# DC System SAT Inspection Checklist

## Part-1: DC Charger

| S.No | Description | Status (✓/x) | | N/A | Remark |
|---|---|---|---|---|---|
| A | Check nameplate information for accuracy | ☐ | ☐ | ☐ | |
| B | Inspect for physical and mechanical damage | ☐ | ☐ | ☐ | |
| C | Check primary and secondary loops and grounding | ☐ | ☐ | ☐ | |
| D | Verify the unit is clean | ☐ | ☐ | ☐ | |
| E | AC supply availability (Temporary) | ☐ | ☐ | ☐ | |
| F | Check input single phase quality | ☐ | ☐ | ☐ | |
| G | Check output voltages of the charger within range | ☐ | ☐ | ☐ | |
| H | Perform baseline thermal scan - check house connections, supplies, diodes, AC/DC capacitors, inverter gates and drivers | ☐ | ☐ | ☐ | |
| I | Check alarm settings and setter readings against DEM datasheet | ☐ | ☐ | ☐ | |
| J | Test and validate the temperature compensation in the charger cooler. Regulate the battery float voltage with respect to ambient room temperature | ☐ | ☐ | ☐ | |
| K | Measure DC output voltage ripple content. Ripple % (pp) without battery connected. Confirm with OEM | ☐ | ☐ | ☐ | |
| L | Measure DC output voltage ripple at rated current without battery. Confirm with OEM datasheet | ☐ | ☐ | ☐ | |
| M | Test and validate the temperature compensation in the charger cooler. Regulate battery float voltage with respect to ambient room temperature | ☐ | ☐ | ☐ | |
| N | Test the isolated DC module (per DCS standards). Confirm the alarm threshold of maximum ground leakage | ☐ | ☐ | ☐ | |

| S.No | Description | Status (✓/x) | | N/A | Remark |
|---|---|---|---|---|---|
| O | Check the function of start/stop, change-over, overload, charge operating, and full load operation | ☐ | ☐ | ☐ | |
| P | Check battery supply voltage. Verify off charge conditions simulated and checked for proper alarm/indication | ☐ | ☐ | ☐ | |
| Q | Check interfacing with DCS is correct | ☐ | ☐ | ☐ | |

## Part-2: DC Panel

| S.No | Description | Status (✓/x) | | N/A | Remark |
|---|---|---|---|---|---|
| A | Check nameplate information for correctness | ☐ | ☐ | ☐ | |
| B | Inspect for physical damage or defects in inputs | ☐ | ☐ | ☐ | |
| C | Check tightness and condition for all connections | ☐ | ☐ | ☐ | |
| D | Check tightness and condition of connections of all busses | ☐ | ☐ | ☐ | |
| E | Check there are no cracks in bus bar insulators | ☐ | ☐ | ☐ | |

## Part-3: Battery

| S.No | Description | Status (✓/x) | | N/A | Remark |
|---|---|---|---|---|---|
| A | Check nameplate information for correctness | ☐ | ☐ | ☐ | |
| B | Inspect the physical damage or defects in battery cells | ☐ | ☐ | ☐ | |
| C | Check tightness and condition of earth connection | ☐ | ☐ | ☐ | |
| D | Check tightness and condition of cells metallic links | ☐ | ☐ | ☐ | |
| E | Check polarity and connection between battery bank and related charger | ☐ | ☐ | ☐ | |
| F | Check that the voltage of each battery is greater than .8V (include before charging, when charging, after discharge) | ☐ | ☐ | ☐ | |
| G | Check the output voltage of the whole set of batteries is normal (0.V nominal) | ☐ | ☐ | ☐ | |
| H | Check battery temperature (before charging, when charging, after discharge) | ☐ | ☐ | ☐ | |
| I | Check battery cell voltages | ☐ | ☐ | ☐ | |

| S.No | Description | Status (✓/x) | | N/A | Remark |
|---|---|---|---|---|---|
| J | Impedance measurement on each cell before AND after commissioning (to check with EPRI) | ☐ | ☐ | ☐ | |
| K | Resistance check of the cell-to-cell strap connections using a meter (loose connection indication) | ☐ | ☐ | ☐ | |
| L | Battery capacity test according to applicable IEEE standards (before discharge test - battery needs to be charged and similar discharge profile) | ☐ | ☐ | ☐ | |
| M | Specific gravity baseline AND after discharge test (only for lead acid batteries) | ☐ | ☐ | ☐ | |
| N | Initial boost charge together with a thermal survey | ☐ | ☐ | ☐ | |
| O | Charger output voltage to be within specified OEM requirements | ☐ | ☐ | ☐ | |
| P | Measure and record the voltage across battery terminals and battery cells | ☐ | ☐ | ☐ | |
| Q | Final voltage checked and recorded on each cell - check with OEM | ☐ | ☐ | ☐ | |
| R | Print the connection resistance measurements (off-load and terminal connections). Normal resistance values can range 50-00 micro-ohms. To be confirmed by OEM | ☐ | ☐ | ☐ | |
| S | Electrolyte temperature CHECKED BY: | ☐ | ☐ | ☐ | |

## Sign-Off

| Role | Name | Signature | Date |
|---|---|---|---|
| **Checked by:** | | | |
| **Verified by:** | | | |