

## N03 Station Service Battery Specification:

- Battery shall be a VLA lead calcium type such as an EnerSys 2GC-19M, or JEA approved equivalent such as GNB, or C&D (designed for switchgear and motor applications).
- Minimum Plate thickness:
  - Positive: 0.30 in/7.6 mm
  - Negative: 0.20 in/5.1 mm
- Battery racks shall be 150" long or less and shall be 50" wide or less. The constraint is to fit both 60 cell batteries inside of the existing battery room staying in compliance with a three-foot working distance per the NEC.
- Spill containment shall be secured under the racks.
- Battery straps and inter-tier DLO connecting cables shall be installed according to the manufacturer's specification.
- The battery footprint shall be less than 50" by 150"
- The battery shall be on a two-tier rack.
- The battery capacity shall be no less than 1520AH per battery, no less than 3040AH total.
- The battery shall be a flooded VLA lead calcium vented battery.
- The battery shall be delivered with a hydrometer intended for use by manufacturer with the battery.
- The spill containment for the battery shall be a typical off the shelf system such as HAWK 47–148 or approved equivalent.
- The battery's one minute performance shall be rated for at least 1200A per cut sheet.
- The battery's eight-hour performance shall be rated for at least 205A per cut sheet.
- The battery design float Voltage shall be between 2.16 and 2.26 Volts per cell.
- The battery shall have a nominal Specific Gravity of 1.215 at 77F.
- The battery shall have a design life of 20 years.
- The system will float at 130VDC +/- 2%.
- The battery shall have 60 cells per string.
- The battery shall be capable of discharging to 1.75 Volts per cell.
- The initial capacity at time of delivery shall be at least 95%.
- Bolted connections shall be stainless steel.
- Intercell connectors shall be lead plated copper.
- The battery covers shall be made of a flame retardant PVC or equivalent (UL94).
- The battery container shall be made of Styrene Acrylonitrile Copolymer or equivalent.

## N03 Station Service Battery Replacement - Specification



Station Service A – 60 1600AH ATT Round Cells – Center of Room.



Station Service B – 60 1600AH ATT Round Cells – East Side of Room.

## N03 Station Service Battery Installation Specification:

- Scope of work:
  - Stage new batteries at or near project work site.
  - Remove 121 ATT Round Cells – 365 lbs per.
  - Send 120 ATT Round Cells to EPA certified smelter and provide JEA with certificate of delivery.
  - Remove old battery racks.
  - Install battery and rack in accordance with NEC Article 480.9 (C) & (D). IEEE 485 5.2 Mounting, IEEE 485 6. Installation Procedures IEEE 485 7. Records.
  - Spill containment shall be secured under the racks.
  - Battery straps and inter-tier DLO connecting cables shall be installed according to the manufacturer's specification.
  - After the new battery is connected, a freshening charge shall be performed according to manufacturer's specifications.
  - Capacity test shall be performed after the battery has been on float long enough according to manufacturer specification.
  - Capacity test shall be conducted after the manufacturers recommended time on float.
  - Capacity test time and type shall be approved by JEA.
  - The capacity test shall be conducted with an Alber load bank with a BCT 2000 test module with the load bank positioned next door in the inverter room.
  - The test parameters shall be approved by JEA Engineering.
  - All documentation – serial numbers, lot number, manufacture date, acceptance test data, individual specific gravities, intercell and intracell resistance values shall be delivered to JEA in an easy to read and to understand format that is consistent, logical, and non-contradicting.
  - The battery shall be delivered with a hydrometer intended for use with the battery.
  - All work to be completed during the Unit 3 outage
    - Currently scheduled 10/16-11/5
- LOTO: JEA to provide LOTO of all associated equipment and systems.
  - JEA NGS Operations/ Tagging Authority to identify and isolate all potential hazardous energy from project equipment (electrical, mechanical, pneumatic, hydraulic, chemical, thermal, etc.): No work shall commence until LOTO is in place
- The contractor shall provide all the necessary removal and installation services, equipment, and materials.
  - Contractor will follow JEA Contractor Safety Management Process and become JEA Contractor safety qualified prior to commencing work.
  - All contractor/subcontractor onsite-personnel to review JEA NGS site specific document and complete JEA safety orientation.
  - Contractor shall be responsible for all labor and material costs associated with the replacement or repair of any existing plant equipment, components, etc., outside the scope of work, that may be damaged by the Contractor during project work:
    - It is imperative that Contractor bring to the attention of the JEA Project/Construction Manager any damage immediately following discovery. Determination of cause shall be at the sole discretion of JEA
    - Contractor shall not initiate "out of scope" services without obtaining prior authorization from the JEA representative.

- Contractor is responsible for:
  - Presenting an initial job scope plan after winning bid, detailed and explicit in terms of action items and deliverables in sequential order so that as changes occur in the field, the document can be updated accordingly.
  - Inspecting/reviewing delivered equipment
  - Maintaining a clean work site. Disposing trash and debris in JEA specified dumpsters.
  - Safely maneuvering equipment on site
  - Verifying existing conditions and dimensions prior to starting work, any discrepancies must be brought to the attention of the JEA Representative
  - Having all necessary JEA required training and personal protective equipment (PPE) prior to performing any work on the plant site
  
  - Being JEA safety pre-qualified prior to work commencement and meet JEA standards for unescorted work – which includes being CPR qualified per JEA standards
  - All miscellaneous items necessary for safe project work
  - Providing Drinking water and ice
  - furnishing Port-o-Lets, and wash stations for their employees
  - notifying JEA Project manager when entering and leaving plant
  - Moving one 365lb ATT Round cell battery from the Unit 3 battery room, across the mezzanine floor to the elevator and into a passenger minivan (or other vehicle that can transport the battery without sudden jarring that could crack the plates). Then the battery will be driven by the contractor approximately 2000' to a different building to be installed on a third-tier rack. A cell lifter will be supplied by the contractor to lift the battery to the third tier.
  
- JEA Electric Shop is responsible for:
  - Conducting JHA with contractor and assisting with minor requests that may come up such as access through a gate and or room.