

STATEMENT OF WORK (SOW)

REPLACE UPS SYSTEM & INSTALL RENTAL UPS VA LOMA LINDA HCS - LOMA LINDA, CALIFORNIA 605-17-3-6022-1153

1. OBJECTIVE

A. SCOPE OF WORK

Contractor shall provide all equipment, labor, materials, parts, tools, design / engineering, supervision, services and incidentals necessary to REPLACE UPS system & INSTALL Rental UPS. Contractor shall perform work / tasks directly related to the procurement and installation of a 100kW UPS system, scalable to 250kW. Contractor shall, using one line (single line) diagrams and as-builts, design, install and test the UPS system utilizing current power configurations.

B. ORDER TYPE

Firm Fixed Price (FFP).

C. PLACE OF PERFORMANCE

Work shall be performed at the Jerry L. Pettis Memorial VA Loma Linda Healthcare System located at 11201 Benton Street, Loma Linda CA 92357-1000. Work requiring onsite presence must be coordinated with the Government (VA) Contracting Officer Representative (COR). ~~Contractors shall be escorted by VA personnel at all times while on site.~~

Contractors shall coordinate with VA COR to obtain PIV credentials prior to commencing work. Contractor shall begin process to obtain PIV credentials at least one week prior to start of any work in the facility. Contractor must perform due diligence in preparation and planning for all onsite activities to minimize the duration of onsite work.

2. SPECIFIC TASKS & DELIVERABLES

The contractor shall perform the following: procure equipment, perform installation, test the functionality of a 100kW UPS system, and dispose of the existing / old UPS system properly in accordance with federal, state, and local ordinances.

A. TECHNICAL REQUIREMENTS

1) UPS REQUIREMENTS

Contractor shall install and test a 100kW UPS system that meets or exceeds the following requirements:

- a. (1) UPS 100kW scalable to 250kW
- b. (4) External Battery Cabinets - runtime estimated at 1-hour, 17-minutes @ 70kW
- c. (1) maintenance bypass panel
- d. (1) embedded network management card
- e. (1) assembly and start-up services
- f. (1) year 24x7 warranty coverage with 4-hour response time
- g. generator compatible
- h. Automatic internal bypass, automatic self-test
- i. External maintenance bypass module ~~Battery modules connect in parallel~~
- j. ~~Configured for N+2 internal redundancy~~
- k. Hot-swappable / user replaceable intelligence module and power modules scalable to 250kW by adding hot swappable 25kW power modules
- l. Audible alarms, LCD display, LED status indicators
- m. Overall length of unit shall not exceed 16 feet ~~Modular design, network manageable~~
- n. Overall depth shall be no greater than 4 feet ~~Scalable to 250kW by adding hot swappable 25kW power modules~~

2) SUGGESTED CHARACTERISTICS

- a. OUTPUT:
 1. Output Power Capacity 100.0kW / 100.0kVA
 2. ~~Max Configurable Power (Watts) 100.0 KWatts/100.0 kVA (90.0 kW N+1)~~
 3. Nominal Output Voltage: 480V ~~120V, 208V, 208V 3-phase~~
 4. Output Voltage Distortion less than 2%
 5. ~~Output Frequency (sync to main) 50Hz, 60Hz~~
 6. ~~Output Frequency (not synced) 60Hz +/- 0.1% for 60Hz nominal, 50Hz +/- 0.1% for 50Hz nominal~~
 7. Topology: Double Conversion Online
 8. Waveform Type: Sine Wave
 9. Output Connections:
 - ~~(1) Hard wire 4-wire (3PH + G) (battery back-up)~~
 - ~~(1) Hard wire 5-wire (3PH + N + G) (battery back-up)~~
 10. Output Voltage THD <2% linear load and <3% non-linear load

11. ~~Output Voltage Tolerance +/- 1% static and +/- 5% at 100% load step~~

12. ~~Transfer Time: 2ms typical~~

13. ~~Bypass: Built-In Maintenance Bypass, Built-In Static Bypass~~

14. Transformer to reduce UPS output voltage to 208V

b. INPUT:

1. Nominal Input Voltage: 480V 3-phase

2. ~~Input Frequency: 40-70Hz (auto sensing)~~

3. ~~Input Connections: hard wire 4-wire (3PH + G) hard wire 5-wire (3PH + N + G)~~

4. ~~Input Voltage Range for Main Operations: 340-460 (400V) 408-552 (480V)~~

5. ~~Input Total Harmonic Distortion: less than 5% for full load~~

6. ~~Maximum Input Current: 332.0A~~

7. ~~Input Power Factor at Full Load: 0.99~~

B. INSTALLATION REQUIREMENTS

The contractor shall procure all equipment and services necessary for the complete installation of the UPS System as follows:

NOTE: A rental UPS, rated at a minimum of 70kW will be required during installation.

1) RENTAL UPS:

a. Place rental UPS and battery cabinet in Service Bay 4 on 1st Floor.

b. Tie rental UPS into 400A spare breaker in distribution board D1LL. This will require a 1st Floor electrical outage in Service Bay 4. ~~Install 200amp input feed from panel IT to Rental UPS input.~~

c. Make a hole in the wall of the IT closet containing distribution board D1LL to make a cable path to the rental UPS. Firestop the hole. ~~Install 200amp output feed from Rental UPS output to panel DP-UPS.~~

d. Disconnect output of existing UPS and connect rental UPS output into existing panel IT-UPS in 1st Floor UPS room.

e. After rental UPS is no longer needed, disconnect from distribution board, remove unit/wiring and repair hole where wires passed through the wall.

2) NEW UPS ELECTRICAL TIE-IN:

~~Contractor shall conduct a site survey to determine the most effective means to tie in the new UPS to available power.~~

- a. Provide and install new 480V panel with two (2) 400A 3-phase breakers in basement of Service Bay 4.
- b. Disconnect transformer TXIT from distribution board DP-TXIT.
- c. Connect the feed from DP-TXIT to the new 480V panel.
- d. Connect the input of transformer TXIT to one of the new 400A breakers in the new 480V panel.
- e. Pull wire from the second new breaker in the new 480V panel in basement of Service Bay 4 to a new UPS disconnect switch in the 1st Floor UPS room. Land wire on both ends.
- f. New UPS output shall tie into disconnect switch in UPS room.
- g. Disconnect switch shall connect to panel IT-UPS.
- h. Contractor shall submit electrical outage requests at least 21 calendar days in advance of proposed shutdown.
- i. Work with VA COR and VA Office of Information and Technology to configure network management card in a secure fashion.

3) ~~UPON SCHEDULED SHUTDOWN:~~

- ~~a. Shutdown existing UPS to bypass and transfer load to utility side through panel DP-UPS.~~
- ~~b. Remove input from existing UPS and land wires for input of Rental.~~
- ~~c. Remove wiring from existing UPS output on panel DP-UPS and land Rental UPS output.~~
- ~~d. Start-up Rental UPS and place existing load on Rental UPS.~~
- ~~e. Remove existing UPS system and battery cabinets.~~
- ~~f. Set-up all equipment and seismically anchor.~~
- ~~g. Land output of new UPS on breaker.~~
- ~~h. Perform start-up of new UPS and place online supporting load.~~
- ~~i. Remove old UPS from site and properly dispose.~~
- ~~j. All work to be performed by licensed electricians as per NFPA Codes (NEC, etc.).~~

3. CONTRACT DURATION

Sixty (60) calendar days following contract award / Notice to Proceed (NTP) issuance.

4. CONTRACTING OFFICER REPRESENTATIVE

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