

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: _12-12-05_____

Report for the **Monthly** period:

Starting Date _11-01-05_____ Ending Date _11-30-05_____

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.
- Snow Motion, Enviromech, BAF Technologies, TDM, West Coach, Bell Power, ARBOC, Reliable Diesel, and DynaTech on possible acquisition and timely delivery of CNG tanks for the project vehicle.
- Investigated state regulations on fuel storage requirements and provided information regarding useful life spans and renewal of natural gas fuel storage containers.
- Provided discussion on hydraulic hybrid/natural gas clean transportation information related to border transportation as it pertains to EPA interests in programs focused on the border area.
- Reported engine selection information to engine suppliers and manufacturers.

During November the project team focused on locating and acquiring natural gas tanks and scheduling and logistics regarding installation of the 5.9L Cummins natural gas engine following the final engine selection. Specifically, we have been concentrating on components dealing with the manufacturing and engine change out issues. We have finalized the contract on the LNG tank and have it on order to be delivered at Bell Power Systems in Essex, Connecticut for installation at the same time the vehicle will be re-powered with the Cummins 5.9L natural gas engine. Additional efforts focused on modifying the economizer valve (developed by the INL) allowing it to operate from electronic control instead of pressure. The INL is currently making drawings to reflect these changes and will then have parts manufactured.

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>Problem(s) Identified</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 more problematic due to a shortage in this country of carbon fibers.</p>
<p>Proposed Solution(s)</p> <p><i>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</i></p>	<p>Alternative solutions may 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>Action(s) Conducted and Results</p> <p><i>(Please describe the action(s) taken to resolve the problem(s) and its effect)</i></p>	<p>The project partners have 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. A decision regarding the CNG tank issue will be forthcoming in early December.</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.

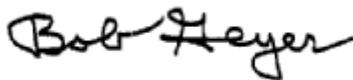
2.1.1.1. Package HLA in low floor rear drive chassis.

2.1.1.2. Design/detail required parts sufficient for fabrication.

In December, the project team will be receiving the new parts for the economizer valve and running a series of tests. In the first test, we will be simulating the vaporization and pressure building operations of the economizer valve using liquid nitrogen. A second test will consist of incorporating the economizer valve onto an LNG pickup and validate its' performance and operation. A set of drawings, installation instructions, and operating parameters will be documented and the information forwarded to Bell Power Systems for their support during installation.

In addition to the economizer valve tests, the project team will:

- Continue coordination with Bell Power regarding installation of the Cummins 5.9L natural gas engine
- Make a final decision regarding the CNG tanks
- Order CNG tanks and coordinate with Bell Power on logistics and installation
- Hold a full meeting of all primary project team members
- Initiate coordination for both routine maintenance for the Cummins 5.9L natural gas engine and warranty service (at locations to be determined) in El Paso; at least one backup service provider will also be identified and site visits made to determine compatibility with project needs and requirements; warranty service on the International 3200 chassis has already been arranged at the Border International dealership in El Paso.



Date: _____ 12/12/05 _____

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.*