INFORMATION COLLECTION REQUEST

SUPPORTING STATEMENT

Information Requirements for Locomotives and Locomotive Engines (Proposed Rule)

November 2006

Compliance and Innovative Strategies Division
Office of Transportation and Air Quality
Office of Air and Radiation
U.S. Environmental Protection Agency

Information Collection Request

1. Identification of the Information Collection

1(a). Title and Number of the Information Collection

Information Requirements for Locomotives and Locomotive Engines (Proposed Rule for Locomotive and Marine Engines)

ICR Tracking Number: 1800.04

1(b). Short Characterization / Abstract

The Clean Air Act (Act) authorizes EPA to adopt emission standards for new nonroad engines. We need information to verify that manufacturers comply with emission standards – before production begins, during production, and after units have been placed into service. In the rulemaking we require manufacturers to generate or retain information to demonstrate that engines comply with emission standards.

Manufacturers generally send the data they collect to us and keep these records and other pertinent information. We may request to see any of these records.

We and the regulated companies will use the data exclusively to ensure compliance with emission standards. Information such as engine family, total numbers of engines built, and emission rates for specific pollutants, are examples of what we require.

This ICR is a revision to the existing information collection approved under OMB control number 2060-0392. The revisions generally include new standards, testing, and reporting requirements for nonroad diesel engines.

2. Need for and Use of the Collection

2(a). Need / Authority for the Collection

The data we require in this ICR is necessary to comply with Title II of the Clean Air Act, as amended in 1990. The Act directs us to adopt regulations for nonroad engines if we determine those engines contribute significantly to air pollution in the U.S. Now that we have made this determination, the Act directs us to set emission standards for any category of nonroad engines that contributes to air quality nonattainment in two or more areas in the U.S. We can only meet the requirements of the Act by collecting data from the regulated industry. Also, we will only have an effective program if we know that these engines maintain their certified emission level throughout their operating lives.

2(b). Practical Utility / Users of the Data

We will oversee the certification process and maintain the program database. We will use the data items to verify compliance with the following requirements associated with the new emission standards.

- Determine whether or not a prototype engine may adequately represent an engine family
- Ensure compliance of production-line engines
- Ensure compliance of in-use engines
- Issue a recall to correct a noncompliant family of engines
- Confirm actual emission benefits gained by the program
- Ensure proper maintenance and setting of physically adjustable parameters
- Aid in the production projections to randomly select the engines which are to undergo testing
- Determine whether a prototype or freshly manufactured engine should be issued a certificate of conformity
- Ensure that durability of emission controls is consistent with the manufacturer's stated useful life
- Ensure control of emissions across the range of engine operation expected in the normal course of its lifetime
- Manage the importation of engines that meet requirements

3. Non-duplication, Consultations, and Other Collection Criteria

3(a). Non-duplication

Emissions from the engines and vehicles subject to the new emission standards have been largely unregulated in the United States. Moreover, state and local governments are preempted from adopting emission standards for many of the engines covered by this rulemaking. For this reason, the information requested under this ICR is not available from other sources.

3(b). Public Notice Required Prior to ICR Submission to OMB

We will publish a proposed rulemaking in the *Federal Register* regarding emission standards for locomotive and marine engines. The proposed rule will include invitations to comment on the ICR. We have already received comments on several issues related to information collection as part of our effort to develop the proposal. These comments and our responses are reflected in the proposal and will be addressed in the summary and analysis of comments and this ICR for the final rule.

3(c). Consultations

We have met with companies that will be subject to the new emission standards. These contacts are summarized as follows:

Contact: Steve Fritz
Company: Southwest Research Institute (testing laboratory)
Phone: 210-522-3645

Contact: Vish Talekar
Company: General Electric (locomotive manufacturer)
Phone: 814-875-6924

3(d). Effects of Less Frequent Collection

Annual reporting for certifying engine families is necessary to align with the regulatory requirement to certify engine families every year. Quarterly reporting of results from production-line testing is necessary to allow adequate response to any problem that may arise. Quarterly reporting of AB&T credit balances ensures that manufacturers hold valid credits and warns manufacturers in advance of the need to acquire credits. Manufacturers must not have a negative credit balance at the end of the year. In-use testing reports must be submitted once per year, within three months of the completion of the required testing. Providing this information to EPA at a less frequent interval would compromise the Agency's ability to expeditiously evaluate the emissions results and determine, in a timely manner, whether in-use locomotives conform to emission standards.

