GENERATOR - G

- FEEDER #4 ——— 4 ———
- FEEDER #5 ——— 5 ———
- FEEDER #7 - - - - 7 - - - -
- FEEDER #8 - - - - 8 - - - -
- FEEDER #9 ——— 9 ———

MV Switchgear Bldg.

Electric Utility Service Enters Bldg. 54

MV Generator Bldg. Under Construction

Above Ground Fuel Storage Tanks

DISTRIBUTION SYSTEM
Electrical Feeder System

Jack C. Montgomery
VA Medical Center
(623)
Muskogee, Oklahoma

SITE PLAN

