1. Scope of Work
   1.1. The contractor shall supply a quantity of 58 flooded cell lead acid batteries, remove and properly dispose of the existing bank of 58 flooded cell lead acid batteries, install and connect the supplied lead acid batteries.

      1.1.1. The contractor shall supply a quantity of 58 flooded cell lead acid batteries and auxiliary equipment according to the following specification.
      a. Type: Flooded cell, tubular plate, multi-cell (3)
      b. Voltage: 2.2 volts
      c. Capacity: 800 Amp-hours
      d. Length: 8.3 inches
      e. Width: 7.5 inches
      f. Height: 28 inches
      g. Quantity: 58
      h. DIN 40736 Standard Type: 8 OPzS 800
      i. Post Connectors: Flexible insulated copper cable (quantity 58)
      j. Pad Lead Connectors: Insulated rubber boots (quantity 4)

      1.1.2. The contractor shall disconnect, disassemble, and remove the existing bank consisting of 58 flooded cell lead acid batteries type 8 OPzS 800.

      1.1.3. The contractor shall assemble, install, and connect 58 flooded cell lead acid batteries supplied as described in 1.1.

      1.1.4. The contractor shall dispose of the removed batteries in accordance with applicable laws, EPA guidelines, and regulations, and provide a battery disposal certificate.

   1.2. The contractor shall supply a quantity of two battery chargers and accessories according to the following specification.
      a. Input Voltage: 480 Volts
      b. AC Amperes: 33 amperes
      c. Phase: 3 Phase
      d. Frequency: 60 hertz
      e. Power Rating: 15 kilowatts
      f. Output Voltage: 130 Volts DC
      g. No. Cells Charged: 60
      h. Type of Cells Charged: Flooded Cell lead acid
      i. Quantity: 2
      j. Load Sharing: Yes
      k. Load Sharing Cables: 2

   1.3. The contractor shall supply a quantity of two panelboards in accordance with NEMA PB 1, UL 67, and UL 50 for the distribution of 125 Vdc power that meet the following specifications. The panelboards will be installed by government personnel. Each panelboard will be installed in a dedicated panel on the back side of the main control board. Main control board panels are 90 inches tall by 28 inches wide. Panels shall be installed such that the highest device to be operated does not exceed 72 inches above the ground plane.

1.3.1. Panel No. 1 Specifications

a. Voltage: 125/250 Vdc
b. Short-Circuit Current Rating: 35 kA
c. Service: Two-Wire, 125 Vdc
d. Bus Rating: 400 Amperes
e. Bus Type: Tinned Copper
f. System Ampacity: 250 Amperes
g. Ground Bar: Solid Aluminum
h. Feed Type: Bottom
i. Feed-Through Lugs: No
j. Circuit Breaker Specifications
    1. Circuit Breaker Type: Molded Case
    2. Circuit Breaker Connection to Bus: Bolt-on
    3. Trip Unit Type: Thermal Magnetic
    4. Circuit Breaker Poles: Two
    5. Interrupting Rating: 35 kA
    6. Branch Summation:
        a) Main Breaker: 250 Ampere
        b) 30 Ampere, 2-pole (quantity 20)

1.3.2. Panel No. 2 Specifications

a. Voltage: 125/250 Vdc
b. Short-Circuit Current Rating: 35 kA
c. Service: Two Wire, 125 Vdc
d. Bus Rating: 400 Amperes
e. Bus Type: Tinned Copper
f. System Ampacity: 250 Amperes
g. Ground Bar: Solid Aluminum
h. Feed Type: Bottom
i. Feed-Through Lugs: Opposite main breaker
j. Circuit Breaker Specifications
    1. Circuit Breaker Type: Molded Case
    2. Circuit Breaker Connection to Bus: Bolt-on
    3. Trip Unit Type: Thermal Magnetic
    4. Circuit Breaker Poles: Two
    5. Interrupting Rating: 35 kA
    6. Branch Summation:
        a) Main Breaker: 250 Ampere
        b) 100 Ampere, 2-pole (quantity 2)
        c) 70 Ampere, 2-pole (quantity 4)
        d) 30 Ampere, 2-pole (quantity 16)

1.4. The contractor shall supply a quantity of 8 flooded cell lead acid batteries, remove and properly dispose of the existing bank of 8 flooded cell lead acid batteries, install and connect the supplied lead acid batteries.

