INFORMATION COLLECTION REQUEST

SUPPORTING STATEMENT

Information Requirements for Nonroad and On-Highway Heavy-Duty Engines (Proposed Rule for Marine Engines)

November 2006

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

1. Identification of the Information Collection

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

Information Requirements for Nonroad and On-Highway Heavy-Duty Engines (Proposed Rule for Locomotive and Marine Engines)

ICR Tracking Number: 1684.10

1(b). Short Characterization / Abstract

The Clean Air Act authorizes EPA to adopt emission standards for new on-highway and 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 us the data they collect 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 2060-0287. 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 on-highway and 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.

Practical Utility / Users of the

2(b).

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:	George Valencia
Company:	Daewoo Heavy Industries
Phone:	770-831-2228

Contact:Richard BishopCompany:Deere Power SystemsPhone:319-292-8157

Contact:	Saul Boast
Company:	Caterpillar
Phone:	309-675-5217

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 productionline 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. Selective Enforcement Auditing (SEA) information is only collected on occasion, when EPA audits a manufacturer.

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. **Respondents and Information Requested**

4(a). Respondents / NAICS Codes

Respondents are manufacturers of on-highway and nonroad engines within the following North American Industry Classification System (NAICS) codes:

333618	Other Engine Equipment Manufacturing
336312	Gasoline Engine and Engine Parts Manufacturing

4(b). Information Requested

(i). Data Items

A. Certification:

All manufacturers 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. Manufacturers must also retain records.

The certification burden for a given engine family is reduced after the model's first production 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. EPA may also allow manufacturers to "carry across" data and paperwork from on-highway certification of an engine family which they produce for both the on-highway and nonroad markets if there are no significant differences between the on-highway and nonroad versions of the engine family. Allowing manufacturers to "carry over" and "carry across" data and paperwork saves manufacturers the burden of duplication of data and paperwork which would occur in the absence of such provisions.

Although different data items may be requested depending on the type and specific characteristics of the engine family to be certified, the data requested is similar for all three engine categories included in this ICR (nonroad CI, marine CI, and on-highway heavy-duty). Some of the data items are only required to be kept in records and submitted upon request.

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

When a manufacturer needs to make changes to a certified engine or add an engine model to an already certified engine family, this 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 submit calculations of the amount of credits they generate or need to certify each engine family, based on each family's emission limit and sales volume. Participation in the program is voluntary.

AB&T records are to be kept for eight years.

C. Selective Enforcement Auditing (SEAs) and Marine CI Production Line Testing:

All Nonroad CI engine manufacturers are subject to be audited by EPA. EPA collects the information needed for SEAs in two stages: First, a limited number of manufacturers are asked to submit their production plans for a specified period of time, as described below. EPA uses this "pre-audit" information to efficiently determine which manufacturers and engine models to audit. After a manufacturer has been chosen, EPA issues a test order specifying which engine models and configurations will be tested. When all required testing in completed, manufacturers submit a report containing all testing results. This "audit" information is then used to determine compliance with applicable emission standards. EPA can also request manufacturers to submit additional SEA information or keep records not otherwise specified.

Although there are no SEA requirements under marine CI regulations, marine engine manufacturers must conduct production-line testing. The marine CI PLT Program has data requirements very similar to those of the SEA program, however testing requirements are different. Whereas in SEA, manufacturers are only required to test on occasion when EPA orders testing, under the PLT, Program manufacturers must test a sample of engines every quarter.

Upon EPA's request, engine manufacturers must submit information regarding engine production. EPA uses this information to determine which engines will be audited.

Within five working days after all tests ordered by EPA are completed, manufacturers must submit a report of testing information.

Records must be kept for one year after all ordered tests have been completed. Records may be kept in any media, according to the manufacturer's procedures, provided that in every case all the information contained in the hard copy is kept.

During an SEA, manufacturers are required to allow EPA officials to enter to facilities where engines are being manufactured, stored, or tested and where records may be located. Manufacturers are also expected to afford reasonable assistance (such as clerical or translation services, photocopying, etc.) to EPA personnel conducting the audit. These requirements also apply when EPA conduct an audit while marine CI engine manufacturers conduct PLT testing.

