

INFORMATION COLLECTION REQUEST

SUPPORTING STATEMENT

Information Requirements for New Marine Compression Ignition Engines at or Above 30 Liters
per Cylinder

February 2009

Assessment and Standards Division
Office of Transportation and Air Quality
Office of Air and Radiation
U.S. Environmental Protection Agency

Information Collection Request

1(a). Title

Information Requirements for New Marine Compression Ignition Engines at or Above 30 Liters per Cylinder

ICR Tracking Number: 2345.02

1(b). Short Characterization

The Clean Air 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 us the data they collected 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.

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). Use/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.
- 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

3. Nonduplication, Consultations, and other Collection Criteria

3(a) Nonduplication

Emissions from the engines 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 published a proposed rulemaking in the Federal Register on September 28, 2009 regarding emission standards for Category 3 marine diesel engines. This included an invitation to comment on the ICR. We received comments on a variety of issues related to information collection, sometimes indirectly. These comments and our responses are summarized in the following table.

Table 1
Comments Related to Information Collection

Comment	Response
<p>Several manufacturers opposed the requirement to particulate emission during certification testing of Category 3 engines. They generally argued that PM emissions from Category 3 engines cannot be accurately measured under 40 CFR part 1065 or that it would be prohibitively expensive. Commenters noted problems with measurement variability, fuel sulfur levels, and the exhaust flow rates/size of the exhaust stacks. Finally they questioned what benefits would be achieved with this requirement.</p>	<p>The PM measurement provisions in 40 CFR Part 1065 are more than adequate to accurately and repeatably measure PM from C3 marine engines. While there have problems with measurement variability in past testing, these issues can be avoided by following the latest part 1065 requirements. Part 1065 is very robust and more than adequate for measurement of emissions from C3 marine engines. Part 1065 is an improvement over existing test procedures with respect to accuracy and repeatability and its use would benefit C3 marine emission measurement. Measuring PM emissions will provide very useful information for characterizing current emission levels, which will in turn help us determine whether we (or Annex VI) should adopt a PM standard in the future.</p>

<p>Several commenters suggested that it was inappropriate to adopt standards for HC and CO emissions, largely because Annex VI does not include these standards.</p>	<p>We believe that the HC and CO standards being adopted are consistent with the direction in the Clean Air Act. Emission control technologies for C3 marine engines have been concentrated on reducing NOx and PM emissions. The HC and CO emission standards will prevent increases in emissions that might otherwise occur as a result of use of certain technologies for controlling NOx, such as those that significantly degrade combustion efficiency. We believe the levels of the emission standards involve some burden to measure and report emissions, but these standards are not expected to involve engineering or development resources to redesign engines for improving control of HC and CO emissions.</p>
<p>Several commenters opposed the requirement to perform an emission test for each Category 3 engine after it is installed in the vessel. Their objections were based primarily on cost considerations. Euromot stated that such testing would extend the sea trial by at least one day. EMA also argued that portable measurement systems have not been proven.</p>	<p>Sections 206 and 207 of the Clean Air Act direct EPA to establish test programs to ensure that engines and manufactured to conform to the applicable regulations in actual use. We have used a variety of programs to fulfill this obligation for other engine sectors. Under the existing regulations for Category 3 Tier 1 standards, this obligation was met by regulations specifying that we could require manufacturers to perform a selective enforcement audit. However, given the very small sales volumes for Category 3 engines, it is not appropriate for a long-term program to rely on any method based on testing only a subset of the engines produced. This is especially true for engines of this size, where a single engine can emit hundreds of times more pollution than smaller nonroad engines. The reliance on theoretical selective enforcement audits was only appropriate as a transition program implementing an initial tier of standards.</p> <p>Since Category 3 engines are generally not fully assembled in a testable configuration before being installed in the vessel, a program relying on onboard testing is the most workable approach. If the engine must be tested after installation in the vessel, we believe that testing during the sea trial will be the least burdensome approach.</p> <p>We disagree with EMA's assertion that portable measurement systems have not been proven. They have been used extensively for a wide variety of application. Moreover, EPA recently completed a project to demonstrate the use of such systems onboard a marine vessel.</p>
<p>EMA objected to the proposal to apply the defect reporting requirements of §1068.501 to Category 3 engines, and reducing the threshold for filing a defect report to two claims. They argued that the proposed defect reporting threshold is too low and that engine manufacturers have no meaningful opportunity to monitor, investigate and report on emissions-related defect claims in a timely manner.</p>	<p>The threshold specified in §1068.501(f)(2) would be 10 defects. This is not appropriate for Category 3 engines because of their extremely low sales volumes. Under that approach a manufacturer that produced five Category 3 engines in a year, would never be required to file a defect report, even if all of the engines were found to be defective. We also do not accept the claim that defect reports will inevitably be late, since the regulations only require the manufacturer to submit a report within 21 days once it becomes aware of the occurrence of the same defect in two or more engines within a family.</p>

