

## **NTRD Program Disclaimers**

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

Contract Number: 582-5-70807-0002

Grantee: County of El Paso

Date Submitted: 1-10-06

Report for the **Monthly** period:

Starting Date 12-01-05 Ending Date 12-31-05

**Section I. Accomplishments** *(Please provide a bulleted list of project accomplishments as well as a description of their importance to the project.)*

To date, El Paso County, Ruby Mountain Inc., the Idaho National Lab (INL), and Border Quality Campaign of El Paso del Norte have been coordinating with industry and local service providers in El Paso on the development of the natural gas shuttle bus for El Paso County. This has included the following:

- ARBOC regarding manufacture of the bus.
- Bell Power Systems about the installation of the Cummins 5.9L natural gas engine into the International 3200 chassis, including details regarding the wiring harness, physical size of the engine and transmission and emissions certification issues.
- Taylor-Wharton on acquisition and delivery of the 119 gallon LNG tank.
- Reliable Diesel Repair on acquisition and timely delivery of fiber wrapped steel CNG tanks for the project vehicle. The carbon fiber CNG tanks proved to be inaccessible because of a shortage of carbon materials which made the delivery dates 35-40 weeks.
- Initiated coordination for routine maintenance for the Cummins 5.9L natural gas engine and warranty service in El Paso.
- Held a full meeting of all primary project team members on 12-8-05 to discuss all current and anticipated issues related to the project vehicle.

Additional efforts focused on modifying the economizer valve (developed by the INL) allowing it to operate on a solenoid valve rather than relying on pressure alone. The INL made drawings to reflect these changes and had parts manufactured and assembled. Validation testing will be simulated by vaporizing liquid nitrogen through the economizer valve to build pressure. Another test will consist of incorporating the economizer valve onto an LNG pickup to validate performance and operation.

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

Task 1: Engineering Design and Packaging

Section II: Problems/Solutions

<p><b>Problem(s) Identified</b></p> <p><i>(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)</i></p>	<p>Obtaining the CNG tanks in a timely manner for the project vehicle have proven to be problematic due to a shortage in this country of carbon fibers which made the delivery dates 35-40 weeks from all suppliers.</p>
<p><b>Proposed Solution(s)</b></p> <p><i>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</i></p>	<p>Alternative solutions examined would require the use of temporary tanks that are available until the carbon fiber tanks can be manufactured. At that time we would replace the temporary tanks with the new tanks. Additional options would be the use of steel tanks or purchasing (unused) CNG tanks which still have the majority of their useful 15-year life.</p>
<p><b>Action(s) Conducted and Results</b></p> <p><i>(Please describe the action(s) taken to resolve the problem(s) and its effect)</i></p>	<p>Reliable Diesel Repair (an Arizona Company) was chosen to provide fiber wrapped steel CNG tanks for the project vehicle, based on cost and ability to deliver the tanks within the required timeline. The project partners also contacted Snow Motion, Enviromech, BAF Technologies, TDM, West Coach, Bell Power, ARBOC and DynaTech on possible acquisition and timely delivery of CNG tanks for the project vehicle.</p>

**Section III. Goals and Issues for Succeeding Period:** *(Please 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)*

**Work in the next month of the project period will focus on the following contract tasks:**

Task 1: Engineering, Design and Packaging

2.1 Task Statement: Engineering design and packaging to integrate the HLA and LNG engine to the ADA transit bus chassis. Will submit the design to TCEQ for approval prior to installation and fabrication described under Task 2.

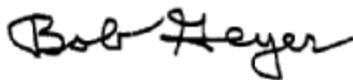
2.1.1. Engineering, design and packaging to integrate the HLA and LNG engine to the ADA transit bus chassis.

2.1.1.1. Package HLA in low-floor rear drive chassis.

2.1.1.2. Design/detail required parts sufficient for fabrication.

In January, the project team will:

- Continue coordination with Bell Power regarding installation of the Cummins 5.9L natural gas engine, as well as the LNG and CNG fueling systems and economizer valve.
- Verifying components are sequenced to Bell Power for installation into the project vehicle.
- Complete Task 1 NTRD Contract Deliverable related to a report on the final design for fabrication of the project vehicle.
- Begin focusing on Task 2: Installation and Fabrication.



Date:     1/10/2006    

*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.*