3(e). General Guidelines

This ICR complies with the general guidelines, except for the requirement to retain records for up to eight years, as described in 4(b)(i) and (ii) below. This longer time period for retaining records is required under the rule.

3(f). Confidentiality

We hold information from the engine manufacturers as confidential until the associated engines are available for purchase. Manufacturers may submit proprietary information, consisting generally of sales projections and certain sensitive technical descriptions. We grant confidentiality in accordance with the Freedom of Information Act, EPA regulations at 40 CFR part 2, subpart B, and class determinations issued by our Office of General Council.

3(g). Sensitive Questions

No sensitive questions are asked in this information collection.

4. The Respondents and the Information Requested

4(a). Respondents / NAICS Codes

Respondents are manufacturers of nonroad equipment and engines within the following North American Industry Classification System codes:

333618	Other Engine Equipment Manufacturing
336510	Railroad Rolling Stock Manufacturing
482111	Line-haul Railroads

4(b). Information Requested

(i). Data Items

A. Certification:

To obtain a certificate of conformity, all manufacturers and remanufacturers must describe their products and supply test data to verify compliance. This information is organized by "engine family" groups expected to have similar emission characteristics. The burden associated with certifying a given engine family is reduced after the first production year (model year), because data and information from previous years can be "carried over" when no significant changes have occurred. For instance, an engine family certified in model year 2009 can be certified in the 2010 model year by "carry over" of data and paperwork from the 2009 model year if no significant changes have occurred to the engine family between model years. Allowing manufacturers and remanufacturers to "carry over" data and paperwork saves them the burden of duplication of data and paperwork which would occur in the absence of such provisions. Manufacturers and remanufacturers must also retain records.

Manufacturers must keep records for eight years, except routine emission records. Manufacturers must keep routine emission records for only one year.

When a manufacturer or remanufacturer needs to make changes to a certified engine, or to add an engine model to an already certified engine family, the following information must be submitted. Running changes are submitted using the same electronic format used to apply for a certificate of conformity.

B. Averaging, Banking, and Trading (AB&T):

To participate in the AB&T program, manufacturers and remanufacturers submit calculations of the amount of credits they generate or need to certify each locomotive family, based on each family’s emission limit and sales volume. Participation in the program is voluntary.

Since all new locomotives and locomotive engines are required to meet both the line-haul

and switch duty-cycle standards, manufacturers and remanufacturers can participate in separate line-haul and switch AB&T programs. They cannot, however, use credits generated under one program to satisfy the requirements of the other. Credits can only be generated for NO_x and PM. Only manufacturers and remanufacturers of new locomotives and new locomotive engines manufactured or remanufactured in the 1999 model year or later can participate. Failure to submit and keep accurate information can result in EPA voiding the certificate of the affected family *ab initio*, among other penalties.

Records are to be kept for eight years.

C. Manufacturer Production-Line Testing (PLT) and Remanufacturer Installation Auditing

Information requested under the PLT program consists mainly of test results and a description of the locomotives tested and the conditions under which the tests took place. This information is essential to determine if locomotives and locomotive engines are in fact complying with emission standards at different stages. Whereas the certification test information tells us that a specific engine prototype is capable of meeting emission standards, PLT data is used to determine if mass-produced engines also comply.

Only manufacturers of freshly manufactured locomotive engines are subject to PLT requirements. However, if EPA has reasons to believe that there are problems with a remanufacturer's production, the Agency can extend this requirement to that remanufacturer. EPA can also require manufacturers and remanufacturers to submit or retain additional information not otherwise specified.

Each calendar quarter, manufacturers must conduct testing on a sample of locomotives or locomotive engines taken directly from the assembly line and submit a report of the results.

When a locomotive or locomotive engine fails PLT or an audit, the certificate of conformity issued to that locomotive or locomotive engine family is suspended, effective from the time the testing of that locomotive or locomotive engine is completed. The affected manufacturer or remanufacturer must then remedy the nonconformity, retest or reaudit, and submit reports.