They recommended that the Agency apply the reporting thresholds already adopted in §1068.501(f)(2).	
The World Shipping Council and Matson Navigation Co. stated that manufacturers should be able to submit a single application for both EIAPP and EPA certificates. They argued that this would be simpler for the regulated community as well as the EPA and Coast Guard.	While we do not think it would be practical to structure our certification program to enable a manufacturer to submit a single application for both EIAPP and EPA certificates, we plan to harmonize the two processes to the maximum extent possible. Coast Guard should not be affected by this certification process, since the same information will be provided in either case.
EMA and Euromot argued that EPA should not require a manufacturer to obtain the EIAPP certificate before an engine is introduced into U.S. commerce.	It is not clear how the requirement to have an EIAPP certificate would be enforced if we followed EMA's suggestion, since they did not suggest any other point at which the requirement would apply. Without a specific point by which the engine must have an EIAPP, engine and vessel manufacturers and operators of uncertified engines could always claim that they had merely not obtained the certificate yet.

3(c) Consultations

We have consulted with those commenting on the rule, either by phone or in person. These contacts are summarized in Table 2.

Table 2
Industry Contacts Regarding Information Collection

Date	Contact
10/30/2009	Roger Gault, EMA
11/12/2009	Rick Bishop, John Deere
11/18/2009	Gordon Gerber and Brady Winkleman, Caterpillar; Christine Ueno, MTU; Tim French, EMA
12/1/2009	Roger Gault, EMA
12/7/2009	Roger Gault, EMA
12/9/2009	Roger Gault, EMA

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 test results from production-line testing is necessary to allow adequate response to any problem that may arise.

3(e) General Guidelines

This ICR complies with the general guidelines, except for the requirement to retain records for a eight-year period, as described in 4(b)(ii) below.

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

We don't ask sensitive questions. This collection complies with The Privacy Act and OMB Circular A-108.

4. Respondents and Information Requested

4(a) Respondents/NAICS and SIC Codes

We received comments as described in section 3(b).

4(b) Respondents and Information Requested

(i) Data Items

We received comments as described in section 3(b).

(ii). Respondent Activities

We received comments as described in section 3(b).

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 vessel 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 vessel 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

We have a variety of provisions to ease the compliance burden on small businesses. Small-volume manufacturers can generally combine their products into a single engine family or use design-based certification to reduce testing efforts. Testing rates for the production-line testing program decrease or are waived for small-volume manufacturers.

5(d) Collection Schedule

The principal reporting requirements are associated with certification to the emission standards, which begin to apply at 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. Quarterly reporting of production-line testing results begins when certified engines go into production.

6. Estimating Burden and Cost of the Collection

We estimate burden and cost estimates separately for two groups of companies. First, 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. Second, companies that rebuild the regulated engines need to keep records of their maintenance practices, consistent with their normal business practice. 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 utilizes 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” (OMB No. 2060-0104).

The burden for certification testing is generally based on conducting two engine tests for each engine family, then using that test data for several years. 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 about \$20,000 for Category 3 marine diesel per certification cycle. As with the testing costs, we are presenting annual average costs.

The burden for production-line testing is based on an industry-wide calculation.

