

# ATV/OFMC Regulations

ATV/OFMC Workshop

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# Off-Highway Motorcycle (OFMC) Standards

Table 1 of §1051.105 – Exhaust Emission Standards for Off-Highway Motorcycles (g/km)

Model Year	Phase-in (percent)	Emission Standards		Maximum allowable family emission limits	
		HC+NO <sub>x</sub>	CO	HC+NO <sub>x</sub>	CO
2006	50	2.0	25	20	50
2007 and later	100	2.0	25	20	50

- Averaging, banking and trading for HC+NO<sub>x</sub> and CO
- Competition exemption (§1051.620)
- Minimum useful life of 10,000 km or 5years

# Alternative OFMC Standards

Alternative Exhaust Emission Standards for Off-Highway Motorcycles (g/km)

Model Year	Phase-in (percent)	Emission Standards	
		HC+NO <sub>x</sub>	CO
2007	100	4.0	35

- No competition exemption
- At least 10% of models must have four of the following:
  - Absence of headlight or other lights
  - Absence of spark arrester
  - Absence of a manufacturer warranty
  - Suspension travel greater than 10 inches
  - Engine displacement greater than 50 cc
  - Absence of a functional seat
- Averaging and banking for HC+NO<sub>x</sub> only
  - No trading

# OFMC Less Than 70 cc Emission Standards

- OFMC with engines less than 70 cc have option to certify to engine-based exhaust standards (§1051.615)

Exhaust Emission Standards for Off-Highway Motorcycles Less Than 70 cc (g/kW-hr)

Model Year	Phase-in (percent)	Emission Standards		Maximum allowable family emission limits	
		HC+NO <sub>x</sub>	CO	HC+NO <sub>x</sub>	CO
2006	50	16.1	519	32.2	--
2007 and later	100	16.1	519	32.2	--

- Averaging, banking and trading for HC+NO<sub>x</sub> only
- Minimum useful life of 5,000 km or 5 years
- Engine-based test cycle
  - 6 Mode Duty Cycle for Recreational Vehicles (SAE J1088)

# OFMC Test Procedures

- Test cycle:
  - Motorcycles under 170 cc
    - Use Class I highway motorcycle cycle (Appendix I to Part 86 paragraph (c))
  - Motorcycles over 170 cc
    - Use Class II & III highway motorcycle cycle (Appendix I to Part 86 paragraph (b))
- Can test motorcycles with either knobby tire or road tire
- Same test procedures as for highway motorcycles

# ATV Standards

Table 1 of §1051.107 – Exhaust Emission Standards for ATVs (g/km)

Model Year	Phase-in (percent)	Emission Standards		Maximum allowable family emission limits	
		HC+NO <sub>x</sub>	CO	HC+NO <sub>x</sub>	CO
2006	50	1.5	35	20	--
2007 and later	100	1.5	35	20	--

- Averaging, banking and trading allowed for HC+NO<sub>x</sub> only
- Competition exemption (§1051.620)
- Minimum useful life of 10,000 km, 500 hours, or 5 years

# ATVs Less Than 100 cc Emission Standards

- ATVs with engines less than 100 cc have option to certify to engine-based exhaust standards (§1051.615)

Exhaust Emission Standards for ATVs Less Than 100 cc (g/kW-hr)

Model Year	Phase-in (percent)	Emission Standards		Maximum allowable family emission limits	
		HC+NO <sub>x</sub>	CO	HC+NO <sub>x</sub>	CO
2006	50	25.0	500	40.0	--
2007 and later	100	25.0	500	40.0	--

- Averaging, banking and trading for HC+NO<sub>x</sub> only
- Minimum useful life of 5,000 km, 250 hours or 5 years
- Engine-based test cycle
  - 6 Mode Duty Cycle for Recreational Vehicles (SAE J1088)

# Optional Exhaust Emission Standards for ATVs

Table 1 of §1051.145 – Optional Exhaust Emission Standards for ATVs (g/kW-hr)

