**POP System Test Procedure**

1. **No Battery, No Charger, No Inverter Connected Test**
2. Put the Main Controller Board (MCB) in test mode by putting the toggle switch in test mode position.
3. Connect the MCB to Utility (Meralco) power by closing the circuit breaker. The MCB must be activated.
4. Connect the MCB to the POP System Monitoring and Control Center (POPSMCC) computer and run the POPSMCC software.
5. Adjust the clock of the MCB to operate it under Peak period.
6. Place the MCB in Manual mode. POPSMCC & LCD must indicate MCB is in manual mode.
7. Transfer the MCB to Local power (Battery power) by entering TRANSTOLOCAL command. Read the voltage at the Load terminals. Reading must indicate 0 volts because there is no inverter.
8. Transfer the MCB to Utility power (Meralco power) by entering TRANSTOUTIL command.

Read the voltage at the Load terminals. Reading must indicate about 230 volts.

1. Transfer the MCB to Local power and read the voltage at the load terminals. Reading must indicate 0 volts.
2. Connect the load to the Load terminals.
3. Transfer the MCB to Utility power. Load must be activated.
4. Watthour meter reading on the POPSMCC software must be increasing rapidly.
5. Maintain the load for an hour and observe the state of the MCB especially the Inverter-Load-Meralco relay. The MCB must not display any abnormal behavior and the relays must not be overheated.
6. Transfer the MCB to Local power.

**Important note: Its possible that the POPSMCC will lose connection to the MCB due to interference during load disconnection. In that case, re-establish connection by re-running the program or do a disconnect-connect cycle. It may be necessary to also disconnect-connect the USB cable.**

1. Turn-off the power supply to the MCB by opening the circuit breaker.
2. **Charger Test**
3. Ensure the charger is off from its main switch.
4. Connect the AC input of the charger to the charger AC terminals on the MCB.
5. Connect the DC output of the charger to the charger DC terminals on the MCB. Ensure the polarity of the connection is correct.
6. Turn-on the MCB by closing its circuit breaker. (Note: charger may activate or not)
7. Run the **POPSMCC** and place the MCB in Manual mode.
8. Transfer the MCB to Local power.
9. Turn off the AC input of the charger by entering OFFRECT command.
10. Turn on the charger main switch. The charger must NOT be activated since the AC input to the charger is off.
11. Turn on the charger by entering the ONRECT command. The charger must be activated.
12. Turn off the charger by entering the OFFRECT command.
13. Turn on the charger by entering the ONRECT command.
14. Disconnect the battery terminals from the charger by entering the BATTOINVERTER command.
15. Measure the DC voltage at the battery terminals on the MCB. Reading must be zero.
16. Connect the battery terminals to the charger by entering the BATTOCHARGER command.
17. Measure the DC voltage at the battery terminals on the MCB. Reading must indicate the charging voltage.
18. Transfer the voltage toggle switch to “operate” position. The LCD must display a voltage reading close to the measured reading on the battery terminals. If the readings are not close, the program code needs to be adjusted.
19. Connect the battery terminals to the inverter by entering the BATTOINVERTER command. Voltage at the battery terminals must be zero as indicated on the LCD display.
20. Turn off the charger by entering the OFFRECT command.
21. Turn-off the power supply to the MCB by opening the circuit breaker.
22. **Charger-Battery Test**
    1. Connect the Battery to the battery terminals on the MCB. Ensure the polarity of the connections is correct.
    2. Turn on the MCB by closing the circuit breaker.