CERTIFICATION
APPLICATION
REQUIREMENTS

Amendment to the
Application

(2) The intended physically adjustable range.

(3) The limits or stops used to establish adjustable ranges.

(4) Information showing why the limits, stops, or other means of inhibiting adjustment are effective in preventing settings outside your intended physically adjustable ranges.

(u) Provide the information to read, record, and interpret all the information broadcast by an engine's onboard co upon request, you will give us any hardware, software, or tools we would need to do this. If you broadcast a surr provide us what we need to convert these into torque units. You may reference any appropriate publicly released messages and parameters. Format your information consistent with publicly released standards.

(v) Confirm that your emission-related installation instructions specify how to ensure that sampling of exhaust em in equipment and placed in service. If this cannot be done by simply adding a 20-centimeter extension to the exh in a way that prevents diluting the exhaust sample with ambient air.

(w) State whether your certification is intended to include engines used in stationary applications. Also state whe If this is the case, describe how you will prevent use of these engines in applications for which they are not certif

(1) Constant-speed engines.

(2) Variable-speed engines.

(x) Unconditionally certify that all the engines in the engine family comply with the requirements of this part, othe Act.

(y) Include good-faith estimates of U.S.-directed production volumes. Include a justification for the estimated pro than actual production volumes in earlier years for similar models.

(z) Include other applicable information, such as information specified in this part or part 1068 of this chapter rela

(aa) Name an agent for service located in the United States. Service on this agent constitutes service on you or EPA or otherwise by the United States related to the requirements of this part.

Before we issue you a certificate of conformity, you may amend your application to include new or modified engi
section. After we have issued your certificate of conformity, you may send us an amended application requesting
configurations within the scope of the certificate, subject to the provisions of this section. You must amend your a
any information included in your application.

(a) You must amend your application before you take any of the following actions:

(1) Add an engine configuration to an engine family. In this case, the engine configuration added must be consis
family with respect to the criteria listed in §1048.230.

(2) Change an engine configuration already included in an engine family in a way that may affect emissions, or c
your application for certification. This includes production and design changes that may affect emissions any tim

(b) To amend your application for certification, send the Designated Compliance Officer the following information

(1) Describe in detail the addition or change in the engine model or configuration you intend to make.

(2) Include engineering evaluations or data showing that the amended engine family complies with all applicable
the original emission-data engine is still appropriate for showing that the amended family complies with all applic

(3) If the original emission-data engine for the engine family is not appropriate to show compliance for the new o
data showing that the new or modified engine configuration meets the requirements of this part.

(c) We may ask for more test data or engineering evaluations. You must give us these within 30 days after we re

(d) For engine families already covered by a certificate of conformity, we will determine whether the existing cert
modified engine. You may ask for a hearing if we deny your request (see §1048.820).

(e) For engine families already covered by a certificate of conformity, you may start producing the new or modifie
your amended application and before we make a decision under paragraph (d) of this section. However, if we de
applicable requirements, we will notify you to cease production of the engines and may require you to recall the
produce engines under this paragraph (e) is deemed to be consent to recall all engines that we determine do no
requirements and to remedy the nonconformity at no expense to the owner. If you do not provide information req
days after we request it, you must stop producing the new or modified engines.

40 CFR 1036.205, 1037.205, 1045.205, 1048.205, 1051.205, 1045.205, 1060.205
A. Information Items Required Under the Certification Program:

- Statement of compliance;
- Identification and description of the basic engine design including, but not limited t
- Explanation of how the emission control system operates;
- Fuel system type and components;
- Useful life period;
- Deterioration factors;
- Intended service class;
- Projected sales;
- Estimated production period;
- Sales area;
- Plant contact and location;
- Program information;
- Family Emission Limit (FEL);
- Nonroad engine equipment types;
- Detailed description and justification of each auxiliary emission control device (AEC
- Description of all adjustable parameters, their adjustable ranges and methods emp
- Detailed drawings and descriptions of the various emission related components;
- Description of the test equipment and fuel to be used;
- Description of the test procedures to be used to establish the durability data or the
- All test data obtained by the manufacturer on each test engine;
- Statement of the useful life;
- Statement of the alternative useful-life period and a brief synopsis of the justificati
- Maintenance information;
- Description of the provisions taken to prevent tampering with emission control con
- Proposed test fleet selection and the rationale for the test fleet selection;
- Special or alternate test procedures, if applicable;
- Period of operation necessary to accumulate service hours on test engines and stal
- Fee filing form; and
- If the EPA submits a written request for an explanation of good engineering judgme

40 CFR 1036.250, 1037.250. 1045.250, 1048.250,1051.250, 1054.250, 1060.250
Manufacturers must keep records for eight years except routine emission records. Manufacturer

General Records:

- Identification and description of all engines for which testing is required;
- Description of emission control systems; and
- Description of test procedures.

Individual Records:

Copies of all the applications submitted;
A brief history of all test engines and running changes;
A complete record of all emission tests performed;
The date of each mileage accumulation run and the mileage accumulated;

Record and description of all maintenance and other servicing performed;
Record and description of each test performed to diagnose engine or emission cont
A brief description of any significant events affecting the vehicle;
Actual U.S. sales volume; and

- Routine emission test data.

