

**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: April 2013 **Date Submitted:** May 10, 2013

Section I. Accomplishments

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

- Locomotive has been painted
- 150 kilowatt generator set has undergone successful load testing up to 90% power. This enables battery charging and complete checkout of all locomotive functions
- All systems functionality, both low voltage and high voltage, have been verified. This will minimize time on site at Texas Eastman, prior to full performance testing and emissions testing
- All basic programming has been completed. Programming will ensure proper communication between sub-systems and establish control over individual components for proper locomotive function. Fine tuning and adjustment of several parameters will occur during performance testing in order to maximize performance and efficiency.
- Data Acquisition System (DAS) hardware has been received and programmed. DAS will provide very precise feedback. This empirical data will allow us to make minor programming changes to improve locomotive function and efficiency. DAS web portal development is complete
- Axle generator is still being tested on a Railserve locomotive in Michigan with no problems and greatly improved signal over any units we could find for purchase. We have manufactured five additional units (four for the locomotive plus one spare). Incorporation of this new “AMPS designed and manufactured” axle generator will result in improved traction control and the elimination of “faults” due to poor signal quality.

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

- Task #3

Section II: Problems/Solutions

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

- 500 horsepower engine radiator was punctured during assembly of long hood. Painting took about a week longer than anticipated. We are still slow but anticipate successful completion of all tasks by May 31, 2013.

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

- Continue working. Emissions and performance testing tasks will overlap.

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

- Radiator has been removed, repaired, and replaced. We will have an engineer on site with the locomotive until it ships to the test site. This will allow us to minimize locomotive commissioning time once the unit arrives at the test location.

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

- Schedule locomotive inspection by railroad prior to shipping.
- Ship locomotive to test location.
- Commission and prepare locomotive for emissions and performance testing.
- Complete emissions and performance testing.

Date: May 10, 2013

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.*