Records must be kept for eight years after completion of all testing.

Each calendar quarter, remanufacturers must audit the installation of locomotives covered by its certificate(s) of conformity for proper components, component settings and component installations on randomly chosen locomotives in an engine family. Within 30 days of the end of each quarter, remanufacturers must submit a report of the results.

D. In-Use Testing

Information requested under the in-use testing program consists mainly of test results and a description of the locomotives tested and the conditions under which the tests took place. This information is essential to determine if locomotives and locomotive engines are in fact complying with emission standards at different stages. Whereas the certification test information tells us that a specific engine prototype is capable of meeting emission standards, in-use data is used to verify that engines are correctly maintained and that they meet the standards at 50% to 75% into their useful lives.

Manufacturers and remanufacturers must test, each year, a sample of used locomotives from one of their certified locomotive engine families previously chosen by EPA. If one manufacturer holds certificates for both freshly manufactured engine families and remanufactured engine families, EPA can request the manufacturer test one engine family from each category. EPA may request a manufacturer to test more than one engine family if it has reason to believe that engines in an engine family do not comply with in-use standards. Engine families of less than 10 locomotives per year do not need to participate in in-use testing. For each locomotive tested, the manufacturer or remanufacturer must submit a report within 30 days of completion of the testing.

E. Emission-Related Defects

Manufacturers must report to us if they learn that a substantial number of their engines have emission-related defects. This is normally not a required collection of information, but if manufacturers learn that there is or might be a substantial number of emission-related defects, then they must send =information describing the defects to us.

Similar to emission-related defect reports, operators of locomotive engines must report incidences of improper operation of emission aftertreatment controls. Engine operators are only allowed to continue engine operation with a malfunctioning emission aftertreatment control if an emergency situation exists. Outside of these circumstances, it is illegal to operate the engine without a properly functioning emission aftertreatment control. This is not a normal or routine required collection of information. Rather, the operator would only make a report if the circumstance should ever be encountered.

(ii). Respondent Activities

Companies retain records as hard copy and may also reduce the information to microfilm, computer disks, etc. We require very little submission of information to process applications for certification. This reduces the resource burden, both for the industry and for us. However, because we do not have the information on file, we depend on manufacturers to retain the records to allow us to verify compliance throughout the useful life of the engines. Eight years is sufficient time for this information for most engines. Any investigation of in-use engines generally does not start until three or more years after the manufacturer completes the application for certification.

The certification information includes records related to the deterioration of an engine's

emission controls with age. Some manufacturers also participate in emission-credit programs, in which they produce some engines with emissions above the standard and others with emissions below the standard. This is an optional program, so we don't include specific estimates related to any additional reporting or recordkeeping for generating or using emission credits.

Manufacturers must also report to us if they learn that a substantial number of their engines have emission-related defects. This is normally not a required collection of information, but if manufacturers learn that there is or might be a substantial number of emission-related defects, then they must send us information describing the defects.

5. The Information Collected – Agency Activities, Collection Methodology, and Information Management

5(a). Agency Activities

Our certification and tracking process involves reviewing applications and emission data from engine and vehicle manufacturers. From this data, we issue certificates of conformity, and may confirm that production and in-use engines continue to comply with standards. We may also select families to be tested in a given production year and require additional testing, based on an analysis of the submitted data.

5(b). Collection Methodology and Management

We currently use computers extensively to collect information from vehicle manufacturers. Based on this approach as a model, much routine information (test results, projections) can be electronically transmitted directly from the manufacturers to our computer database. We expect to publish this information on our website once certified engines go into production (www.epa.gov/otaq/).

5(c). Small Entity Flexibility

EPA has exempted remanufactured locomotive and locomotive engines owned by small railroads (as defined by the Small Business Administration) from the definition of 'new locomotive' and 'new locomotive engine'; thus exempting these remanufactured locomotives and locomotive engines from compliance with certain emission standards and regulations. This is due to the fact that the number of locomotives owned and operated by small railroads is very low and that the contribution of these engines to the sector's emission inventory is considered to be trivial.