Rebuilders, including operators of marine vessels with Category 3 engines, must keep records as needed to show that rebuilt engines continue to meet emission standards, consistent with the manufacturer's original design. In addition, owners and operators of marine vessels with Category 3 engines must record information about their location when rebuilding engines or making other adjustments and send minimal annual notification to EPA to show that engine maintenance and adjustments have not caused engines to be noncompliant.

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

Labor rates on a per-hour basis, are taken from the Bureau of Labor Statistics web site at <http://stats.bls.gov/news.release/ecec.t05.htm> (accessed November 24, 2008). Technical labor is \$45.90/hr, managerial labor is \$72.35/hr, clerical labor is \$32.16/hr. Labor rates were multiplied by 1.5 to account for fringe benefits and other overhead expenses.

(ii) Estimating 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 above.

(iii) Capital/Start-up 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

Our Engine Programs Compliance Group administers emission certification programs. This group has approximately 17 full-time employees. We project 25 hours per week of staff time (at \$40 per hour, loaded) to manage engine compliance programs related to new emission standards. This comes to approximately 1,250 hours or \$50,000 per year to oversee the requirements of the final rule.

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

The following tables shows the labor and other costs associated with meeting the 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.

In addition, we estimate that 200 companies would be affected by new requirements to keep records related to rebuilding, maintaining, or adjusting engines (see Table 6); these companies must keep records of their business practices, but they don't need to design or certify engines or measure emissions. These estimates are based on the projected costs for each company to meet the requirements of the rule.

Table 5
Average Annual Respondent Burden and Cost—Category 3 Marine Diesel Engines

Information Collection Activity	Average annual burden and cost per family						# of Families	Capital & Startup cost	Total Hours and Costs	
	Mgr. @ \$72/hr	Tech. @ \$46/hr	Cler. @ \$32/hr	Hours per family	Labor cost per family	O&M Cost			Total Hours/yr	Total Cost/yr
Cert. application	3	80	7	90	\$4,114	\$0	12	\$0	1,080	\$49,370
Recordkeeping	0.2	2.2	2.6	5.0	\$199	\$0	12	\$0	60	\$2,389
Cert./durability testing	0	56	0	56	\$2,570	\$5,430	12	\$0	672	\$96,000
Defect reporting	1	2	2	5	\$228	\$0	12	\$0	60	\$2,742
Subtotal				Total O&M cost = \$65,155			—	\$0	1,812	\$147,759

Table 6
Annual Respondent Burden and Cost— Rebuilders

Information Collection Activity	Mgr. @ \$72/hr	Tech. @ \$46/hr	Cler. @ \$32/hr	Company hours/year	Labor cost per year	O&M Cost	Capital cost	Total Hours and Costs		
								# of companies	Total Hours/yr	Total Cost/yr
Recordkeeping		2	4	6	\$220	\$0	\$0	200	1,200	\$44,000

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 Table 7. These estimated costs include startup expenses (for example, the purchase of emission sampling equipment and new recordkeeping software).

Table 7
Summary of Bottom-line Burden Hours and Cost

Affected Entities	Number of Manufacturers	Industry Totals			
		Annualized Capital Costs	Total O&M Costs per Year	Total Hours per Year	Total Costs per Year
Category 3 marine diesel engine manufacturers	12	\$0	\$65,155	1,812	\$147,759
Engine rebuilders	200	\$0	\$0	1,200	\$44,000
Total	212	\$0	\$65,155	3,012	\$191,759

(ii) Agency Tally

Our estimated burden is approximately 1,250 hours or per year (or \$50,000) to oversee the requirements of the final rule, as described in Section 6(c).

6 (f) Burden Statement

As shown in Table 7, these new requirements account for about 3,000 additional burden hours and \$200,000 in additional cost annually. These estimates include time to conduct testing, prepare applications, prepare and submit reports, and record and keep required information.

Burden means the total time for, 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.

6 (g) Reason for Change in Burden

We have adopted emission standards for Category 3 marine diesel engines, which were previously unregulated. The previous collection was limited to Category 1 and Category 2 commercial marine diesel engines (up to 30 liters per cylinder), industrial spark-ignition engines, and recreational marine diesel engines.