Engine Displacement	Model Year	Phase-in (percent)	Emissions Standards		Maximum allowable family emission limits
			HC+NO <sub>x</sub>	CO	HC+NO <sub>x</sub>
<225 cc	2006	50	16.1	400	32.2
	2007 and 2008	100	16.1	400	32.2
≥225 cc	2006	50	13.4	400	32.2
	2007 and 2008	100	13.4	400	32.2

- Can only be used for model years before 2009
- Engine-based test cycle
  - 6 Mode Duty Cycle for Recreational Vehicles (SAE J1088)
- Emission credits can not be exchanged between optional standards and §1051.107 standards or between engines above and below 225 cc



# ATV Test Procedures

- Use Class I highway motorcycle cycle (Appendix I to Part 86 paragraph (c))
- For optional ATV standards, use the engine-based 6 Mode Duty Cycle for Recreational Vehicles (SAE J1088)

Mode No.	Engine Speed (% of max test speed)	Torque (% of max test torque at test speed)	Minimum time in mode (minutes)	Weighting factors
1	85	100	5.0	0.09
2	85	75	5.0	0.20
3	85	50	5.0	0.29
4	85	25	5.0	0.30
5	85	10	5.0	0.07
6	Idle	0	5.0	0.05

# Offroad Utility Vehicles

- Offroad utility vehicles are subject to the same requirements as ATVs
- Offroad utility vehicles are defined as having:
  - engines with displacement less than 1,000 cc
  - max brake horsepower less than or equal to 30 kW (40 hp) and
  - max vehicle speed of 25 mph or higher

# Permeation Standards

- Permeation refers to gasoline that passes through the walls of non-metal fuel tanks and hoses. This permeation occurs both when the tank/hose material is exposed to liquid fuel or to fuel vapor.
- Hose
  - Standard: 15 g/m<sup>2</sup>/day
  - Temperature: 23°C
  - Fuel: E10 fuel
  - Testing: SAE J30 test equipment/procedures

# Permeation Standards

- Fuel Tanks
  - Standard: 1.5 g/m<sup>2</sup>/day
  - Temperature: 28°C
  - Fuel: E10 fuel
  - Testing: preconditioning
    - fuel soak on E10
    - slosh testing
    - UV exposure
    - pressure/vacuum testing
    - weight loss (or equivalent) test method

# Competition Exemption

- General
  - used solely for competition
  - exemptions good for one year
  - we will not renew exemption if we determine vehicles will not be used solely for competition
  - permanently label vehicle to clearly indicate used solely for competition
- OHMC
  - marketed and labeled as only for competitive use and that meet at least four of the following criteria
    - Absence of headlight or other lights
    - Absence of spark arrester
    - Absence of a manufacturer warranty
    - Suspension travel greater than 10 inches
    - Engine displacement greater than 50 cc
    - Absence of a functional seat

# Competition Exemption

- ATVs
  - The vehicle or engine may not be displayed in any public dealership
  - Sale of the vehicle must be limited to professional racers or other qualified racers
  - The vehicle must have performance characteristics that are substantially superior to noncompetitive models
- Vehicles not meeting the OHMC or ATV criteria will be exempted only in cases where manufacturers have clear and convincing evidence that the vehicles will be sold solely for competition

# Hang Tag Labels

- Label every vehicle with a removable hang tag showing its emission characteristics relative to other models
- Tags will include at a minimum the following information:
  - manufacturer's name, vehicle model name, engine description, the NER, and a brief explanation of the scale
- Each tag will include a normalized emission rate (NER)
- Example of OFMC NER equation:
  - $NER = 2.500 \times (HC+NO_x)$  for OFMCs with emissions less than or equal to 2.0 g/km
  - $NER = 5.000 \times (HC+NO_x)$  for OFMCs with emissions greater than 2.0 g/km

# Flexibilities for Small Volume Manufacturers

- Small manufacturer defined as having less than 500 employees and selling less than 5,000 units (combined OFMC & ATV)
- Flexibilities
  - Additional lead time
  - Design-based certification
  - Broaden engine families
  - Production-line testing waiver
  - Use of assigned deterioration factors for certification
  - Using emission standards and certification from other EPA programs
  - Averaging, banking, and trading
  - Hardship provisions