40 CFR 1036.225, 1037.225, 1045.225, 1048.225, 1051.225, 1054.225, 1060.225

Amending a Certificate

When a manufacturer needs to make changes to a certified engine, or to add an engine model to a

Notification of changes made to the application and/or request to amend the applic

- Description of change to be made;

Engineering evaluations or data showing that engines as modified or added will com
Determination of whether the original test fleet selection is still appropriate, and pr
Test data on engines changed or added, upon request; and
Supporting documentation, test data and engineering evaluations as appropriate to

40 CFR 1068.120

If an engine is installed that has been rebuilt, emissions-related components must be checked. The

- Hours of operation (or mileage, as appropriate) at the time of the rebuild;

Work completed on the engine or any emission-related control components, includ

- Any engine parameter adjustments; and
- Any emission-related codes or signals responded to and any retests.

For manufacturers or rebuilders of aftermarket engine parts for large SI engines and recreational v

40 CFR 1036.250, 1037.250. 1045.250, 1048.250,1051.250, 1054.250, 1060.250

Each manufacturer is also required to submit an annual production report identifying the numbe

40 CFR Subpart H for Parts 1036, 1067, 1045, 1051, 1054, and 1060
B. Averaging, Banking and Trading

Information Items Required Under the ABT Program:

- Intent to include the engine family in the ABT program;
- Declaration that participation in this program will not cause the applicable emission
- FEL;
- Projected applicable production volumes for the model year;
- Values required to calculate credits;
- Projected number of credits generated/used; and
- Designated use of generated credits and/or source of credits used.

The following ABT records are to be kept for eight years:

- EPA engine family;
- Engine identification number;
- Engine build date and model year;
- Power rating;

- Purchaser and destination;
- Assembly plant;
- FEL;
- Useful life;
- Projected and actual production for each model;
- Applicable production/sales volume -- actual quarterly and cumulative (this is requi
- Values required to calculate credits;
- Resulting type and number of credits generated/required;
- How and where credit surpluses are dispersed; and
- How and through what means credit deficits are met.

You should be prepared to add regulatory cites and/or links for all information required by this ICR.

40 CFR Subpart D for Parts 1036, 1037, 1045, 1048, 1051, 1054, and 1060 for Production Verification Testing
C. Production-Line Testing (PLT) Program

The EPA can require manufacturers to submit or retain additional information not specifically listed here. W

- Location and description of the test facilities where testing was conducted;
- Total production and sample size for each engine family;
- Applicable standards and/or FELs;
- Description of the process used to obtain engines on a random basis; and
- Description of the test engine.

For each test conducted, manufacturers must submit the following information:

- Description of the test engine, including engine family and configuration, year, mak
- Location(s) where service accumulation was conducted and description of accumul
- Test number, date, test procedure used, initial test results before and after roundin
- Complete description of any adjustment, modification, repair, preparation, mainten
- CumSum Analysis;[1]
- Any other information the Administrator may request;
- For each failed engine, a description of the remedy and test results for all retests;
- Date of the end of the engine manufacturer's model year production for each engin
- A signed statement (e.g., see §1054.201(e) for small SI engines) and endorsement b
- Submit, upon request: 1) projected production for each configuration within each e

Record and maintain the following information for one year after completion of testing:

- Description of all testing equipment used and each test cell that can be used to perf
- Date, time, and location of each test or audit;
- Number of service accumulation hours on the test engine at the start and end of th
- Names of all supervisory personnel involved in the conduct of the test or audit;
- Record and description of any adjustment, repair, preparation or modification perfo
- If applicable, the date the engine was shipped from the assembly plant, associated s
- Complete record of all PLT emission tests or audits performed (except tests perform
- Brief description of any significant events during testing not otherwise described, co

[1] CumSum is the cumulative summation used for the PLT calculation to determine the sequential analysis of

40 CFR Subpart E, Parts 1036, 1045, 1048, . Other regulatory sections do not require the manufacturer to con
D. In-use Testing Programs

While some of the details of the in-use program may vary from one type of engine to another, the information

- Engine family;
- Model;
- Engine serial number;
- Date of manufacture;
- Estimated hours of use;
- Results of all emission testing;
- Summary of all maintenance and/or adjustments performed;
- Summary of all modifications and/or repairs; and
- Determinations of compliance or noncompliance.

Selection Enforcement Audits are covered under 40 CFR Part 1068, Subpart E for Parts 1036, 1037, 1045, 1048
E. Selective Enforcement Audits (SEAs)

Upon the EPA's request, engine manufacturers must submit the following information regarding engine produ

- Projected U.S. sales data for each engine family and configuration;
- Number of engines, by configuration and assembly plant, scheduled for production
- Number of engines, by configuration and assembly plant, storage facility or port fac
- Number of engines, by configuration and assembly plant, produced during the desig

Within 30 calendar days of the end of each audit, nonroad SI manufacturers must submit a report

- Testing facilities' location and description.
- U.S.-directed production volume and number of tests for each engine family.
- Applicable standards or compliance levels against which the engines were tested.
- Description of the engine and the method used to select its emission-related components.
- For each test conducted, the following information:

  Test engine description;
  Location where service accumulation was conducted and a description of the
  Test information, raw results, which include emission figures for all measure
  A complete description of any modification, repair, preparation, maintenanc
  Reason(s) for removal of engines from the test sequence (as authorization b

-- Any other information as requested by EPA.

