

NTRD Program Disclaimers

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

Contract Number: 582-5-65591-0001

Grantee: Catalytica Energy Systems

Date Submitted: 3/10/05

Report for the **Monthly** period: February, 2005

Starting Date 10/18/04

Ending Date 10/31/05

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

Task 2 Accomplishments:

- Task 2.2.2 – Have completed AVL8 testing points with on-vehicle controller and fuel nozzle with NOx conversion above 50%. Have defined transient cycle test protocols for simulated FTP transient operation. Completed over 300 hours of durability testing on the Mountain View CA stationary generator set to examine initial product durability. Post test subscale performance results show acceptable XFP reductant (H2 and CO) generation. An additional 200 hours of durability testing (for a total of 500 hours) is planned in March.

Task 3 Accomplishments

Task 2.3.1

- The design is complete and the container hardware has been fabricated. A cross section of the truck mounted system design is shown in Figures 1 & 2 in the Attachment of this report. Ninety percent of the hardware has been received at CESI with the remaining hardware due for delivery by early April.
- The mechanical and thermal analysis of the container is complete. Figures 3 & 4 show the results of these analyses. Based on worst case operational scenarios, the life of the container is expected to exceed the 5,000 hour design goal.
- The initial XononD unit container has been assembled and is shown in Figure 5. This unit is installed on the DT466 powered delivery truck (see Figure 6) for initial field testing. The first fuel skid was assembled, pressure tested and installed on the truck.

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

The accomplishments listed above are all part of Tasks 2 through 3 in the Grant Agreement.

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>(1) <i>Hardware delays due to supplier issues will likely delay the installation of the units in Denton until early summer.</i></p> <p>(2) <i>Denton vehicle inventory may not be able to support two DT466 powered refuse trucks per November request to replace dump truck (1997, VIN 1HTSHAAR3VH489896) with an additional refuse vehicle.</i></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>(1) <i>Work with suppliers to mitigate deliveries to insure no further schedule delays.</i></p> <p>(2) <i>Coordinate with City of Denton fleet manager to identify an additional International DT466 powered refuse truck or other suitable vehicle platform.</i></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>(1) <i>Work with suppliers in process</i></p> <p>(2) <i>Denton fleet manager identified an additional refuse vehicle: 1996 International Refuse Truck, VIN: 1HTSHAAR5TH398948, Engine Model: DT466E, 250 HP.</i></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)*

- (1) *Continue Task 2.2.2 Dynamometer testing activities*
 - a. *Initiate system transient testing to determine simulated FTP performance*
 - b. *Complete additional 200 hours of durability testing on the Mountain View generator set*
- (2) *Begin Task 2.3.2 Assembly of Denton test articles*
 - a. *Complete the installation of the entire XononD system on the CESI test bed vehicle*
 - b. *Complete assembly of the Denton units fuel skids*
 - c. *Begin assembly of the two Denton XononD containers*