DRAFT

## Major Steps of Certification and Compliance

for

2006 and Later Model Years All-terrain Vehicles and Off-highway Motorcycles

July 21, 2004

**This step-by-step guidance is intended to assist you in the certification process and does not replace any regulations.** Failure to comply with the applicable regulations can result in substantial penalties and EPA may revoke or suspend your certificates. It is your responsibility to know and comply with the regulations. This guidance document summarizes the major steps for EPA's certification and compliance programs for all-terrain vehicles (ATV) and off-highway motorcycles (OFMC), provides policy guidance where necessary and directs you to specific requirements regarding these major steps.

*For vehicles intended for sale in California, manufacturers must obtain separate certification from CARB. For these vehicles, the term "EPA/CARB" as used throughout this guidance document shall mean that any applicable certification requirements and agency action must be separately (and concurrently) addressed to and ruled on by EPA and CARB.*

*This document contains harmonized guidance for EPA and California Air Resources Board (CARB) certification. The EPA regulations that are cited throughout this document also have corresponding California regulations, unless otherwise noted.*

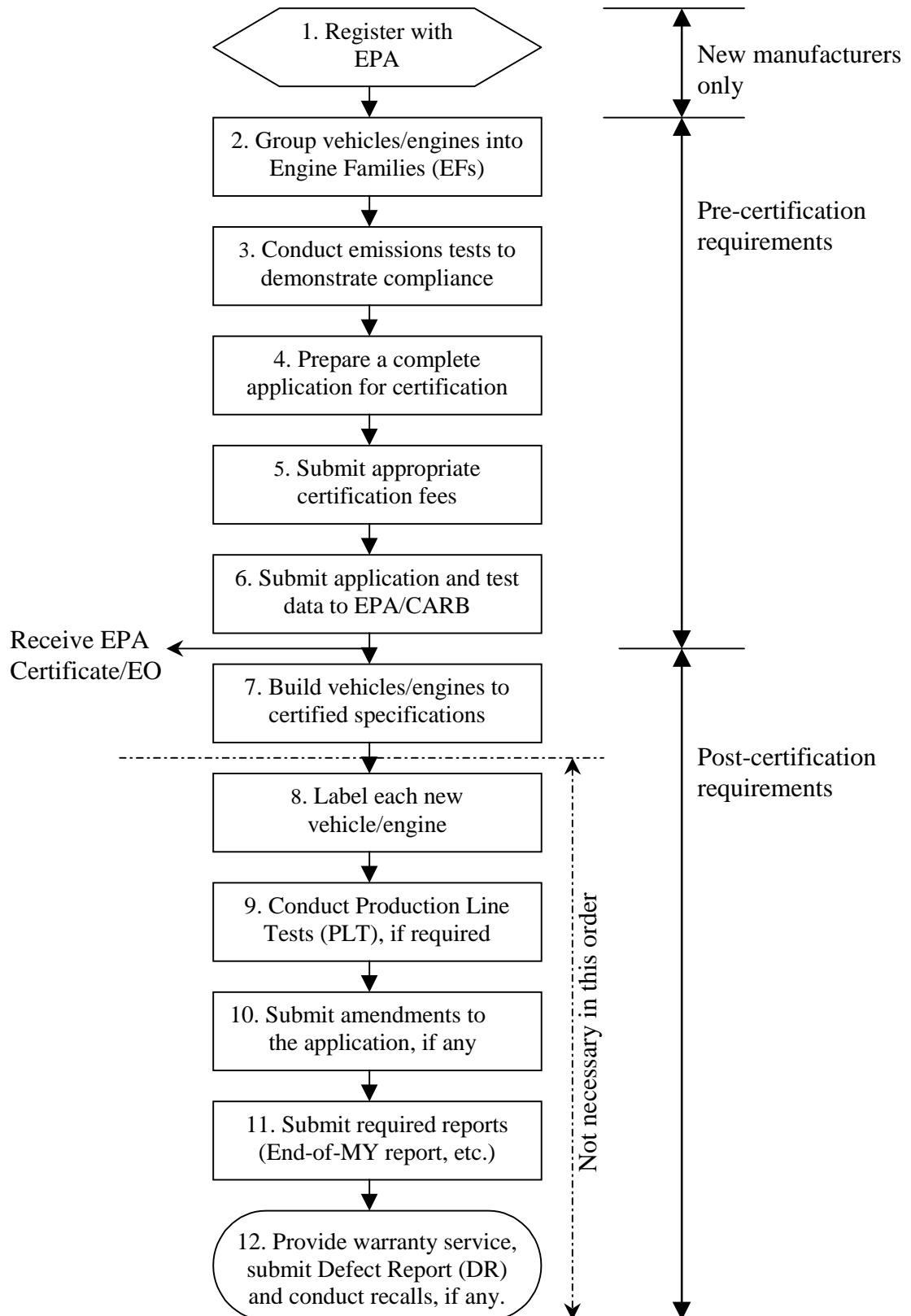
Please note, the citations specified in this draft document reflect the regulations as published on November 8, 2002 and are subject to change through future regulatory amendments.

