

## **NTRD Program Disclaimers**

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**Texas Commission on Environmental Quality  
New Technology Research & Development (NTRD) Program  
Monthly Project Status Report  
GTI Project #20285**

Contract Number: 582-5-70807-0018

Grantee: Gas Technology Institute

Date Submitted: December 10, 2006

Report for the Monthly period: November 2006

Starting Date: November 1, 2006

Ending Date: November 30, 2006

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

<b>Accomplishment</b>	<b>Importance to the Project</b>
GTI has successfully operated the on-site gas liquefier equipment for approximately 30 days.	Field-testing is an important deliverable in the overall project.
Two Clean Energy tankers have been filled with marketable LNG for use as a vehicle fuel and a third tanker is being prepared for filling.	One of the key deliverables of this project was to demonstrate that the technology could successfully generate marketable LNG for use as a vehicle fuel.
GTI provided tours of the LNG facility to the International ASME conference attendees in Chicago.	Demonstrating the technology for Texas-based LNG fleet operators was a key aspect of the project. This may result in commercial adoption of the technology in Texas.
GTI continues to make adjustments to the system in order to optimize its efficiency.	Field testing at GTI's Des Plaines location has resulted in a better response time for system modifications than a remote field test would have provided for.
Field test data being collected – Liquefier delivering methane at approximately 90% purity – well within vehicle operating parameters.	Field testing demonstrates commercial viability.

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

Accomplishment	Grant Activity
Continued system adjustments	Tasks 3-4
Deliveries to Clean Energy LNG Tankers	Task 5
Extended test run data collection	Task 5
Visits and tours of the system operations	Task 6

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>There are currently no problems existing or anticipated in the Project</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>Not Applicable</p>

Action(s) Conducted and Results

*(Please describe the action(s) taken to resolve the problem(s) and its effect)*

GTI has addressed all technical and contract issues. The extended test will be completed in December and will validate the technology for commercial suitability.

*Below right is a photo the completed GTI on-site liquefier in operation. The picture at left shows the gas-clean-up system that removes sulfur, water, and other impurities from the gas stream.*



Liquefier and controller system – view of heat exchanger and compressor



Gas clean-up towers that pre-treat natural gas prior to liquefaction process



View of LNG tanker being filled with LNG at GTI's facilities in Des Plaines, Illinois

**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)*

- Test runs and modifications will likely continue through December
- GTI will attempt to provide additional tours of operation to Texas-based LNG fleet operators as possible.
- GTI will begin writing a final report and field test summary that will be submitted upon project completion.
- GTI will continue collecting data from field test trial.

Date: 12-10-06

Authorized Project Representative's Signature

**J. B. Weeks, Associate Director  
Hydrogen Energy Systems  
Gas Technology Institute**

**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.*