- Statement of compliance and endorsement.
- For large SI and recreational engines, a report on each failed engine.
- Request for re-testing of failed engines, if applicable.
- Signed statement by an authorized manufacturer representative (for large SI and recreational e

Records must be kept for one year after all ordered tests have been completed. Records may be k

General records: a description of all test equipment used, including the information submitted with the au
Individual records for each audit:

Date, time and location of each test;
Number of hours accumulated in each engine when testing began and ended;
Names of all supervisory personnel involved in the conduct of the audit;
Detailed records of all repairs performed prior/after EPA's authorization;
Any records related to an audit not in the written report;
Date engine(s) shipped, associated port/storage facility and date received, if applicable;
A complete record of all tests performed including worksheets and other documentation; and
Brief description of any significant event(s) that occurred during the audit.
Manufacturers must be able to provide projected or actual production for an engine family, by a
Description of the equipment in each test cell that can be used to perform SEA testing, where ap

The EPA can request manufacturers to submit additional SEA information or keep records not specifically listed

For all manufacturers, Defects and Recalls are provided under 40 CFR Part 1068, Subpart F
F. Defects and Recalls

Investigation Reports
Description of the defect and the engines that have it
Estimates of the number or percentage of affected engines/equipment per class or category
Estimate of the defect's impact on emissions
A plan for addressing the defect or an explanation of the reasons that the defect does not need to be addr
Defect Information Reports (DIRs)
The manufacturer's corporate name
A description of the defect
A description of the class or category of engines
Number of vehicle or engines estimated or known to have the defect and explanation of derivation.
The address of the plant(s) where they were produced
Evaluation of the emissions impact and any driveability problems it might cause
Available emissions data related to the defect
Indication of any anticipated manufacturer follow-up

Recalls and Voluntary Recalls
Information items requested in VERRs include:
A description of the class or category of engines being recalled
A description of the modifications or repairs made to correct the defects
A description of the method being used to identify and contact the owners
A description of any conditions for eligibility for repair and any reasons for the conditions
A description of the procedure to be followed by the owner to obtain repairs and where the repairs can be
If repairs are not being performed at dealers, a description of who will perform the repairs and where the c
Copies of the letters of notification to be sent to the vehicle owners
A description of the system for assuring an adequate supply of parts is available for the repairs and that the
Copies of all necessary instructions to be sent to the persons who are to perform the repairs
A description of the impact of the proposed changes on fuel consumption, drivability, and safety of the eng
A sample of any labels to be applied to the participant engines identifying the recall being performed

Recall Progress Reports
Recall campaign number
Date of owner notification and completion

Number of engines known or estimated to be affected by the defect
Number of or engines brought in and inspected as part of the campaign
Number of engines found to have the defect after inspection
Number of engines receiving repair
Number of engines determined to be unavailable due to exportation, theft, scrapping or other reasons
Number of engines determined to be ineligible because of improper maintenance or use
Copies of any service bulletins sent to dealers which relate to the defect that had not previously been repo
Copies of all communications transmitted to vehicle owners which relate to the defect to be corrected not
Revisions to any of the information previously submitted
Vehicle owner contact information upon request

Defects & Recalls Recordkeeping Requirements

A paper copy of written reports
The names and addresses of vehicle or engine owners who were notified
For every engine or piece of equipment state whether it was inspected, disqualified or repaired

:o, the engine family specifications (fuel, cooling medium, etc.);

:D), and how they affect emissions;
loyed to prevent tampering, etc.;

: exhaust emission deterioration factors;

on, if applicable;

nputer instructions;

ilize emission levels;

ent, manufacturers must provide a written description of the judgment in question within 15 working days, unl

rs must keep routine emission records for only one year.

rol system performance;

an already certified engine family, the following information must be submitted. Running changes are submitte

:ation;

nply with all applicable emission standards;
oposed new test fleet selections, if applicable;

demonstrate that all affected engines will still meet applicable emission standards.

e following records must be kept for at least two years after rebuilding an engine and must be accessible for the

ing a listing of parts and components used;

vehicles, information must be maintained that shows how their parts or service affect emissions. The EPA may t

er of engines produced by engine family, by gross power, by displacement, by fuel system, or by other catego

standard to be exceeded (i.e., result in a negative credit balance);

red quarterly for all families participating in trading);

ithin 45 days of the end of each quarter, manufacturers must report the following information (30 days for mai

e, build date, engine ID number, and number of hours of service accumulated on the engine prior to testing;
ation procedure and schedule;
g, final test results before and after rounding, and final deteriorated test results for all tests, etc.;
iance, and testing which was performed on the test engine, etc.;

ie family;
y an authorized representative of the manufacturer; and
engine family for which certification has been requested and/or approved; and 2) Number of engines, by config

form PLT;

e test(s);

ormed on test engines, including date, associated time, justification, name(s) of the authorizing personnel, and/
storage facility or port facility, and the date the engine was received at the testing facility;
ied directly by the EPA), including all individual worksheets and/or other documentation relating to each test, c
ommencing with the test engine selection process and including such extraordinary events as engine damage d

engine production from a product line. The CumSum equation is represented as Ci = Max [0 or Ci-1 + Xi−(STD +

