

NTRD Program Disclaimers

1. Disclaimer of Endorsement:

The posting herein of progress reports and final reports provided to TCEQ by its NTRD Grant Agreement recipients does not necessarily constitute or imply an endorsement, recommendation, or favoring by TCEQ or the State of Texas. The views and opinions expressed in said reports do not necessarily state or reflect those of TCEQ or the State of Texas, and shall not be used for advertising or product endorsement purposes.

2. Disclaimer of Liability:

The posting herein of progress reports and final reports provided to TCEQ by its NTRD Grant Agreement recipients does not constitute by TCEQ or the State of Texas the making of any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose, and such entities do not assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represent that its use would not infringe privately owned rights.

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

Title: FEEDLOT BIOMASS: A REBURN FUEL FOR "MAXIMUM NO_x" REDUCTION IN COAL-FIRED POWER PLANTS

Contract Number: TCEQ Grant # 582-5-65591 0015

Grantee: Texas Engineering Experiment Station, Texas A&M University

Date Submitted: Nov 23, 2006

Report for the Monthly period:

Starting Date: Oct 1, 2006

Ending Date: Oct 31, 2006

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

The overall objectives of the project are i) to develop a retrofit technology of using processed low-ash feedlot biomass (FB) as reburn fuel for potential reduction of the NO_x in coal-fired power plants by 80-90% and ii) determine the possible capture of Hg for low rank coals, reduction of CO₂ and other benefits of using animal wastes (alternately known as feedlot biomass, FB) as fuels.

In this report, the task lists are summarized and the progress/accomplishments for each task are reported for the last month. Tasks are indicated in bold letters

Task 1: Fuel Characteristics of lignite, sub-bituminous coal, raw manure (RM), and partially composted manure (PC)

2.1. Task Statement: The PERFORMING PARTY will analyze the fuel characteristics of raw manure (RM), and partially composted manure (PC).

Progress to date

Task 1 is 100% complete and a report has been submitted to TCEQ on Aug 1, 2006

Task 2: Small Scale Reburn Experiments for NO_x reduction

2.2. Task Statement: The PERFORMING PARTY will perform small scale reburn studies with fuels listed in Task 1 as reburn fuels except DB, RM and their blends. The conventional TAMU co-fired boiler burner facility will be used for the studies

Task 2 is 100% complete and a report has been submitted to TCEQ on Aug 1, 2006

Task 3: ***Pilot scale test at the 500,000 BTU/hr DOE-NETL facilities to verify the small-scale test data on NO_x reduction and Hg capture and obtain optimum conditions.***

2.3. Task Statement: The pilot plant at the Combustion and Environmental Research Facility (CERF) will be used for testing LA-RM and LA-PC fuels and measuring the NO_x emissions. The PERFORMING PARTY will also obtain the optimum operating conditions and appropriate injector configuration.

Schedule: The PERFORMING PARTY shall complete this task within nine months 19 months from NTP (or 11/1/06) of the signed Notice to Proceed Date as issued by TCEQ.

Progress to date

Task 3 and Pilot Scale Tests: The end date for testing and submission of Task 3 report is by 11/1/06 while final report is due 12/31/2006. Recall that two vendors have been contacted for pilot scale tests. There may be difficulty in signing the Non-Disclosure agreement (NDA) with Vendor # 1 but the cost of tests is approximately same as what TCEQ had currently allocated; Vendor # 2 has signed NDA but their facility is much larger and cost is almost double that of Vendor # 1. Since funds from DOE program are available for pilot scale testing of Dairy Biomass (to be performed sometimes in March 2007), both pilot scale tests could be combined as a single test so that there are sufficient funds for performing the pilot scale test with Vendor 2. Thus a request for an extension on pilot scale test task and/or contract to May 31, 2007 (current end date for DOE -Golden Contract) has been forwarded to TCEQ. This will also help TAMUS to file more patent applications.

A detailed call for proposal on pilot scale has been prepared and submitted to TAMU-TEES; however it requires official approval from TCEQ for contract extension to a later date.

Task 4: Reburn modeling to predict NOx capture by biomass fuels.

2.4. Task Statement: The PERFORMING PARTY will create a model for characterizing reburn performance with coal, FB and coal: FB blends in predicting NOx and as well as Hg control performance. This task will be conducted primarily using zero Dimensional reburn code with characteristic mixing time scale concept. The simplified model will provide directions for improvement of NOx capture and assist in developing the test matrix.

Task 4 is 100% complete and a report has been submitted to TCEQ on Aug 1, 2006

Task 5: Perform the economics of the use of FB as reburn fuel in coal fired power plants and cost of NOx reduction compared to other technologies.

2.5. Task Statement: The PERFORMING PARTY will conduct an economic analysis for all four biomass fuels listed in Task 1.

Task 5 is 100% complete and a report has been submitted to TCEQ on Aug 1, 2006

Task 6: Reporting

2.6. Task statement: The PERFORMING PARTY will prepare and submit monthly detailed progress reports on the status of this project and a comprehensive final report while ensuring compliance with all TCEQ program requirements.

2.6.1. The PERFORMING PARTY will coordinate all project resources to ensure compliance with NTRD program requirements while providing deliverables on-schedule and on-budget.

2.6.2. The PERFORMING PARTY will generate monthly progress reports and a final report summarizing all aspects of the project based on data from the task completion reports, including the final emissions testing report.

2.6.3. Schedule: The PERFORMING PARTY shall submit monthly reports to TCEQ by no later than 10 days after the end of each month. The PERFORMING PARTY shall submit the final report to complete

this task within 21 months from NTP (or 12/31/06) of the signed Notice to Proceed Date as issued by TCEQ.

2.6.4. Deliverables: The PERFORMING PARTY shall submit monthly progress reports with associated billing statements and a final project summary report.

Progress: Final Report is behind schedule at this time due to delay in pilot scale tests.

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

Current status and progress on all tasks are reported

Others:

Section II: Problems/Solutions

<p>Problem(s) Identified</p> <p>(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)</p>	<p>Task 1: Fuel shipments for pilot scale testing has not yet been shipped (see Task 3) None</p> <p>Task 2: None</p> <p>Task 3: The cost of pilot scale tests with vendor 2 is double that of vendor 1 due to larger size of facility and almost twice more than what TCEQ has allocated. None</p> <p>Task 4: None</p> <p>Task 5: None</p>
<p>Proposed Solution(s)</p> <p>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</p>	<p>Task 1: see Task 3</p> <p>Task 3: Request has been forwarded to TCEQ for an extension of deadline of task # 3 to May 31, 2007 (the current end date for DOE) so that both pilot scale tests can be performed and DOE funds can be used to make up for the increased cost.</p> <p>Task 4:</p> <p>Task 5:</p>

<p>Action(s) Conducted and Results</p> <p>(Please describe the action(s) taken to resolve the problem(s) and its effect)</p>	<p>Tasks 2</p> <p>Task 3: Further negotiations are planned; a request for proposal has been prepared</p> <p>Task 4:</p> <p>Task 5:</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)

Next Month's Goals

Task 3: A call for proposal on pilot scale has been prepared. It has been submitted to TAMU-TEES

 Authorized Project Representative's Signature

Date: 11/23/06

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.