BATTERY ROOM EQUIPMENT SPECIFICATIONS
Battery Racks & Related Accessories Specification

2.8 BATTERY

B. Battery Racks

1. Battery rack shall be two (2) or three (3) tier construction in height with acid resistant, vertical and horizontal structural members coated in a manner that resist sulfuric acid in concentration of 70% in continuous emersion duty. All other steel components must be corrosion resistant plated or painted to match the frames. Rack shall include front/rear side rails and cross bracing between each set of vertical supports. There shall be three horizontal members on which batteries are mounted. Battery rack end restraints shall be designed to extend up to 0.75" beyond nominal length of rack per side for full utilization of battery support rail capacity for battery loading. All bolts used in rack assembly shall be rated "Grade 5" or higher.

2. Battery rack and associated anchorage shall be certified to withstand lateral forces. Rack manufacturer shall furnish appropriate anchor bolts with the rack and shall have capability to be re-torqued to original foot-pound in the event of a seismic occurrence. The anchors shall be certified in the seismic analysis specified with a minimum safety factor of four against combined shear and pullout assuming the floor to be 3000 psi concrete of sufficient thickness to accommodate minimum embedment depth.

3. Rack manufacturer shall furnish a seismic certification signed and sealed by 2 independent professional structural engineers, stating the lateral acceleration of the rack system, including anchorage. Such certificate shall be equal to or greater than the strength requirement stated above. Certificate shall also include certification of supplied anchor bolts in respects to the lateral acceleration of the rack. Finite element analysis reports shall be made available upon request.

4. Racks shall include spacers and adjustable side restraints that are designed to fully immobilized the batteries. Steel restraints shall be coated or covered with material that electrically insulates the batteries. Foam products used as spacers must be electrostatic dissipative per EIA-541. All non-steel parts of the rack must pass UL flame spread criteria and have a LOI (lower Oxygen Index) of 28 or greater.

5. Steel components shall be electrically interconnected and provisions for grounding shall be designed and provided as a part of the rack. Grounding bar provided shall include mounting hardware to accommodate two #6 two-hole lugs. One grounding bar shall be supplied for each rack with a length of up to 14' (two grounding bars shall be provided for rack lengths exceeding 14').

6. Approved vendor, without substitution, shall be **Acran**.

C. Battery Rack Accessories

1. Provide one two-part epoxy coating touch up kit per rack including pan & brush in matching rack color ANSI/ASA #61 gray.

2. Provide continuous linear, translucent insulated covers made of rigid PVC over all cell posts and inter-jar connectors. Covers shall be provided in 4' lengths and meet requirements of UL94 VO with LOI (Lower Oxygen Index) of 28 or greater.

3. One battery lift and maintenance cart per site, capable of supporting weight of one jar.

4. Provide cold formed, 12 gauge steel, gold electro-galvanized cable restraints with hard rubber insulation to support and relieve stress of inter-tier and inter-rack cabling. Cable restraints shall be designed to mount to battery rack end and/or side restraint.

5. Provide one 20 gallon battery watering cart with gun (Model S) per site and one lead acid battery water deionizer system per battery room. Deionizer system shall include purity light and cartridge rated for up to 600 gallons of pure water.

6. Approved vendor, without substitution, shall be **Acran**.