Authorized Project Representative's Signature

Date: 3/10/05

Attachment

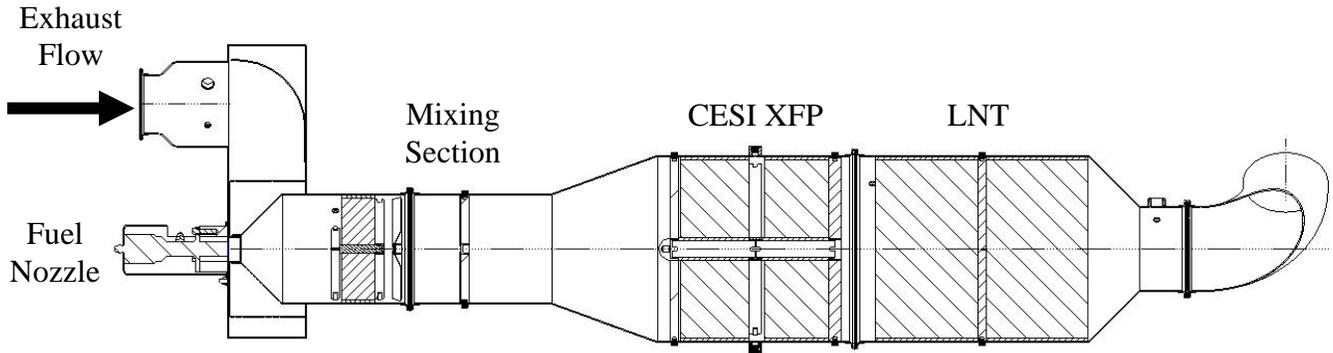


Figure 1: Cross Section of XononD on vehicle design

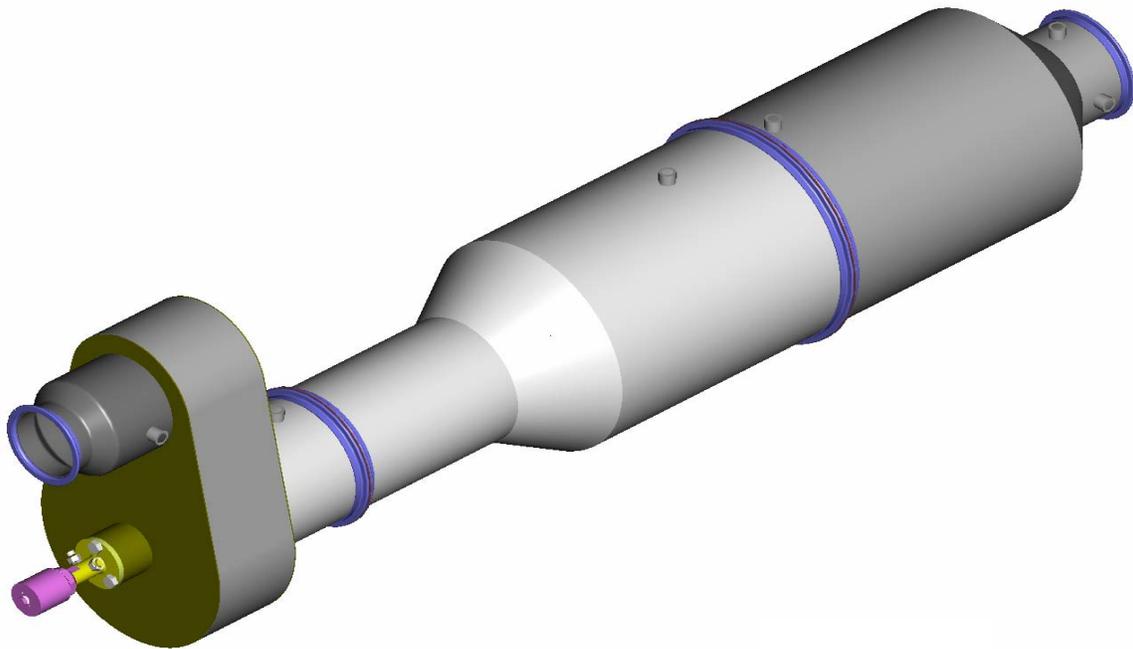


Figure 2: 3D isometric view of the XononD system

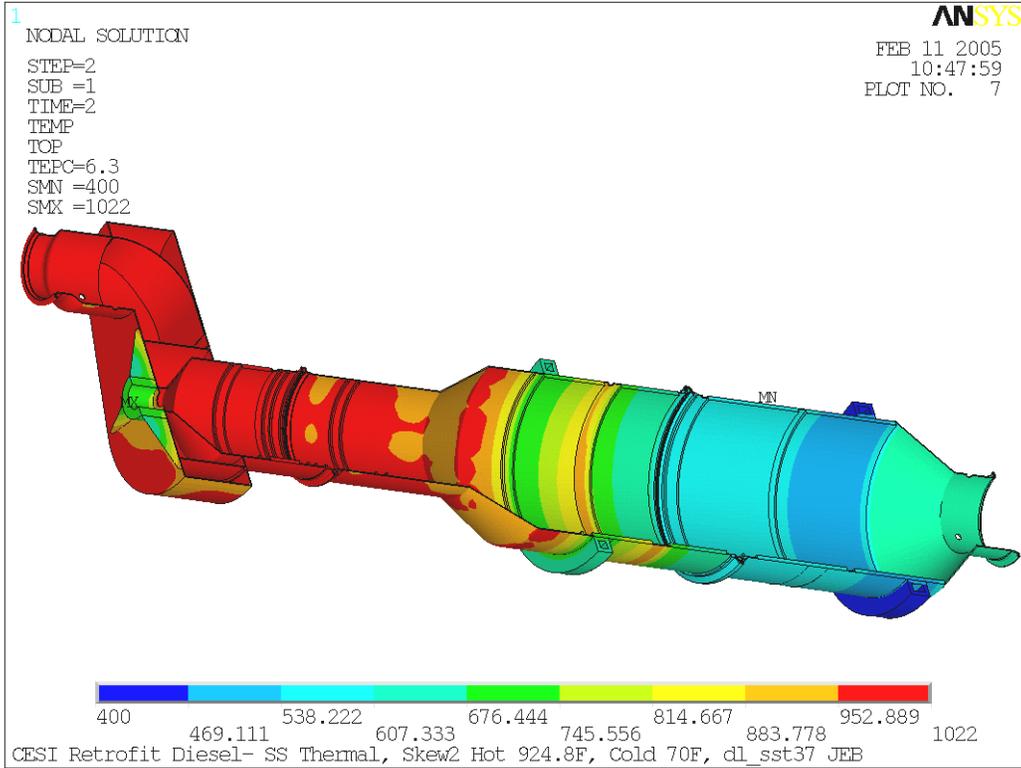