When an engine family fails an audit or PLT, the certificate of conformity issued to that engine family may be revoked or suspended, in whole or in part, effective no later than 10 days after failure. A certificate may be suspended for other reasons established at 89.511(d), including refusal by the engine manufacturer to allow EPA access to the appropriate facilities. The affected manufacturer must then remedy the nonconformity, retest or reaudit. In any of these cases, the affected manufacturer must submit a report describing the reason for the noncompliance and the remedy to be implemented, among other items appropriate to each case.

If the affected manufacturer disagrees with EPA's determination to revoke a certificate of conformity, the manufacturer may request a public hearing. A request for public hearing must be

filed within 15 days.

D. 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 requirement to collect 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.

Similar to emission-related defect reports, operators of large marine 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 requirement to collect 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 don't 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 do not 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 requirement to collect 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

Small on-highway engine manufacturers may use optional procedures to demonstrate compliance with the general standards and specific emission requirements. These procedures apply to manufacturers with U.S. sales, including all imported engines, of fewer than 10,000 units. The alternate procedures reduce small manufacturers' burden associated with durability data requirements, testing, determination of deterioration factors and certification test data. Small volume manufacturers are also exempt from some reporting and recordkeeping requirements associated to the certification of evaporative families. Also a reduced SEA testing schedule is allowed for heavy-duty engine manufacturers with projected U.S. sales of 30,000 engines or less.

EPA can also approve a reduction in certification application fee upon request by the manufacturer. A fee waiver could be granted if: (1) the certificate is to be used to sell engines within the United States; and (2) the full fee exceeds 1% of the aggregate projected retail sales price of all vehicles covered by the certificate of conformity. Although this is a provision available to all manufacturers, it is beneficial to some small manufacturers.

Small volume manufacturers are excluded from marine CI PLT requirements.

Under the other programs included in this ICR, the information being requested is considered to be the minimum needed to effectively conduct and maintain integrity of the required certification and enforcement programs. Further measures to simplify reporting for small businesses do not appear prudent or necessary.

5(d). Collection Schedule

Collection frequency is largely determined by the manufacturer's marketing and product plans. Information must be submitted for each 'model year' that a manufacturer intends to build (or import) an engine model. A certificate of conformity must be obtained before the start of

production (or importation). Taking these two considerations into account, manufacturers normally submit information on an annual basis and submit their applications at their earliest convenience.

Running change and correction applications are submitted by manufacturers as the need occurs.

PLT reports are submitted quarterly, as manufacturers update their own production records.

SEA information is submitted on occasion, when EPA audits a manufacturer.

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 one test per engine family, at approximately \$5,000 per test.

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.

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

Labor Costs Estimates

(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 \$613,438.

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

The Heavy-Duty and Nonroad Engine Group (HDNREG) administers emission certification programs. The group has approximately 17 full-time employees. We project 480 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 24,960 hours or \$1,572,480 per year to oversee the requirements of the programs associated with this ICR.

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

Certification Estimates

EPA receives approximately 901 certification applications from 68 engine manufacturers each year under the programs included in this collection request (nonroad CI, on-highway heavy-duty and marine CI). These responses are distributed as follows:

EPA receives about 94 on-highway heavy-duty applications annually and 657 nonroad CI applications for a total of 751 applications. There are 68 companies in this sector, many of which manufacture both on-highway heavy-duty and nonroad CI engines. Of these applications, 457 (or 61%) are carry overs. Five on-highway engine manufacturers also submit applications for evaporative engine families. They submitted 28 applications in 2004: 18 carry overs and 10 "non-carry overs". EPA also received 107 running changes from 14 manufacturers.

In the marine CI sector, EPA received 100 applications from 13 manufacturers. This is a newly regulated sector. Emission requirements became effective on January 1, 2004. Therefore, EPA will start seeing carry-over applications in 2005 applications. However, based on experience gained in the marine SI sector, EPA expects the number of applications to increase to 150 per year during the next three years, a third of which will be carry-overs.

Ten of the 13 engine manufacturers currently participating in the marine CI sector are large companies which are already familiar with EPA regulations and policies. Burden hour estimates for the various programs in marine CI industry are larger than in other sectors to account for a familiarization with the new regulations. These regulations, however, are modeled after and thus very similar to other emission certification and compliance programs.