Certification and Compliance Division  
Office of Transportation and Air Quality  
U.S. EPA

California Air Resources Board

## Major Steps of Certification and Compliance

for 2006 and Later Model Year ATVs and Off-Highway Motorcycles



## Step 1. Register with EPA:

A manufacturer\* who is applying for the first time for U.S. EPA emissions certification should start by registering with EPA. The registration process includes:

- 1) Send a **Manufacturer Registration Letter** to:

[Motorcycle/ATV Certification Team](#)  
Certification and Compliance Division  
Office of Transportation and Air Quality  
U.S. Environmental Protection Agency  
2000 Traverwood Drive  
Ann Arbor, Michigan 48105  
(Email: MC-cert@epa.gov)

*For CARB certification, send a letter to:*  
*[Mr. Allen Lyons, Chief](#)*  
*[Mobile Source Operations Division](#)*  
*[Air Resources Board](#)*  
*[9480 Telstar Ave. Suite 4](#)*  
*[El Monte, CA 91734-2301](#)*

In this letter, provide general information about your company, your certification plans and a brief description of the new vehicles or engines that you intend to introduce into commerce in the United States. The letter must also contain answers to the List of Questions designed for a new manufacturer (see Attachment 1). If the information you provide is satisfactory, the Agency will inform you of your manufacturer status (e.g. small-volume manufacturer, independent commercial importer, agent of original equipment manufacturer. etc.). Once you obtain your status, proceed to 2) below.

- 2) Access the EPA's web site: [www.epa.gov/otaq/cfeis.htm](http://www.epa.gov/otaq/cfeis.htm). Under "New Manufacturer Registration" section, download the electronic [Manufacturer Code Entry Form](#), complete it and email it to us at [omscfeis@epa.gov](mailto:omscfeis@epa.gov). EPA will send an email or a fax back to you with your company's unique identification code. **You only need to register once.** After registration, if any change occurs, such as company name or mail address, you should submit updated information to [omscfeis@epa.gov](mailto:omscfeis@epa.gov) to allow EPA to keep accurate records about your company.

\* **Manufacturer**, in general "includes any person who manufactures a vehicle or engine for sale in the United States or otherwise introduces a new vehicle or engine into commerce in the United States. This includes importers that import vehicles or engines for resale" (Ref: 40 CFR §1051.801)

## Step 2. Group Vehicles/Engines into Engine Families (EF)

An Engine Family (EF) is the basic unit used by EPA to issue a certificate for recreational vehicles or engines. By definition, an EF means a group of vehicles/engines with similar emission characteristics (40 CFR §1051.801). Emission certification must be obtained every model year, regardless of whether your engine families change or not. **You are required to**

