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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: _____09 February 2006_____

Report for the **Monthly** period:

Starting Date _____1 Jan 2006_____ Ending Date _____31 Jan 2006_____

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

- The relocation of Teledyne Energy System's (TESI) fuel cell R&D facility from West Palm Beach, Florida to TESI headquarters in Hunt Valley, MD was completed at the end of the second week of January. TESI project personnel that had been unavailable resumed project work during the month.
- Negotiations are continuing for resolving issues with the RRC.
- Technical guidelines for the fuel cell APU system were derived by team members through literature searches and discussion with a truck dealer. The resulting APU system specification is as follows.

Specifications

1. Fuel: Propane
2. Fuel cell type: PEM (proton exchange membrane)
3. Power: 3 kW_e (continuous), 5 kW_e (peak) system, providing both (12 and 24) VDC and 115 VAC (square sine wave) outputs. Note: Fuel cell system will provide up to 3 kW and the truck batteries will provide peak power over 3 kW.
4. Thermal energy: 15,000 BTU for engine warming/cab heating
5. System dimensions: approximately 36"L x 24"H x 24"W (not including propane tank or fluids). (System volume of ~ 12 ft³.)
6. System weight: not to exceed 300 lbs. (excluding propane tank, fuel and heat-exchanger.)
7. NO_x & SO_x Emissions: limits to be established.
8. The system will be able to tolerate daily on/off cycling
9. Operating temperature range: - 40°C to + 50°C
10. Storage temperature range: + 2°C to + 50°C
11. Shock & vibration: the system will be able to tolerate the shock and vibration of normal truck operation including minor impacts.
12. The system will tolerate the tilting encountered during normal truck operation (up to 9 degrees).

13. The system will have a goal of water neutrality (a separate water supply will not be required).
14. The system will be equipped with redundant safety equipment to insure truck occupants and public safety.
15. The system parts which require maintenance will be readily and easily accessible and replaceable to minimize downtime.
16. The APU system will only require truck operator to turn system on/off when required. All other system operation will be handled by automated control system.

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

Establishing the specification completes task 1 of the project.

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>a. The purchase order with subcontractor RRC is still not finalized. The RRC wrote their own subcontract in an effort establish terms acceptable to them. This has been submitted to Teledyne and is in the process of being reviewed for approval.</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>a. Subcontract issues are being resolved.</p> <p>b. TESI will request a no-cost contract extension from TCEQ as the impact of the relocation was not foreseen at the time of contract negotiation.</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>a. Talks with the RRC are continuing.</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 February is to begin the System Modeling as described in Task 2 of the Grant Activities.

Additional information-



Date: February 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.*