ıduct testing but reserve the right for the EPA to conduct in-use testing. These sections are 40 CFR 1037, 1054

ı collected is very similar. Generally, SI engine manufacturers submit:

, 1051, and 1054.

ction. The EPA uses these data to determine which engines will be audited.

within the time period designated by the EPA;
ility, scheduled to be stored during the time period designated by the EPA; and
gnated period that are complete for introduction into commerce.

to the EPA based on the requirements in Section 1068.450. Manufacturers' reports should include the followin

e procedure;
d pollutants, for both valid and invalid test results;
e and/or testing performed on the engine not previously reported. This must include the results of any emissio
y the EPA), if applicable; and

engine manufacturers) as required under section 1068.450(c).

ept in any media, according to the manufacturer's procedures, provided that in every case all the information c

dit report described above.

assembly plant.
oplicable.

d in this section.

essed

obtained
defect will be remedied

ey are performed in a timely manner.

gines

rted
previously submitted

ess otherwise specified.

d using the same electronic format used to apply for a certificate of conformity. Data items requested:

e EPA's review. Records may be based on engine families rather than individual engines if that is a normal busir

:est engines and equipment to investigate potential defeat devices or may require the manufacturer to comple

ries as the Administrator may require. If the manufacturer requests a hearing on the Administrator's denial c

rine SI manufacturers):

uration and assembly plant, scheduled for production or actually produced.

or name(s) of supervisory personnel responsible for the conduct of the repair;

or exact copies; and
uring shipment.

0.25 × σ)]; where: Ci = The current CumSum statistic; Ci-1 = The previous CumSum statistic; Xi = The current en

ł, and 1060.

ıg information:

ɔn measurements, regardless of the procedure or type of equipment;

contained in the hard copy is maintained. The EPA may review manufacturer records at any time.

ness practice.

te this testing. Manufacturers may need to provide information regarding test programs, engineering evaluatic

or revocation of a certificate of conformity, the request shall be filed within 30 days of the Administrator's de

nission test result for an individual engine; STD = Emission standard (or family emission limit, if applicable).

ons, design specifications, calibrations, on-board computer algorithms, and design strategies. (see Section 1068

cision, shall be in writing, and shall set forth the manufacturer's objections to the Administrator's decision ar

.110)

ıd data to support the objection(s).

CERTIFICATION APPLICATION	Include all information underThe standard setting part (typically section 205 in the applicable regulation).
	Amend Cert App
	Prepare Maintenance instructions
	Prepare label under the regulations
TESTING	
Cert Testing	Cert testing should include both certification test to meet standard and durability test for deterioration factor testing, **generally at least half the useful life of the engine family**.
Production-Line Testing	Many, but not all, manufacturers must also test a minimum number of production engines per quarter throughout the model year, run calculations, and report production-line testing (PLT) reports on a quarterly and final report basis.
In_Use Testing	Some sectors within GECC must conduct in-use testing of engines in the field. These reports must be generated over a longer period of time (3-years, for example) to demonstrate continued compliance.
Selective Enforcement Audits	The EPA may require a manufacturer to conduct a selective enforcement audit of their production of an engine family. Generally, up to 30-engines (or vehicles) must be selected at random and sequestered until the completion of this test audit.

REPORTING AND RECORDKEEPING	
End-of-year	All manufactures must submit a report representing their U.S. directed production for the previous model year for all engine families.
ABT Report	As an alternative to traditional certification programs, some manufacturers may certify multiple engine families in an ABT (averaging, banking, and trading) group, which is averaged across all families and quantities, and certified to one standard. These reports must be verified at the end of the model year on the basis of actual sales.
PLT Reporting	Along with the certification testing above, manufacturers subject to PLT testing must provide the EPA quarterly reports of their PLT testing progress and a final report 45-days after the end of the model year to demonstrate compliance with the finished products. This should not be confused with the end-of-year report required for all U.S. directed production, whether a PLT family or not.
Final and/or end-of-year report	Not to be confused with the Production report, though one may serve as the other, all manufacturers must provide a final report on all sales activities after the end of the model year.
Maintenance of Records	Several sections of the regulations, certification testing, PLT testing, In-use testing, engine family information, require manufacturers to maintain these records for a designated number of years following the end of the model year. The EPA may request this informaiton at any time, whether or not you previously disclosed this information to the Agency.

Applicable Regulation
Additional information includes disclosing AECD and adjustable paramenters, explaining each in detail. Some manufacturers (Marine) must demonstrate that they also meet Not-to-exceed (NTE) standards within their certification testing. Other manufacturers (Large SI) must conduct an in-situ test as well as a certification test (sometimes also called an in-use test), where the engine is inserted into a piece of equipment and tested in application prior to certification and introduction into commerce (not to be confused in in-use compliance testing).
Generally, between 25% and 35% of manufacturers use data from previous certification years to certify for the current model year. This is a flexibility that reduces the amount of testing required annually for all manufacturers, provided no changes have occurred in the emissions characteristics of the engine family. However, the EPA may request new testing where information may seem old or out of date.

