

- Battery rack structural finite effects analysis (FEA) for internal pressure build-up condition was performed and analysis is completed.
- Battery rack vent panels are designed based on FEA simulation.
- Calibration of thermal model is completed.

Indicate which part of the Grant Activities as defined in the grant agreement, the above accomplishments are related to:

All realizations are related to Task 2 of the project.

Section II: Problems/Solutions

Problem(s) Identified: Report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project

- Some battery cells show higher self-discharge than expected.
- Schedule remains very tight.

Proposed Solution(s): Report any possible solution(s) to the problem(s) that were considered/encountered

- See below.

Action(s) Conducted and Results: Describe the action(s) taken to resolve the problem(s) and its effect

- Problematic cells were identified and will be replaced by the manufacturer, reinserted, and repackaged in cells bundles.
- We are still following carefully all activities to mitigate any potential delay on schedule.

Section III. Goals and Issues for Succeeding Period:

Provide a brief description of the goal(s) you hope to realize in the coming period and identify any notable challenges that can be foreseen

Electrical design:

- Second version of final electrical drawings including parallel slave BMS for redundancy completed.
- To program the new PLC and test it using conventional lead acid battery pack.

BMS:

- 30 BMS slave modules were procured. Components will be tested at delivery.
- To test BMS at 700 volts using conventional lead acid battery pack with lithium ion modules in series at top voltage. The objective is to validate functionality of the system at high voltage.
- To complete and finalize EMI testing on BMS on module and in high voltage configuration.

Thermal and mechanic:

- Detail mechanical arrangement for dual BMS configuration
- Modify battery rack drawings for internal pressure requirement and detailed vent panels
- Test plan for “Module Hi-Pot” testing and “Short circuit” test
- Select test lab for module transport certification
- Vibration test with updated module design will be performed in November 2012.

Date: November 13, 2012

Authorized Project Representative's Signature

NOTE:*Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.*