

## **NTRD Program Disclaimers**

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

Contract Number: \_\_\_\_\_ 582-5-65591-0009 \_\_\_\_\_

**Received**

Grantee: \_\_\_ General Electric Transportation Rail , Erie, PA \_\_\_

**DEC 12 2005**

Date Submitted: \_\_\_\_\_ 12/8/05 \_\_\_\_\_ **Implementation Grants Section**

Report for the **Monthly** period:

Starting Date \_\_\_\_\_ 10/22/05 \_\_\_\_\_ Ending Date \_\_\_\_\_ 11/21/05 \_\_\_\_\_

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

1. Final EPA testing was completed and test data submitted for certificate \*
2. This is the final report for the project
3. As required by the contract one copy each of SwRI final test report and EPA certificate application are attached for TCEQ review.
4. The test data that are considered as GE confidential and proprietary information are indicated accordingly.

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

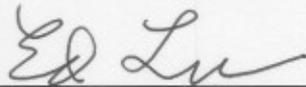
\* Indicated Southwest Research Institute contractual development and test activities

Section II: Problems/Solutions

<p><b>Problem(s) Identified</b></p> <p><i>(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)</i></p>	<p><i>No issues or problems for this period</i></p>
<p><b>Proposed Solution(s)</b></p> <p><i>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</i></p>	
<p><b>Action(s) Conducted and Results</b></p> <p><i>(Please describe the action(s) taken to resolve the problem(s) and its effect)</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)*

- Project is complete - none



Date: \_\_\_\_\_ 12/8/05 \_\_\_\_\_

\_\_\_\_\_  
*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.*

# SOUTHWEST RESEARCH INSTITUTE®

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ISO 9001 Certified  
ISO 14001 Certified

December 9, 2005

**TO:** GE Rail  
2901 East Lake Road - Bldg. 42-304  
Erie, Pa. 16531

**ATTN:** Mr. Ed Lu

**SUBJECT:** Test Results for 16-645-E Engine, SwRI Project 03.05249



Table 1 summarizes the EPA Switch-Cycle duty cycle weighted exhaust emissions for the 16-645-E locomotive engine run in the final Tier 2 NO<sub>x</sub> configuration on 04-Nov-2005. This table also includes EPA Tier 0 exhaust emission standards for HC, CO, NO<sub>x</sub>, and PM. Tier 0 regulations, which went into effect on January 1, 2000, are applicable to locomotives manufactured between January 1, 1973 and December 31, 2001.

**TABLE 1. 16-645-E FTP EXHAUST EMISSIONS SUMMARY**

Locomotive/ Configuration	EPA Switch Cycle Weighted Emissions			
	HC, g/hp-hr	CO, g/hp-hr	NO <sub>x</sub> , g/hp-hr	PM, g/hp-hr
<i>EPA Tier 0 Maximum</i>	2.10	8.0	14.0	0.72
16-645-E	1.52	2.1	7.8	0.37

**TABLE 2. FTP SMOKE EMISSIONS SUMMARY**

Locomotive/ Configuration	Smoke Opacity, Percent Opacity		
	Max. SS	Max. 30-Sec Peak	Max. 3-Sec. Peak
<i>EPA Tier 0 Maximum</i>	30%	40%	50%
16-645-E	14%	15%	21%

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Department of Engine & Emissions Research

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Implementation Grants Section



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