Averaging, Banking, and Trading

Participation in AB&T is voluntary for all sectors. Twelve on-highway heavy-duty and nonroad CI manufacturers are currently participating in AB&T with a total of 105 families. Only

five marine CI manufacturers have expressed interest in participating in AB&T so far. Again, the number of hours allocated for each task is higher for marine CI than for other sectors to allow manufacturers to become familiar with the new regulations.

Reports and other activities in this program are carried out from a company perspective as opposed to on a per-engine family basis. Therefore, manufacturers need to submit only one report quarterly and one final report in which they account for their company's activities under AB&T.

Production-line Testing

Only marine CI manufacturers are required to conduct PLT. Participation is mandatory. Category 3 engine families and small volume manufacturers are exempt. Since there are three small volume manufacturers participating in the marine CI certification program, only nine manufacturers are subject to marine CI PLT requirements. All of these manufacturers have inhouse testing laboratories.

Currently, there are no PLT requirements for nonroad CI engines.

Selective Enforcement Audits

EPA plans to conduct about 7 audits per year in the sectors included in this collection request. Since the majority of respondents own testing laboratories, it is more likely that the majority of the SEAs will entail in-house testing. However, EPA has accounted for audits to two manufacturers who contract out testing.

Marine CI

The following table shows the labor and other costs associated with meeting the existing and new requirements for each marine CI 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		Average A	nnual Burde	n and Cost I	Per Family			Total Hours and Costs	
Collection Activity	Technician @ \$38.34/hr	Manager @ \$71.24/hr	Clerical @ \$23.43/hr	Hours per Family	Labor Cost per Family	O&M Cost	No. of Families	Total Hours / Year	Total Cost / Year
Cert. Application*	36	2	6	44	\$1,663	\$0	100	4,400	\$246,530
Recordkeeping	2.2	0.2	2	4.4	\$145	\$0	100	440	\$14,546
Cert./Durability Testing	168			168	\$6,441	\$5,559	100	16,800	\$1,200,000
AB&T	40	6	80	126	\$3,835	\$0	5	630	\$19,177

PLT	100	5	10	115	\$4,425	\$575	100	11,500	\$500,000
Defect Reporting	40	6	80	126	\$3,835	\$0	10	1,260	\$38,354
Subtotal			Total O&	M Cost =	\$613,438		35,030	\$2,018,607	

*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 marine CI 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).

		Average per	Respondent			
Number of Respondents	Annualized Capital Costs Year		Total Hours Total Costs per Year per Year		Total Hours per Year	Total Costs per Year
13	\$0	\$613,438	35,030	\$2,018,607	2,695	\$155,277

Bottom-line burden and cost estimates for the on-highway and nonroad industries are taken from the previous ICR and are shown in the table below.

Program	Number of Respondents	Number of Activities	Total Hours Per Year	Total Labor Cost Per Year	Total Annual Capital Costs	Total Annual O&M Costs	Total Costs
Certification	55	12	95,934	\$5,724,222	0	\$5,259,976	\$10,984,198
Evap Cert	5	9	1,442	\$70,708	0	\$25,544	\$96,252
AB&T	12	5	4,188	\$264,933	0	\$1,320	\$266,253
SEA	10	9	3,203	\$163,866	0	\$17,955	\$181,821
Total	82	35	104,767	\$6,223,729	0	\$5,304,795	\$11,528,524

(ii). The Agency Tally

Our estimated burden is approximately 24,960 hours per year (or \$1,572,480) 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 marine CI 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

On-highway heavy-duty engine manufacturers and nonroad CI engine manufacturers spend, on average, 1,278 hours in emission certification and compliance activities.

As shown in the table above, the new and existing requirements for marine CI engines account for approximately 35,000 burden hours and almost \$2 million dollars in cost annually. These estimates include time to conduct testing, prepare applications, prepare and submit reports, and record and keep required information.

Burden Statement: The annual public reporting and recordkeeping burden for this collection of information is estimated to average 1,472 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 <u>www.regulations.gov</u>, or in person viewing at the Air Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 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.