1.4.1. The contractor shall supply a quantity of 8 flooded cell lead acid batteries and auxiliary equipment according to the following specification.

a. Type: Flooded cell, tubular plate, multi-cell (3)
b. Voltage: 6 volts
c. Float Voltage: 6.6 Volts +/- 1%
d. Capacity: 200 Amp-hours
e. Length: 10.71 inches
f. Width: 8.07 inches
g. Height: 15.16 inches
h. Quantity: 8
i. DIN 40736 Standard Type: 4 OPzS 200
j. Post Connectors: Flexible insulated copper cable (quantity 8)
k. Pad Lead Connectors: Insulated rubber boots (quantity 4)

1.4.2. The contractor shall disconnect, disassemble, and remove the existing bank consisting of 8 flooded cell lead acid batteries type 4 OPzS 200.

1.4.3. The contractor shall assemble, install, and connect 8 flooded cell lead acid batteries supplied as described in 1.8.

1.4.4. The contractor shall dispose of the removed batteries in accordance with applicable laws, EPA guidelines, and regulations, and provide a battery disposal certificate.

1.5. The contractor shall supply a quantity of one battery charger and accessories according to the following specification.

a. Input Voltage: 120 Volts
b. AC Amperes: 15 amperes
c. Phase: 1 Phase
d. Frequency: 60 hertz
e. Power Rating: 15 kilowatts
f. Output Voltage: 48 Volts DC
g. No. Cells Charged: 24
h. Type of Cells Charged: Flooded Cell lead acid
i. Quantity: 1
j. Load Sharing: Capable for possible future added redundancy.

1.6. The contractor shall supply a battery rack spill containment pan with the following specification:

a. Material: Stainless steel
b. Length: 50 inches
c. Width: 20 inches
d. Height:2 inches

1.6.1. The contractor shall install a battery rack spill containment pan specified in 1.6 beneath the 48VDC battery bank.

1.7. The contractor shall supply a quantity of 12 flooded cell lead acid batteries, remove and properly dispose of the existing bank of 12 flooded cell lead acid batteries, install and connect the supplied lead acid batteries.

1.7.1. The contractor shall supply a quantity of 12 flooded cell lead acid batteries and auxiliary equipment according to the following specification.

a. Type: Flooded cell, tubular plate, multi-cell (3)
b. Voltage: 2 volts
c. Float Voltage: 2.23 Volts +/- 1%
d. Capacity: 600 Amp-hours
e. Length: 8.0 inches
f. Width: 5.5 inches
g. Height: 25.5 inches
h. Quantity: 12
i. DIN 40736 Standard Type: 6 OPzS 600
j. Post Connectors: Flexible insulated copper cable (quantity 12)
k. Pad Lead Connectors: Insulated rubber boots (quantity 4)

1.7.2. The contractor shall disconnect, disassemble, and remove the existing bank consisting of 12 flooded cell lead acid batteries type 6 OPzS 600.

1.7.3. The contractor shall assemble, install, and connect 12 flooded cell lead acid batteries supplied as described in 1.8.1.

1.7.4. The contractor shall dispose of the removed batteries in accordance with applicable laws, EPA guidelines, and regulations, and provide a battery disposal certificate.

1.8. The contractor shall supply a quantity of one battery charger and accessories according to the following specification.

a. Input Voltage: 120 Volts
b. AC Amperes: 15 amperes
c. Phase: 1 Phase
d. Frequency: 60 hertz
e. Output Voltage: 24 Volts DC
f. Output Amperes: 30
g. No. Cells Charged: 12
h. Type of Cells Charged: Flooded Cell lead acid
i. Quantity: 1
j. Load Sharing: Capable, for possible future added redundancy.