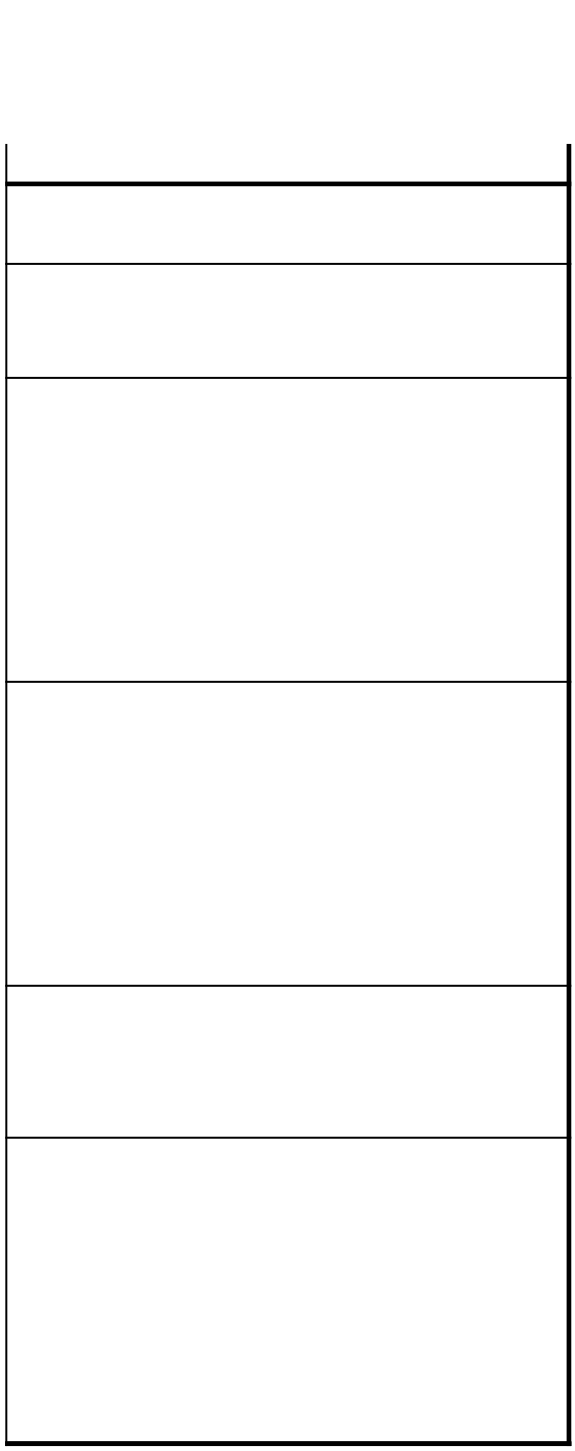

Table 4 - Annual Agency Burden and Cost (2025 estimates)							
	Hours and Labor Cost						
Employee	Level	Rate	Rate Increase by 1.6	Number of Employees	Full time hours	% of Time	Total hr/yr
Engineer	GS-13/6	63.75	$102.00	8	2080	100%	16640
Contract	GS-13/6	$56.75	$90.80	1	2080	0%	0
Attorney	GS-13/7	63.75	$102.00	1	2080	80%	1664
Managers (Sector Leads)	GS-14/1	65.82	$105.31	3	2080	100%	6240
SES-1	SES - 1	$72.19	$115.50	1	2080	25%	520
IT Support	GS-13/6	63.75	$102.00	2	2080	30%	1248
SEE Support		**12.72**	**20.352**	**4**	**2080**	**100%**	**8320**
Subtotal				**20**	**N/A**	**N/A**	**34,632**

O&M Costs		
Testing		
Other		
SEE Support		
Contract Support - Compliance		
Contract Support - Certification		
		Subtotal:
		TOTAL:

$0.03

Total Labor cost/yr
$13,578,240
$0
$169,728
$1,971,441
$60,062
$254,592
$677,315
$ 16,711,377

$200,000
$20,000
$177,066
$83,000
$200,000
$ 680,066

$ 17,391,443

Table 2

Information Collection Activity	Engineer/ 112.71	Manager/ 171.07	Legal (if applicable)/ 233.39	Technician/ 70.52
Review of regulations and guidance documents	18.0	9.0	4.0	4.0
Developing eng families groups	15.0	3.0	1.0	0.0
Gathering certification data	12.0	5.0	0.0	38.0
Testing/Gathering emission and/or evaporative data on test engines	30.0	14.0	0.0	22.0
Laboratory maintenance(1)	200.0	150.0	0.0	400.0
Cert, Durability & Evap Testing (annualized)(1)				
Small SI	10.0	4.0	1.0	20.0
Large SI	10.0	4.0	1.0	60.0
Rec Veh Test	50.0	4.0	0.0	80.0
Marine SI Test	10.0	4.0	1.0	20.0
Heavy Duty SI	10.0	4.0	1.0	20.0
Heavy Duty Si Evap Components	10.0	4.0	1.0	20.0
Components (per manufacturer)	10.0	4.0	1.0	20.0
Contracted Cert, Durability & Evap Testing (annualized)(1)				
Small SI				
Large SI				
Rec Veh Test				
Marine SI Test				
Heavy Duty SI				
Heavy Duty Si Evap Components				
Components (per manufacturer)				
Analyze data to determine compliance	6.0	4.0	1.0	0.0
Preparing and submitting new certification application	2.0	0.5	1.0	0.0
Preparing and submitting "carry over" applications	1.0	0.5	0.0	0.0
Paying Certification Fee	0.5	0.5	0.0	0.0
Certification Fee (3)				
Components	0.0	0.0	0.0	0.0
All Other SI Engines	0.0	0.0	0.0	0.0
Heavy Duty SI Engines				
Store, file and maintain records	3.0	1.0	1.0	0.0
Preparing and Submitting Annual/final Production Report	8.0	2.0	1.0	2.0
PLT Reporting and Record Keeping	101.0	8.0	4.0	80.0
ABT Reporting	40.0	10.0	5.0	0.0
In-Use Testing and Reporting	95.0	4.0	4.0	11.0

