

## **NTRD Program Disclaimers**

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

Contract Number: \_\_\_\_\_582-5-70807-0005\_\_\_\_\_

Grantee: \_\_\_\_\_Teledyne Energy Systems, Inc.\_\_\_\_\_

Date Submitted: \_\_\_\_\_10 April 2006\_\_\_\_\_

Report for the **Monthly** period:

Starting Date \_\_\_\_\_1 Mar 2006\_\_\_\_\_ Ending Date \_\_\_\_\_31 Mar 2006\_\_\_\_\_

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

- The purchase order was finally executed with subcontractor RRC (Railroad Commission of Texas).
- Teledyne and subcontractor Clean Fuel Generation (CFG) held two regular biweekly telecons during the month of March.
- Progress continued on Task 2 objectives including design work on the process flow diagram integrating the APU subsystems; the reformer and fuel cell. Work also continued prototyping and testing the reformer subsystem.
  - Testing and data collection of the reformer unit was performed by CFG. Data collected as well as burner flameout at high-temperature conditions revealed a problem in the burner design. After several redesigns did not resolve the problem, CFG turned to a consultant who concluded a successful solution. CFG reports the burner has been operating flawlessly since this design change was implemented.
  - Testing has also caused CFG to become concerned about the durability (performance and lifetime) of their current catalyst to the temperature cycling expected in typical power profile of the auxiliary power unit (APU). They are discussing this concern with several catalyst manufacturers to determine the best solution.

**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

<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>Testing data indicate a potential durability issues with the reformer catalyst.</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>Modification of the operating conditions or replacement of the catalyst.</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>CFG is actively discussing their concerns with several catalyst manufacturers to determine the best solution.</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)*

The goal for April is to continue reformer testing, complete the integrated APU process and instrumentation diagram (P&ID), and start procurement of fuel cell subsystem components for testing. Work will also continue to set up the APU system model.

Additional information-



April 10, 2006

Date: \_\_\_\_\_

\_\_\_\_\_  
*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.*