1. The DC engine starting system shall be an integrated system containing batteries, charger, and communications. Acceptable types shall be Stored Energy Systems (SENS) SuperTorque 8Z or equivalent.
    A. Integrated System
    B. Batteries
        1) The batteries shall be nickel-zinc chemistry.
        2) The battery system shall be sized to meet NFPA 110 engine cranking requirements of 6x consecutive 15s engine crank sequences.
        3) The temperature range shall be 5°C to 50°C (minimum).
        4) The battery shall have a service life expectancy of greater than 10 years.
    C. Charging System
        1) The battery charging system shall function automatically and shall be designed for nickel-zinc batteries.
        2) The battery charging system shall fully recharge the battery system in less than 8 hours.
        3) The battery charging system shall operate with a 110-240VAC single-phase input.
        4) The battery charging system shall be temperature compensated and shall prevent all over-charging at elevated temperatures.
    D. Communications
        1) The DC Starting System shall provide visual indication of overall system health for each battery bank including:
            a) DC Battery Voltage
            b) Charging Current
            c) Alarm Indication
            d) Status
        2) The DC Starting System shall provide remote communications including:
            a) 2x Form-C relay contacts
            b) Optional RS-485 Modbus communications
            c) Optional J1939 communications
            d) Optional Modbus TCP/IP communications
    E. Agency Approvals
        1) The system shall be UL Listed, UL1973 preferred.
        2) The system shall comply with all applicable NEC requirements.

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**END OF SPECIFICATION**

 