1.9. Location

The DC battery banks, battery chargers, distribution panels and spill containment are located in the Webbers Falls Powerhouse at 14300 S. Powerhouse Road, Webbers Falls, OK 74470. The batteries are located in the power plant's battery room. The battery chargers are located in the power plant's battery charger room. The DC distribution panels are located in the power plant's control room.

1.10. References

a. NFPA 70 National Electrical Code
b. NFPA 70E Electrical Safety in The Workplace
c. EM 385-1-1 Army Corps of Engineers Safety and Health Requirements Manual, Current Edition

1.11. Basis for Payment

Payment will be made in a lump sum upon completion and acceptance of work. Offer price shall include all costs, including technical assistance, installation, proper disposal, and shipping. Delivery shall be FOB destination, Webbers Falls Powerhouse, 4.5 miles north of interstate highway 40 and 3.6 miles east of state highway 351 in Webbers Falls, Oklahoma from 7:00 am – 4:30 pm Monday through Thursday, excluding Federal holidays. Contact the powerhouse at (Contact information will be provided at award) for coordination of product delivery.

1.12. Work Hours

Working hours at the Webbers Falls hydroelectric power plant are from 6:00 AM to 4:30 PM, Monday through Thursday. Deliveries are accepted between the hours of 8:00 AM and 4:00 PM, Monday through Thursday.

1.13. Completion Time

All work shall be completed and accepted within twenty-four (24) calendar days of award of the Purchase Order.

1.14. Safety Requirements

The contractor shall comply with the Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, current edition in addition to all applicable Federal, State, and Local safety codes and practices.
http://www.usace.army.mil/SafetyandOccupationalHealth/SafetyandHealthRequirementsManual.aspx

1.14.1. The contractor shall develop and submit to the GDA an Activity Hazard Analysis (AHA) to identify hazards and controls for the transportation, spill/decontamination, removal/installation, bussing, and testing.

1.15. Equipment

All equipment used to perform work under this contract shall be in good operating and mechanical condition and shall comply with EM 385-1-1.

1.16. Weather Limitations

None.

1.17. Warranty

All material provided will have a full replacement warranty which covers defects in workmanship for a period of twelve months from the date of delivery and acceptance.

2. Part 2 – Products

2.1. Materials

Other than those listed as Government furnished the contractor shall furnish all materials and supplies required to complete this task.

2.2. Delivery and Storage

The Contractor is responsible for proper movement and storage of all Government material. All material will be picked-up and returned to the site undamaged and properly stored to avoid damage at contractor facilities.

Materials that are damaged during the transportation or improper storage shall be replaced at no cost to the Government.

2.3. Government Furnished Property

The contractor shall coordinate use of any government furnished property required to complete this contract with the powerhouse specialist.

3. Part 3 - EXECUTION

3.1. Accomplishment of Work

The contractor shall perform all necessary preparations and work to provide for the proper inspection, installation, and testing of equipment. Contractor will meet the requirements and timelines as identified.

3.2. Testing

The contractor shall provide test reports indicating battery conformance to DIN 40736. Contractor must report all defects of materials, including those deemed to have originated at the manufacturer to the Government immediately. The testing shall be performed in accordance with appropriate IEEE/ANSI standards, the manufacturer's recommendations, and EM 385-1-1.

3.3. Technical Data

The contractor shall provide the pertinent technical data for all material, products, and equipment supplied. Such data shall include product cut sheets, operation and maintenance manuals, and manufacturer drawings.

3.4. Warranty

Contractor will guarantee that all completed work will be free of any defects and poor workmanship for a period of 1 year from date of receipt and acceptance. All defects and poor workmanship found will be corrected with no extra charge to the Government.