Under the In-use Testing Program, locomotive families of less than 10 locomotives are exempted from the requirements of the program. This provision reduces the cost of the program for manufacturers and remanufacturers with limited production.

Under the other programs included in this ICR (AB&T and PLT), the information being

requested is considered to be the minimum needed to effectively conduct and maintain their integrity. Further measures to simplify reporting for small businesses do not appear prudent or necessary.

5(d). Collection Schedule

The principal reporting requirements are associated with certification to the emission standards, which begin to apply in the 2011 time frame. Reporting requirements therefore do not begin until the end of the preceding year at the earliest. Annual reporting is based on the beginning of the model year, which can vary for each manufacturer and for each engine family.

6. Estimating the Burden and Cost of the Collection

Engine manufacturers comply with emission standards by submitting an application for certification, which obligates them to do a certain amount of testing to show they comply with the standards. The following discussion develops burden and cost estimates for the first three years of the program.

6(a). Estimating Respondent Burden

The estimates of respondent burden utilize data from the affected industries or commercially available databases. Burden hours per engine family are based upon established hour amounts for engine families, as published in the Application for Motor Vehicle Emission Certification and Fuel Economy Labeling ICR (OMB No. 2060-0104).

The burden for certification testing is generally based on conducting four engine tests for each engine family, then using that test data for several years. The estimated cost for full certification testing, including durability demonstration testing, is $15,000 per engine test (combining labor and O&M expenses). The manufacturer's application for certification involves an extensive effort the first year, followed by relatively little effort in subsequent years. We estimate that manufacturers will conduct new certification testing every five years; the costs have been estimated on an annual average basis.

In addition to testing, manufacturers must prepare the application for certification and maintain appropriate records. We have estimated the cost of these combined activities, which include engineering and clerical effort, to be $10,000 per engine family per certification cycle. As with the testing costs, we are presenting annual average costs.

Manufacturers are also expected to conduct testing on their engines after they have been produced to confirm that they are built to the same tolerances as the certification engine. We base the estimated costs on conducting a minimum of 5 tests per engine family, at approximately $5,000 per test.

Manufacturers are also expected to conduct testing on their engines after they have been placed into service to confirm that they continue to meet emission standards. Testing selected families using field-testing equipment instead of full laboratory equipment allows for substantial data collection for much lower costs than would be incurred by pulling engines out and testing them on a dynamometer. We base the estimated costs on testing 10 percent of engine families, at approximately $8,000 per family. This allows for testing multiple engines in each family.

These burden estimates apply equally whether the manufacturer conducts the required activities, or if the manufacturer hires a third party for some of these activities.

6(b). Estimating Respondent Costs

(i). Estimating Labor Costs

To estimate labor costs, EPA used the Bureau of Labor Statistics' National Industry-Specific Occupational Employment and Wage Estimates (May 2005) for Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS Code 333600) and increased by a factor of 1.5 to account for benefits and overhead. The specific rates used are listed below. These are mean hourly rates.

Labor Costs Estimates

Occupation	SOC Code Number	Mean Hourly Rate (BLS)	Adjusted for Benefits & Overhead
Mechanical Engineering Technician	17-3027	$25.56	$38.34
Engineering Managers	11-9041	$47.49	$71.24
Secretaries, Except Legal, Medical and Executive	43-6014	$15.62	$23.43

(ii). Estimating Capital and Operations and Maintenance Costs

Operation and maintenance costs include expenses related to engine testing. Costs are for laboratory time, the use of test equipment, engine parts, fuel and other supplies, and fabrication of test tools and fixtures. Direct labor costs and operations and maintenance costs combine for the total test costs described in Section 6(a) above. The total annual O&M costs are $1,732,705.

Engine manufacturers are required to pay a fee every model year when submitting an application for a certificate of conformity. This fee is requested under the authority of the CAA Section 217. Manufacturers and remanufacturers of locomotives and locomotive engines pay a fee

of $802 per application per model year.

(iii). Capital / Start Up Costs vs. Operating and Maintenance (O&M) Costs

Companies required to conduct testing generally either have testing facilities or are expected to conduct testing at a contractor's laboratory. Thus, no capital or startup costs are anticipated for purchasing emission testing equipment.