**submit a new application and pay certification fees for each EF that you intend to certify every model year.**

**How to group vehicles or engines into Engine Families (EF)**

In general, you should divide your product line into families of vehicles/engines that are expected to have similar exhaust and evaporative emission characteristics throughout their useful life. You may group vehicles/engines into the same engine family if they are the **same in all** of the following aspects ([40 CFR §1051.230](#)):

- (1) The combustion cycle.
- (2) The cooling system (water-cooled vs. air-cooled).
- (3) Configuration of the fuel system (for example, port fuel injection vs. carbureted).
- (4) Method of air aspiration.
- (5) The number, location, volume, and composition of catalytic converters.
- (6) Type of fuel.
- (7) The number, arrangement, and approximate bore diameter of cylinders.
- (8) Evaporative emission controls

Note: Crankcase evaporative emissions may not be discharged directly into the ambient atmosphere from any vehicle. (Ref: [40 CFR §1051.115\(a\)](#))

**How to name an Engine Family?**

To facilitate the certification process, EPA requests that all manufacturers use the following standardized naming convention for their engine families. This consists of twelve (12) characters which identify an individual EF. The following table explains in detail the naming convention for engine families of OFMCs and ATVs:

<b>Number of Characters</b>	<b>Column</b>	<b>Description</b>
1	1	<b>Model Year</b> (e.g. use “6” if you intend to obtain a 2006 MY certificate)
3	2-4	<b>Three letter manufacturer identification code</b> assigned by EPA at the time you register your company with EPA
1	5	<b>Vehicle Type</b> (use the letter “X” to represent OFMC and ATVs, including utility vehicles that are covered by applicable ATV regulations).
4	6-9	<b>Displacement</b> in cubic inches (e.g., 0350, 0097) or liters (e.g., 05.7-the decimal point counts as a digit and the leading zero is a space). For dual or variable displacement families, enter the maximum displacement. For large displacement engines, the displacement may be entered as XX .X format (e.g., 12.1). Small engines may be entered as a .XXX format (e.g., .072, 0.07, 00.7). In all cases the

		displacement will be read in liters if a decimal point is entered and it will be read in cubic inches if there is no decimal point.
3	10-12	<b>Sequence characters specified by a manufacturer.</b> Enter any combination of valid characters to provide a unique identification for the engine family name. It is recommended that numbers and letters be selected that minimize possible confusion.*
Example		<b>(1) 5XYCX0125AE7:</b> Where: "5"- for 2005 MY engine family, "XYC"-manufacturer, "X"-ATV or OFMC, "0125"- displacement 125 cubic inches, "AE7"- manufacturer specified code.  <b>(2) 6XYCX.072A6B:</b> Where: "6"-2006 MY engine family, "XYC"-manufacturer, "X"-ATV or OFMC, ".072"-.072 liter (the displacement is in liters since a decimal point is entered), "A6B"- manufacturer specified code.

\* At a minimum, the sequence characters, in combination with the other characters in the family name, must provide a unique identifier for the family. It is recommended, but not required, that the sequence characters themselves be unique for all families for a manufacturer and model year. These sequence characters may be used to codify information to meet California's requirements, but they will be treated as simple sequence characters by EPA's computer software.

#### Reference:

- (1) [VPCD-96-12](#) - EPA Standardized Motorcycle Engine Family and Evaporative Family Names for the 1998 and later Model Years
- (2) [CCD-04-01](#) - Update to EPA Standardized Test Group/Engine Family Name.
- (3) 40 CFR §[1051.230](#) How do I select engine families?

### Step 3: Conduct Emissions Tests to Demonstrate Compliance

The emission standards and test procedures required for 2006 and later model year ATVs and OFMCs are summarized in two tables in Attachment 2:

Table 1: [ATV Emission Standards and Test Requirement for 2006 and Later MY](#)

Table 2: [Off-Highway Motorcycle Emission Standards and Test Requirement for 2006 and Later MY](#)

Two types of emission tests are required to demonstrate that vehicles/engines your company manufacturers comply with exhaust standards as specified in [§1051.105](#), [§1051.107](#), or [§1051.145](#) and evaporative emission standards as specified in [§1051.110](#):

- Exhaust emissions tests: to measure CO, NO<sub>x</sub>, HC and CO<sub>2</sub> from the exhaust.
- Evaporative emissions tests: to measure HC permeation emissions from fuel tanks and fuel lines.