SEA Testing and Reporting	102.0	13.0	4.0	41.0
Defect Reporting (EDIR)	8.0	3.0	1.0	0.0
Recall Reporting (VERR)	8	3	1	10
Total per respondent	**405.5**	**217.5**	**15**	**706**
Total for the industry	**N/A**	**N/A**	**N/A**	**N/A**

(1) See section 6(b)ii for details.

(2) See section 6(d) for details.

Total Responses

White=Certification			
Gray=Reporting and Recordkeeping	Occupation	Mean Hourly Rate (BLS)	Rate Increased by Factor of 2.1
Manager/ 152.31	Mechanical Engineers	$53.67	$112.71
	Engineering Managers	$81.46	$171.07
Engineer/ 94.86	Lawyers	$111.14	$233.39
	Secretaries, Except Legal, Medical and Executive	$23.72	$49.81
Technician/ 66.80	Mechanical Engineering Technicians	$33.58	$70.52
Administrative/ 45.97			
Legal (if applicable)/ 180.08			

Contract expenditures	
Small SI	$5,666.67
Large SI	$11,836.67
Rec Veh Test	$7,333.33
Marine SI Test	$15,000.00
Heavy Duty SI	$15,000.00
Heavy Duty Si Components	$333.33
Components (per manufacturer)	$333.33

2 - Annual Respondent Burden and Cost for SI Engine Certification					
Hours and Cost per Application					
Administrative/ 49.81	Respondents hr/yr	Labor Cost/Response	Capital Startup Cost	O&M Cost, Annualized (1)	Applications/ Respondent (2)
1.0	36	$4,833.86	$0.00	$16.82	1.0
1.0	20	$2,487.06	$0.00	$0.00	1.0
3.0	58	$5,037.06	$0.00	$0.00	5.2
14.0	80	$8,025.06	$0.00	$0.00	5.0
0.0	750	$76,410.50	$0.00	$82,206.73	1.0
		$0.00			
2.0	37	$3,554.79	$0.00		3.4
2.0	77	$6,375.59			1.3
	134	$11,961.38	$0.00		0.8
2.0	37	$3,554.79	$0.00		1.5
2.0	37	$3,554.79	$0.00		1.3
2.0	37	$3,554.79	$0.00		2.1
2.0	37	$3,554.79	$0.00		4.4
				Projected Contract rates per engine/vehicle	
				$5,500.00	4.9
				$20,000.00	5.0
				$15,000.00	2.3
				$16,000.00	6.7
				$30,000.00	1.0
				$9,000.00	2.2
				$9,000.00	2.6
1.0	12	$1,649.74	$0.00	$0.00	2.9
1.0	5	$600.16	$0.00	$6.00	5.5
2.0	4	$297.87	$0.00	$3.00	4.6
0.5	3	$166.80	$0.00	$1.00	15.7
		$0.00			
0.0	0	$0.00	$0.00	$509.00	
0.0	0	$0.00	$0.00	$563.00	
				$66,477.00	
7.0	12	$1,097.26	$0.00	$6.00	1.0
2.0	15	$1,723.87	0	$168	1.0
9.0	202	$19,799.72		$3,078	0.0
10.0	65	$7,914.15		$168	1.0
82.0	196	$17,209.43		$3,078	1.6

12.0	172	$18,166.93		$3,078	1.0
2.0	14	$1,753.90		$168	1.0
2	24	$2,459.10		$168	4
44.5	**1,390.0**	**$ 138,440**	**0**	**varies**	**varies**
N/A	**N/A**	**$ 36,558,586**	**0**	**$ 6,810,491**	**varies**
		$ 136,716.28	**Total Certification Cost**	254,288.55	

Total Hours and Cost				
Number of Respondents	Total hr/yr	Total Cost/yr	Applications/ Efs (Responses)	Total O&M
393	73,980	1,906,318	2055	$6,610.79
393	41,100	977,415	2055	$0.00
393	119,190	10,351,158	2055	$0.00
393	11,440	15,644,556	143	$0.00
52	39,000	8,222,407	52	$4,261,435.95
	0			
13	1,591	389,356	43	
4	385	131,878	5	
13	1,474	296,575	11	See Cell J9
2	111	58,664	3	
2	74		2	
1	74		2	
17	2,849	966,719	77	
	0			
16	0		80	$7,156,151.74
6	0		30	$3,600,000.00
17	0		38	$9,531,954.58
3	0		20	$960,000.00
2	0		2	$121,249.66
1	0		3	$28,301.99
22	0		57	$11,354,979.06
52	24,660	248,006	2055	$0.00
67	1,679	226,096	373	$150,705.42
363	5,887	506,055	1682	$1,829,985.75
393	6,165	1,028,291	2055	$807,615.00
	0			$0.00
	0		268	$136,412.00
	0		1813	$1,020,719.00
	0		26	$1,728,402.00
393	0	433,581		$0.00
393	30,825	743,505	2055	$345,240.00
83	167,458	0	829	$2,551,625.86
37	7,410	299,040	114	$19,152.00
7	1,372	222,958	7	$21,545.69