Figure 3: Thermal analysis results of XononD container at the design point

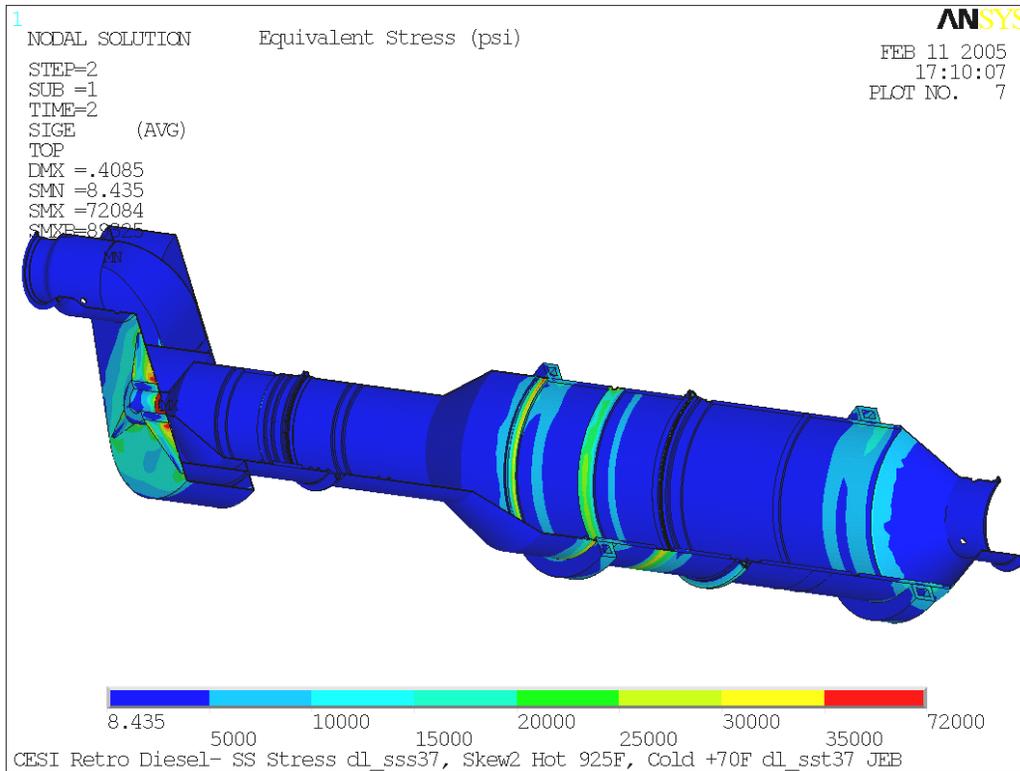


Figure 4: Stress analysis results of XononD container at the design point



Figure 5: XononD mounted on CESI DT466 powered test vehicle (muffler shown for size comparison)



Figure 6: XononD CESI DT466 powered test vehicle