*For CARB off-highway recreational vehicle emission standards, refer to Title 13, California Code of Regulations (13CCR), Section 2412(b). For ATVs tested under the small off-road*

*engine procedures, refer to 13CCR, Section 2403(b). These can be accessed at <http://ccr.oal.ca.gov>.*

### **Test for Exhaust Emissions**

In general, the core steps to test **exhaust** emissions include the following:

- 1) Select an Emission-Data Vehicle/Engine (EDV) from each EF (Ref: 40 CFR [§1051.235\(b\)](#))
- 2) Conduct service accumulation
- 3) Conduct durability tests to generate Deterioration Factors (DF) for each regulated pollutant (Ref: [§1051.520](#))
- 4) Conduct emissions tests (Ref: [§1051.235 \(a\)](#))
- 5) Calculate end-of-useful life emissions (Ref: [§1051.240\(c\)\(1\) or \(2\)](#))
- 6) Demonstrate compliance with the required emission standards by comparing end-of-useful life emissions with the applicable emission standards

For exhaust emission tests performed for vehicles on a **chassis** dynamometer, use the appropriate equipment, procedures, and duty cycles as specified in 40 CFR Part 86, Subpart F. For tests performed on ATV engines for emission standards set forth in §1051.145, follow the procedures in [§1051.145\(b\)\(2\) and \(b\)\(3\)](#).

For ATVs with a displacement less than 100 cc or off-highway motorcycles with displacement equal to or less than 70cc, use the testing procedures described in [§1051.615\(d\)](#) to meet the emissions standards set forth in [§1051.615\(a\) or \(b\)](#). *CA has no special alternate provisions.*

In certain cases, you may use previously generated emission data instead of conducting new tests for a new certificate. See [§1051.235\(c\)](#) for details.

If you are a qualified small-volume manufacturer (SVM), you may use EPA-assigned DFs for your emission calculations, or you may request “certify-by-design”, instead of testing your vehicle to generate the required emissions data. To “certify-by-design”, you must show, in writing to the EPA, that the technology used on your vehicles/engines is sufficiently similar to the previously tested technology and that your vehicles/engines will comply with the applicable emission standards. *[CARB regulations have no allowance for small volume manufacturers and do not offer assigned DFs.]*

### **Reference**

- 40 CFR §1051.235 What emission testing must I perform for my application for a certificate of conformity?
- 40 CFR §1051.501 What procedures must I use to test my vehicles or engines?
- 40 CFR § 1051.240 How do I demonstrate that my engine family complies with exhaust emission standards?
- 40 CFR §1051.615 What are the special provisions for certifying small recreational engines?
- 40 CFR §1051.145 What provisions apply only for a limited time?
- 40 CFR §1051.250 What records must I keep and make available to EPA?
- 40 CFR §1051.635 What provisions apply to new manufacturers that are small businesses?
- [13CCR, Section 2412\(b\) Off-highway recreational vehicle exhaust emission standards](#)
- [13CCR, Section 2403\(b\) Small off-road engine exhaust emission standards](#)

### **Test for Evaporative (Permeation) Emissions**

The evaporative hydrocarbon emissions standards are found in 40 CFR §[1051.110](#). The direct standards are 1.5 grams per square meter per day (1.5 g/m<sup>2</sup>/day) for a fuel tank and 15 grams per square meter per day (15 g/m<sup>2</sup>/day) for all of fuel lines.

There are two methods you may use to demonstrate compliance (Ref: §[1051.245](#)):

- 1) Emission testing method as specified in §[1051.515](#) and Figure §[1051.515-1](#) that presents a flow chart for the permeation testing and shows the full test procedure with durability testing, as well as the simplified test procedure with an applied deterioration factor.
- 2) “Certify-by-design” method by showing fuel tanks and fuel lines comply with the design specifications listed in §[1051.245\(e\)](#).