2	344	42,490	2	$6,155.91
19	756	36,516	54	$9,072.00
5	384	52,542	16	$2,688.00
N/A	**1,251.65**	**N/A**		$63,774.94
52	**538,207.5**	**$ 42,784,125**	18081.6264	**$45,650,002.40**
	329,658.5	**$ 41,387,074.61**	**46.0**	$42,694,522.94
	208,549	*$ 99,497.97*		$2,955,479.47
			5132.00	

Total Labor Cost/yr	Total Cost		
$9,933,582.30			
$5,110,908.30			
$10,351,158.30			
$1,147,583.58		1.538832	
$3,973,346.00		0.65	1386.45
$0.00		279.5	
$152,855.97			
$31,877.95			
$131,575.18			
$10,664.37			
$7,109.58			
$7,109.58			
$273,718.83			
$0.00			
$0.00			
$0.00			
$0.00			
$0.00			
$0.00			
$0.00			
$0.00			
$3,390,215.70			
$223,857.82			
$501,008.93			
$342,763.73			
$0.00			
$0.00			
$0.00			
$0.00			
$0.00			
$3,542,552.85			
$16,413,967.88			
$902,213.10			
$120,466.01			

$36,333.86	
$94,710.60	
$39,345.60	
$0.00	
$56,738,926.01	**$102,388,928.41**
$35,589,336.11	

Computation of all NRSI
Nonroad Spark Ignition Engines
Recreational Vehicles
Heavy Duty Engines and Vehicles
Total

GECC-related Defects/Recalls for 2019/2020

Industry
Small SI engines
Marine SI engines
Large SI engines
Evap Components/Equipment
Recreational Vehicles
Recreational - ATV
Recreational - Offroad Motorcycle
Recreational - Snowmobile
Heavy-duty SI engines
Heavy-duty Evap
Total for all GECB Industries
Total for Nonroad SI

Total New NRSI Cert Testing (Mfr)

In-House or Contractor
Err:522
Err:522

Err:522
Err:522

Err:522

In-House or Contractor Cert
283
64
75
43
8
5
114
Manf.
29
10
30
3
4
2

manufacturers and certificates issued (three-year period and average)	
Small SI: Small nonroad gasoline powered equipment, such as lawnmowers, string trimmers, chain saws, small compressors, pumps, utility vehicles < 25 mph, snow blowers, rammers, floor cleaners	Manufacturers
	Certificates
Marine SI: e.g. Gasoline boats and personal watercraft	Manufacturers
	Certificates
Large SI: Large nonroad gasoline powered equipment, such as forklifts, compressors, generators, and stationary equipment	Manufacturers
	Certificates
Evaporative components (manufacturers certifying their own equipment under the standard setting part)	Manufacturers
	Certificates
Recreational Vehicles (All-terrain vehicles / utility vehicles/Snowmobiles/Off-Highway mtorcycles)	Manufacturers
	Certificates
	Manufacturers
	Certificates
	Evap Manufacturers
	Evap Certificates
	Manufacturers
	Certificates

Defect Reports	
2021	2022
47	29
5	8
5	5
3	0
5	9
0	4
0	1
65	56
60	14

178

Contractor	
Err:522	Small SI
Err:522	Large SI

	Rec Veh Test
Err:522	Marine SI Test
4	Heavy Duty SI
	Heavy Duty Si Evap Components
Err:522	(per manufacturer)

Err:522

Contractor Cert	
159	Small SI
36	Large SI
42	Rec Veh Test
24	Marine SI Test
5	Heavy Duty SI
3	Heavy Duty Si Evap Components
64	(per manufacturer)
Contractor Manf	
16	Small SI
6	Large SI
17	Rec Veh Test
3	Marine SI Test
2	Heavy Duty SI
1	Heavy Duty Si Evap Components

22	(per manufacturer)

2021	2022	2023	Average	Carryover families	Total Certificaiton related responses Received
101	101	94	Err:522		
1006	1011	1016	Err:522	882	5842
20	18	18	Err:522		
150	150	154	Err:522	140	878
37	36	36	Err:522		
233	240	225	Err:522	199	1181
143	157	142	Err:522		
279	257	269	Err:522	127	4398
65	74	78	72		
316	338	360	338	286	2558
10	10	10	10		
26	29	22	26	22	251
8	10	11	10		
29	28	26	28	26	110
			393		
			2055	**1682**	**15218**

	Recall Reports			Average Annual Defect	Average Annual Recall
2023	2021	2022	2023		
16	2	1	0	31	1
4	0	0	0	6	0
2	0	0	0	4	0
0	1	1	1	1	1
9	4	6	1	8	4
					0
					0
					0
10	0	1	3	5	1
1	0	0	0	1	0
42	7	9			5
	6	4			3
				54	16

