Standard Operating Procedures for Adding New Batteries in High-Voltage Systems

Basic Standards for New Batteries

- **Condition Check**: Ensure the new battery has no external defects (e.g., no visible damage, drops, or compression).
- **Electrical Check**: Confirm no electrical issues, such as abnormal temperature, voltage, or current behavior at Level 2 or higher.
- **Voltage Difference**: The voltage difference between the new battery and system batteries less than 2V for smooth integration.

Step-by-Step Process for Adding a New Battery

Step 1: Record Battery Voltages

- **Action**: Measure and record the voltage of the new battery and the current system batteries.

Step 2: Check the New Battery Voltage

- **Action**: Compare the new battery's voltage with the system's.
  - **If New Battery Voltage > System Battery Voltage**:
    - Set the inverter to **10A constant charging**.
    - Charge the system batteries, make the lowest voltage in the system slightly higher than the new battery's voltage.
    - Once successful, proceed to **Step 3**.
  - **If New Battery Voltage ≤ System Battery Voltage**:
    - Proceed directly to **Step 3**.

Step 3: Stack the New Battery on the System

- **Action**: Place the new battery on top of the system.
  - Set the inverter to **10A constant discharge**.
  - Discharge the system, until the new battery **SOC < 10%**.
  - Once the condition is met, immediately stop discharging.

Step 4: Remove the New Battery and Restore Original System

- **Action**: Remove the new battery and return the system to its original configuration.
  - Set the inverter to **10A constant charging**.
  - Charge the system batteries until their **SOC ≥ 12%**.
  - Once the condition is met, stop charging.

Step 5: Discharge the System Without the New Battery

- **Action**: Discharge the system batteries until the **SOC < 10%**.
  - Set the inverter to **10A constant discharge**.
  - Stop discharging once the condition is met.

Step 6: Finalizing the Installation

- **Action**: After completing the above steps, the new battery can be added to the system and configured properly.
- **Software updating:**
  Please contact Raymond to ensure that all battery modules are updated to the same software version.

Process for Adding Multiple New Batteries

Step 1: Record Voltages

- **Action**: Measure and record the voltage of the new batteries and the current system batteries.

Step 2: Check the Current System Voltage

- **Action**: If the system's **SOC > 10%**, set the inverter to **10A constant discharge** and discharge until **SOC < 10%**.
    - If the system's **SOC < 10%**, set the inverter to **10A constant charging** and charge until **SOC ≥ 12%**.

Step 3: Form Independent System with New Batteries

- **Action**: Create a new system using the new batteries and follow **Step 2** as needed to ensure **SOC < 10%**.

Step 4: Add the New Batteries to the System

- **Action**: After completing the steps, add the new batteries to form a new system.

Notes

- The **smaller the voltage difference** between the new battery and the system, the better the system will perform.
- If the new battery is installed at the top of the system as the master battery, ensure proper networking for accurate data transmission to the platform.
- **Software update**

Please contact Raymond to ensure that all battery modules are updated to the same software version.
