

**Texas Commission on Environmental Quality
New Technology Research & Development (NTRD) Program
Monthly Project Status Report**

Contract Number: 58211111473264
Grantee: Alternative Motive Power Systems (AMPS)
Report for the Monthly period: March 2011 **Date Submitted:** April 10, 2012

Section I. Accomplishments

Provide a bulleted list of project accomplishments as well as a description of their importance to the project.

- Continued programming efforts and continued data acquisition programming. Programming will ensure proper communication between sub-systems and establish control over individual components for proper locomotive function. Data acquisition system will provide very precise feedback. This empirical data will allow us to make minor programming changes to improve locomotive function and efficiency.
- Battery testing at Penn State University is underway.
 - The impact of this procedure will assure that AMPS uses batteries at maximum efficiency to afford superior performance while maximizing life expectancy of the batteries.
 - AMPS will be paying for this testing and the purchase of the lead cadmium and lithium ion batteries for comparison purposes. This will enable us to determine strengths and weakness of alternative chemistries for future locomotive applications.
- ATS has begun assembly of traction motor rack and components. Delivery is anticipated the first part of May 2012 for installation in cab/short hood “module”.
- Implementing component & component drawing acquisition per schedule.
- Continued modification of cab/short hood.
- Operator control Stand fabrication has begun.
- Switches, gauges, throttle, dynamic braking control handle, and air system components have been ordered.
- Completed installation of cab lifting system into cab/short hood assembly and rigging for installation has been fabricated. This lifting system provides easy lift points and structural support of cab & short hood to assure that no damage to the cab will occur while placing the unit onto the locomotive deck.
- Axle generator machining and assembly is complete. The unit will be tested on a locomotive beginning this month. This axle generator will provide greatly improved signal to our control system for improved traction control function.

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

- Task #2

Section II: Problems/Solutions

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

- a) No significant problems

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

- a) None

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

- a) None

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

- Continued software development
- Install axle generator for testing
- Order engines
- Order generators
- Completion of cab/short hood module in preparation for paint
- Design and initial fabrication of long hood
- Incorporate components into new operator control stand for functionality testing
- Analyze battery testing data in order to refine battery management scheme
- AMPS will continue ordering required components including engines and generators

Date: March 10, 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.*