Small volume manufacturers may use an EPA-assigned DF instead of conducting emission tests to develop a DF (Ref: §[1051.245\(c\)\(1\)](#)).

*This requirement will not be reviewed by CARB.*

#### **Reference:**

40 CFR §1051.501 What procedures must I use to test my vehicles or engines

40 CFR §1051.515 How do I test my fuel tank for permeation emissions?

40 CFR §1051.245 How do I demonstrate that my engine family complies with evaporative emission standards?

### **EPA/CARB Audits**

EPA/CARB may conduct certification confirmatory tests, production line tests or in-use tests to measure emissions from any of your vehicles or engines within the engine family or require you to test a second vehicle or engine of the same engine family or different configuration within an engine family (Ref: 40 CFR §1051.235 (d) and [40 CFR Part 1068 Subpart E](#)).

#### **Reference:**

40 CFR §1051.235(d): What emission testing must I perform for my application for a certificate of conformity?

40 CFR Part 1068 Subpart E: Selective enforcement audit

## **Step 4: Prepare an Accurate and Complete Application Package for Certification**

An application for Certification is required to be submitted for each Engine Family for a new model year. This is the documentation that describes what vehicles and engines are covered by the certificate, and how they comply with the emission standards and other regulatory requirements.

### **Application Format**

Instructions on the format of the Application for Certification are contained in a separate guidance - ATV/OFMC Guidance 2 of 3: **RECOMMENDED APPLICATION FORMAT FOR CERTIFICATION OF OFF-HIGHWAY MOTORCYCLES AND ALL-TERRAIN VEHICLES**. Guidance 2 provides detailed instructions regarding how to prepare an accurate and complete Application for Certification.

Your application package is the primary information source of the engine family you intend to certify and it provides the basis for EPA's/[CARB's](#) determination of compliance with the applicable emission control regulations. **A complete and accurate application for certification must be submitted for each engine family prior to EPA/[CARB](#) issuance of a Certificate of Conformity or [Executive Order](#).**

### **Advance EPA/[CARB](#) Approval**

Please note that manufacturers must obtain advance EPA/[CARB](#) approval before taking any action or submitting an application on certain items as listed below, unless otherwise instructed:

- any proposed modifications to EPA/[CARB](#)-specified durability and emission test procedures
- any proposed change to EPA/[CARB](#)-standardized vehicle emission control information (VECI) label specifications (Ref: [§1051.135](#))
- request to become an EPA-designated small volume manufacturer (Ref: [§1051.635](#) and [§1051.801](#)). *[Please note, there are no small volume manufacturer provisions for [CARB](#).]*
- request for competition vehicle exemption (Ref: [§1051.620](#))

### **Application Amendments**

If, prior to EPA/[CARB](#) certification, a manufacturer needs to amend an application that has already been submitted to EPA/[CARB](#) due to changes that have occurred, these changes must be submitted electronically to your designated EPA contact *[and [mailed to your designated \[CARB\]\(#\) contact.](#)]*

### **Application Package:**

#### **a. EPA Package Content**

Manufacturers are required to send an electronic application package to EPA for certification review. The package must at a minimum include:

EPA Application Package Content	Format
<b>1) Application:</b> <ul style="list-style-type: none"> <li>• A cover letter signed by an authorized representative of your company</li> <li>• Complete content of application for certification</li> <li>• A Fee Payment Form</li> <li>• California E.O., if sales area is “California only”</li> </ul>	PDF
<b>2) Data Summary Sheet *</b>	



**\* EPA and CARB are targeting on making the new database and computer system ready for the 2006 MY ATV/OFMC certification program. Before the system is functional, manufacturers are required to use an interim Data Summary Sheet (a data input file in MS Excel format) to submit electronic data for the current EPA database.**

**b. CARB Package Content (for 2006 and later model years)**

*For CARB certification review, manufacturers are required to mail either a CD (with cover letter) or a hardcopy application.*

