Jan 28, 2011

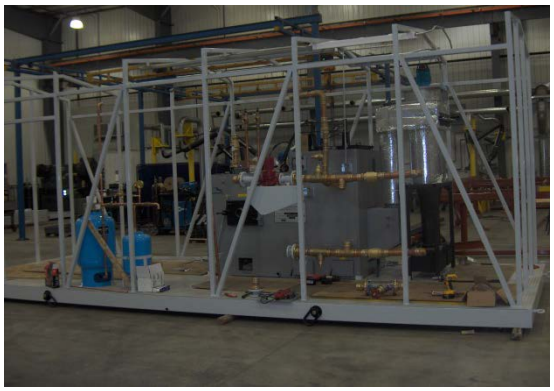
GREENHOUSE GAS EMISSIONS REDUCTION FUND
Final Project Report

- **Program Title:**
  New England College- Science Building

- **Program Type**
  - Energy efficiency related industrial process and control system (Item # 5).
  - Programs to improve the electric and thermal energy efficiency of new and existing commercial buildings (Item # 8).

- **Summary of work completed through the duration of the grant**

Task 1: *Install a 1,000,000 Btu/hr boiler at the Science building at New England College.*



- Designed a pellet boiler system to be assembled in an additional building to be built.
- Ordered all the proper components and they were shipped to the proper facilities for construction of the building and boiler system.
- The manufacturing of the boiler building and the assembly of the boiler system components was completed.
- New England College completed all the permitting and documentation for the project.
- The Site and Foundation work was completed.
- Plumbing and Electrical connections were made in the existing boiler room and run underground to the new foundation.

- The boiler building was delivered and placed on the foundation.
- Boiler connections were made to the science building.
- Finished the installation of the boiler in the boiler room.
- Silo was assembled on site and the pellet feed auger was connected to the pellet boiler.
- Installed the chimney breaching.
- Filled the silo with pellets.
- Filled the boiler with water and tested.
- Started, tested and commissioned the boiler.

Task 2: *Set up a web portal through collaboration with New England College that will provide interested parties with pertinent energy data regarding this project.*

- A web page was created to show information regarding the project. It describes the system and how it works with other sustainably heating sources. We have added pictures and as time goes on we can add energy data and other information to the page as it is collected.

Problems or Delays

- It took longer than expected for some of the steps for this project.
  - UL listing of the pellet boiler controls and equipment.
  - Permitting and finalizing of the design.
  - Issues with procuring some of the components by the manufacturing.
  - Difficulties coordinating schedules.

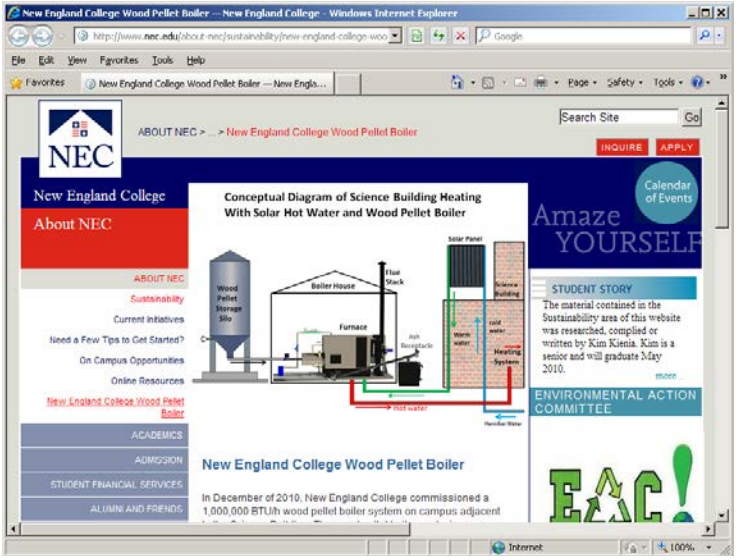
Summary of Overall Project Completed

Task 1: *Install a 1,000,000 Btu/hr boiler at the Science building at New England College.*

- A 1,000,000 btu containerize boiler was designed, built and delivered to NEC.
- The building and silo sit in the rear of the Science building. Electrical and Hydronic connections are made under ground between the science building and the boiler building.
- The boiler has been tested, commissioned and is heating a majority of the Science building at the school.

Task 2: *Set up a web portal through collaboration with New England College that will provide interested parties with pertinent energy data regarding this project.*

- A web page was created to show the work to construct the system and to track the boiler operation in the future.
- http://www.nec.edu/about-nec/sustainability/new-england-college-wood-pellet-boiler



Jobs Created

This project created many hours of work through site preparation, foundation work, building construction, plumbing, electrical, and mechanical assembly, in the state of New Hampshire. It will continue to help keep local people employed in the future for maintenance of the boiler and the local production of the pellet fuel.

Obstacles Encountered

The biggest obstacle was the longer than expected lead-times for some components resulting in delays. The biggest delays were in UL listing of the pellet boiler controls and equipment. We also had problems coordinating the work to be done with other jobs people were working on.

Beyond the Contract

As part of Task 2, Sandri Energy collaborated with New England College to create a web page documenting the pellet boiler project. We will continue to work with the students at New England College to modify and maintain this Website. We will hopefully encourage other area schools and colleges to seek alternative energy heating systems and improve their energy efficient processes on campus.

Based on the success of the project we will hope to partner with NEC on future Pellet Boiler projects in the future.

New England College will allow access (at NEC's discretion) to pre-scheduled visitors interested in seeing the pellet boiler in operation.

Also as a result of this funding, Propell Energy is working in partnership with Granite State Plumbing on additional projects.

The school will be less reliant on fossil fuel for years to come.

Promotional Materials

http://www.sandri.com/renewable-energy/
http://sandri.com/uploads/pdf/Sandri_ProjectDataSheet_NEC.pdf
http://www.nec.edu/about-nec/sustainability/new-england-college-wood-pellet-boiler

Budget vs. Actual Expenditures

Please see attached worksheet.

Future Press Activities

We are working on a few ideas and unfortunately do not have details yet. As soon as we do we will let the NHPUC know.

- Heating the Northeast tour
- Ribbon Cutting Ceremony