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

Contract Number: ____582-5-70807-0005_____

Grantee: _____**Teledyne Energy Systems, Inc.**_____

Date Submitted: _____10 July 2006_____

Report for the **Monthly** period:

Starting Date ____1June 2006___ Ending Date ____30 June 2006_____

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

- Teledyne Energy Systems (TESI) and subcontractor Clean Fuel Generation (CFG) held two regular biweekly telecoms during the month of June.
- Progress continued on Task 2 objectives. Fuel cell system components were requisitioned for testing including the air compressor and hydrogen circulating pump, and DI water pump.
- TESI and CFG discussed the details and started work on the system model.
- CFG continued testing the reformer unit that at the end of the month had accumulated 41 cycles and 215 hours of operation. The catalyst performance has shown only minimal degradation.
- The new hydrogen purifier components have been repaired and are on schedule to start testing in the first half of July.
- Morris Brown of TCEQ was contacted regarding the unavailability of the simulation software that was originally intended for the system model. Mr. Brown responded with a practical and acceptable approach for presenting the system model.

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

The above accomplishments are related to Task 2 in the Grant Activities including system modeling and evaluation of subsystems for the fuel processor.

Section II: Problems/Solutions

Problem(s) Identified (*Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)*	CFG has said that the reformer will not load follow or turn down and will only operate at one performance point. The unit will operate in hot standby and at one hydrogen production rate.
Proposed Solution(s) *(Please report any possible solution(s) to the problem(s) that were considered/encountered)*	Teledyne is investigating various methods to accommodate this operating scheme. This will have to include some type of storage such as a larger compressed hydrogen storage volume, metal hydride hydrogen storage, battery storage or a possible combination of storage methods.
Action(s) Conducted and Results *(Please describe the action(s) taken to resolve the problem(s) and its effect)*	The alternatives are presently under investigation. A hydrogen compressor with a capacity larger than what was initially considered will most likely be required and a suitable unit is being researched.

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)*

Goals for July are to continue reformer testing, start purifier testing, and begin testing of the fuel cell subsystem components. Work on the APU system model including the turndown issue will continue.

Additional information-

_____ Date*: 10 July 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.*