Average Defect and Recall	
37	5

Own	
Err:522	42
Err:522	4

0	30
Err:522	3
-4	4
0	2
Err:522	39

LSI

Err:522	Err:522	
Own Cert		
125	0	29
28	0	4
33	0	30
19	0	3
4	0	4
2	0	2
50	0	40
Own Manf.		
13		
4		
13		
2		
2		
1		

HDSI

17		

Rec Vehicle

ATVA-Meet EPA & ARB ATV Definition

ATVB & UTV - EPA only

Utility Vehicle - EPA Only

ATVB-Meeting EPA ATV Definition

All Terrain Vehicle

Off-Road Motorcycle

ATVB & ENGINE - EPA only

Off-Road Utility Vehicle

Engine - EPA Only

ATVA-Meet EPA & ARB ATV Definition

ATVB & UTV - EPA only

Utility Vehicle - EPA Only

ATVB-Meeting EPA ATV Definition

All Terrain Vehicle

Off-Road Motorcycle

ATVB & ENGINE - EPA only

Off-Road Utility Vehicle

Engine - EPA Only

PLT	ABT	NRSI and Evaporative Certificates (Part 1060 only cer	
52	18	Non-handheld	182
675 **(2541)**	54	Handheld	63
9	8		
66 **(270)**	15	Vessel Cert	2
16	0	Marine SI diurnal	20
42 **(226)**	0	Large SI	0
0	0		
0	0		
6	5		
46 (148)	11		
0	6		
0	34		
0	0		
0	0		
83	37	Total	
829	114		

Small SI	**New**		
MY (New)	# of Mfr's	# of EF's	
2010	1	1	
2011	71	300	
2012	83	296	
2013	52	187	
2014	60	181	
2015	54	169	
2016	55	186	
2017	53	150	
2018	53	207	
2019	**55**	**350**	**60**
2020	**64**	**459**	**405**
2021	38	108	
Marine MY (New)	# of Mfr's	# of EF's	
2011	8	13	
2012	14	26	
2013	13	44	
2014	16	22	
2015	16	35	
2016	7	16	

2017	13	27	
2018	8	26	
2019	**11**	**27**	**12**
2020	**13**	**59**	**43**
2021	8	10	
MY	# of Mfr's	# of EF's	
2011	7	10	
2012	9	28	
2013	12	26	
2014	15	41	
2015	17	29	
2016	16	31	
2017	15	36	
2018	8	23	
2019	**14**	**21**	**14**
2020	**13**	**31**	**26**
2021	11	16	
MY	# of Mfr's	# of EF's	
2015	1	2	
2016	10	22	
2017	14	25	

2018	7	11	
2019	**5**	**9**	**7**
2020	**8**	**11**	**10**
2021	3	4	

2019

Mfr	EF		**Total Mfr's**
	17	24	**86**
	11	6	
	12	8	
	18	12	
	13	14	
	14	12	
	1	0	
	0	0	
	0	0	

2020

Mfr	EF	
	8	14
	10	3
	8	5
	22	18

11	11
15	9
0	0
0	0
0	0

tifications)	In-use		
349			
77		129	42.57
	7		86
3	11	0.073	1.3841059602649
32			
0		52	0.153846153846154
		0.1459	5.25321888412017
		0.1538	1.53846153846154
		141	0.526119402985075
112			

Carryover			
MY (Carryover)	# of Mfr's	# of EF's	
	48	**726**	**42**
	36	**534**	**630**
MY (Carryover)	# of Mfr's	# of EF's	

	8	**136**	**8**
	8	**104**	**120**
Carryover	# Mfr	# EF	
	21	**199**	**22**
	23	**213**	**206**
Carryover	# of Mfr's	# of EF's	

	8	**20**	**5**
	2	**11**	**16**

Carry Over

EF's	Mfr	EF		**Carryover Total**
76	1		31	**14**
	1		16	**178**
	-4		8	
	8		62	
	6		31	
	3		30	
	-1		0	
	0		0	
	0		0	
			0	
	9		45	
	1		20	
	0		13	
	6		58	

13	31
4	35
0	0
0	0
0	0

11.0769230769231

77.339552238806

2019

Mfr	EF		
	18	55	100
	12	22	
	8	16	
	26	74	
	19	45	
	17	42	
	0	0	
	0	0	
	0	0	

2020

Mfr	EF		
	17	59	107
	11	23	
	8	18	
	28	76	

24	42
19	44
0	0
0	0
0	0

254

262

Fees for Certification		
Nonroad Spark Ignition Engines	Small SI: Small nonroad gasoline powered equipment, such as lawnmowers, string trimmers, chain saws, small compressors, pumps, utility vehicles < 25 mph, snow blowers, rammers, floor cleaners	$563
	Marine SI: e.g. Gasoline boats and personal watercraft	$563
	Large SI: Large nonroad gasoline powered equipment, such as forklifts, compressors, generators, and stationary equipment	$563
	Evaporative components (manufacturers certifying their own equipment under the standard setting part)	$509
Recreational Vehicles	Recreational Vehicles (All-terrain vehicles / utility vehicles/Snowmobiles/Off-Highway mtorcycles)	$563
Heavy Duty Engines and Vehicles		Engine
		Evap

$66,477
$563