

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

Contract Number: 582-11-11145-3264

Grantee: The University of Texas at Austin (UT-CEM)

Report for the Monthly period: October 2011 **Date Submitted:** November 10, 2011

Section I. Accomplishments

Provide a bulleted list of project accomplishments as well as a description of their importance to the project.

- Completed design work on fueling station external storage upgrade. Storage cylinders have been identified and structural design of their support frame was finalized.
- Identified location for back-up hydrogen supply tube trailer and began preparations for its procurement and delivery. Fabrication of the off-loading fueling post is underway.
- Reviewed and continue to modify and update the system safety plan (SSP), including bus and fueling station safety features and procedures. The SSP will be an integral part of training for Capital Metro staff.
- Continued preparations for the Proterra bus delivery. Proterra is nearing completion of bus trial operations prior to delivery. Current projections are for a December 2011 or January 2012 delivery.

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

- Task 2.1.1: The PERFORMING PARTY will contract with Gas Technology Institute (GTI) to prepare hydrogen fueling station and increase hydrogen fuel capacity.
- Task 2.1.2.5: The PERFORMING PARTY and GTI will provide a supply of backup hydrogen for bus refueling.
- Task 2.2: The PERFORMING PARTY will prepare the station operations and maintenance manual and safety plan, and provide copies of the manual and plan to on-site personnel.
- Task 2.3: The PERFORMING PARTY will ensure that the Proterra bus, Capital Metro personnel, and support material are prepared for the demonstration.

Section II: Problems/Solutions

Problem(s) Identified: Report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project

- a) Due to unexpected delays in organizational setup with GTI for the hydrogen fueling station activities, as well as delivery of the Proterra bus, the overall project schedule has slipped and deadlines for several tasks will need contract amendments.
- b) Discussions with the back-up hydrogen tube trailer supplier led to an unexpected design change for the off-loading post, which was currently being fabricated by GTI at the time of the discussions. The design change will require additional plumbing and hardware that was not originally expected for this task.

Proposed Solution(s): Report any possible solution(s) to the problem(s) that were considered/encountered

- a) UT-CEM is reviewing the current status for the Proterra bus delivery and hydrogen station upgrades and will evaluate the implications of these delays in regards to the task deadlines throughout the project.
- b) The off-loading post design change was undertaken in order to allow for a more straightforward delivery of hydrogen and provide risk mitigation when refilling of the tube trailer by the hydrogen supplier. The new design will allow the hydrogen supplier to refill the small tube trailer without breaking any connections between the tube trailer and the hydrogen station off-loading post. The alternative would have been to break the connection between the tube trailer and the GTI off-loading post each time the tube trailer needed to be refilled. Doing so would have added extra complication to the refill process and increased the likely hood of creating a leak with the off-loading post plumbing.

Action(s) Conducted and Results: Describe the action(s) taken to resolve the problem(s) and its effect

- a) UT-CEM will submit an Amendment Request by November 15, 2011, that will include modifications to the existing task deadlines within the contract under the current budget with no increase in cost.
- b) GTI has reworked the off-loading post design to allow for refueling of the small tube trailer by the hydrogen supplier. The off-loading post is now dual purpose, allowing for loading and unloading of the tube trailer. This requires additional plumbing and hardware that was not within GTI's original scope. Drawings of the new design are in process and will be submitted to the hydrogen supplier for approval. The new hardware is on order and should arrive by the end of November 2011.

Section III. Goals and Issues for Succeeding Period:

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

- Continue fueling station upgrades and preparation with GTI. (Task 2.1) (Installation of external storage and setup of the back-up tube trailer is scheduled to occur in December 2011 with final component fabrication and preparations occurring in November 2011.)
- Complete/continue preparations for bus demonstration. (Task 2.3) (Bus is scheduled to arrive in Austin in December 2011 or January 2012.)

Date: 11/10/2011

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.*