(iv). Annualizing capital costs

With no estimated capital or start-up costs, there is no need to annualize these costs.

6(c). Estimating Agency Burden and Cost

The Heavy-Duty and Nonroad Engine Group (HDNREG) administers emission certification programs. The group has approximately 17 full-time employees. We project 50 hours per week of staff time (at $63 per hour, loaded) to manage engine compliance programs related to new emission standards. This comes to approximately 2,600 hours or $163,800 per year to oversee the requirements of the programs associated with this ICR.

6(d). Estimating the Respondent Universe and Total Burden and Costs

In model year 2004, EPA received 65 certification applications from 4 manufacturers and 7 remanufacturers. (Some of the companies in both categories are the same; the actual number of companies affected by this collection is seven).

Three respondents are currently participating in the AB&T program with 19 engine families. All manufacturers and remanufacturers must participate in the PLT and In-use Testing Programs.

The following table shows the labor and other costs associated with meeting the existing and new requirements for each engine family. This includes certification costs, plus the cost of any additional testing. Per-family costs are multiplied by the number of engine families and added to estimated capital costs (if any) to arrive at an estimated total cost.

Information Collection Activity	Average Annual Burden and Cost Per Family						No. of Families	Total Hours and Costs	
	Technician @ $38.34/hr	Manager @ $71.24/hr	Clerical @ $23.43/hr	Hours per Family	Labor Cost per Family	O&M Cost		Total Hours / Year	Total Cost / Year
Cert. Application*	36	2	6	44	$1,663	$0	65	2,860	$160,245
Recordkeeping	2.2	0.2	2	4.4	$145	$0	65	286	$9,455
Cert./Durability Testing	168			168	$6,441	$5,559	65	10,920	$780,000

AB&T	40	6	80	126	$3,835	$0	19	2,394	$72,873
PLT	100	5	10	115	$4,425	$20,576	65	7,475	$1,625,000
In-Use Testing	60	5	5	70	$2,774	$5,226	7	455	$52,000
Defect Reporting	40	6	80	126	$3,835	$0	7	819	$24,930
Subtotal				Total O&M Cost =		$1,732,705	--	25,209	$2,724,503

*Costs for certification application include fees assessed at $802 per family.

6(e). Bottom Line Burden Hours and Cost Tables

(i). Respondent Tally

Bottom-line burden and cost for the first three years of the rulemaking are shown in the table below. The table shows industry totals and average values for each respondent by category. These estimated costs include startup expenses (for example, the purchase of emission sampling equipment and new recordkeeping software).

Number of Respondents	Industry Totals				Average per Respondent	
	Annualized Capital Costs	Total O&M Costs per Year	Total Hours per Year	Total Costs per Year	Total Hours per Year	Total Costs per Year
7	$0	$1,732,705	25,209	$2,724,503	3,601	$389,215

(ii). The Agency Tally

Our estimated burden is approximately 2,600 hours per year (or $163,800) to oversee the requirements of the programs associated with this ICR, as described in Section 6(c).

6(f). Reasons for Change in Burden

We are proposing emission standards for locomotives and locomotive engines. This information collection request updates the estimated burden to reflect the additional effort required to meet the new standards and consolidates all the various recordkeeping and reporting items for these engines.

6(g). Burden Statement

Burden Statement: The annual public reporting and recordkeeping burden for this collection of information is estimated to average 86 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions;

develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID Number EPA-HQ-OAR-2005-0036, which is available for online viewing at www.regulations.gov, or in person viewing at the Air Docket in the EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Avenue, NW, Washington, D.C. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room and the Air Docket is (202) 566-1744. An electronic version of the public docket is available at www.regulations.gov. This site can be used to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. When in the system, select "search," then key in the Docket ID Number identified above. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, D.C. 20503, Attention: Desk Officer for EPA. Please include the EPA Docket ID Number EPA-HQ-OAR-2005-0036 and OMB Control Number 2060-0460 in any correspondence.

Part B of the Supporting Statement

This part is not applicable because no statistical methods were used in collecting this information.