<i><b>CARB Package Content</b></i>	<i><b>Format</b></i>
<p><i>1) Application:</i></p> <ul style="list-style-type: none"> <li><i>• A cover letter with signature</i></li> <li><i>• Complete content of application for certification</i></li> <li><i>• EPA certificate for 50 St families certified in CA</i></li> </ul> <p><i>* * can be submitted upon issuance</i></p>	<p><i>PDF</i></p>

**Recommendations to New Manufacturers**

To expedite EPA/CARB review, we strongly recommend that a manufacturer who is new to the U.S. EPA/CARB certification and compliance procedures discuss certain topics with your assigned EPA/CARB certification representative well in advance of requesting certification. These topics may include, but are not limited to:

- VECI label content, format and print size, location, and visibility. You may use a photo copy of the label to show this.
- averaging, trading and banking plans, if any
- warranty statements
- emission-related maintenance instructions you intend to provide to the owners of your vehicles/engines

Reference:

- §1051.201 What are the general requirements for submitting a certification application?
- §1051.205 What must I include in my application?
- §1051.215 What happens after I complete my application?
- §1051.250 What records must I keep and make available to EPA?
- §1051.255 What decisions may EPA make regarding my certificate of conformity?

**Special Instructions for Data from a New Testing Facility**

In general, if your certification test data is provided by an emission testing facility that is new to EPA’s automotive certification program, you should provide satisfactory documentation to the EPA that shows:

- 1) the testing facility has demonstrated knowledge of the U.S. EPA certification testing regulations, has the required testing equipment and is fully compliant with the required

- testing procedures contained in the Code of Federal Regulations, 40 CFR Part 86, Subpart F and E or 40 CFR Part 1051 and Part 1065; and
- 2) the testing facility has established an initial satisfactory correlation with the Agency's testing facility or any other reputable independent U.S. certification testing facilities; and/or
  - 3) the testing facility has demonstrated continued correlation by participating periodical correlation confirmation tests among the U.S. testing facilities; and
  - 4) the name, address, telephone number of the manager of the testing facility, and working hour when the manager can be contacted; and
  - 5) a detailed description of the test fuel properties used for testing, demonstrating compliance with the requirements of 40 CFR 86.513-94 or 40 CFR 1065, subpart C, as applicable; and
  - 6) a detailed description of the dynamometer and exhaust gas sampling, demonstrating compliance with the requirements of 40 CFR 86.508-78 through 511-90 or 40 CFR 1065.110, as applicable; and
  - 7) a detailed description of calibration gases used to calibrate the exhaust gas analyzer, demonstrating compliance with the requirements of 40 CFR 86.514-78 or the applicable requirements in 40 CFR 1065 Subpart D; and
  - 8) a description of the dynamometer driving schedule used for certification testing which demonstrates compliance with the requirements of 40 CFR 86.515-78, or the applicable requirements contained in 40 CFR 1051 and 1065; and
  - 9) a description of the method and frequency of calibrating the equipment used for certification testing which demonstrates compliance with the requirements of 40 CFR 86.516 through 86.526, or the applicable requirements in 40 CFR 1065.

EPA may ask you to provide any additional information, including but not limited to, a description of the test procedure used for certification testing, raw test data logs, records of dynamometer driving traces, original logs for service accumulation, photos of testing equipment, raw test results and calculations, correlation test information and analysis, how/when/where and by whom the vehicles/engines were tested, etc.

### Step 5: Pay Appropriate Certification Fees

EPA requires payment of a certification fee (40 CFR Subpart Y, 85.2408(c)) in advance of any EPA services related to certification activities. The application for certification should not be submitted until the certification fee is paid and a manufacturer has completed all required emission tests. EPA will accept and begin work on the application only after the fee is received. Proper and timely fee payments will minimize delays for both the manufacturer and EPA. A fee payment is required for each certificate issued by EPA.

The current EPA certification fee schedule is: (Effective Period: 7/12/04 – 12/31/05)

Category	Certificate Type	Fees Per Certificate
ATV & Off-highway Motorcycles	All Types	\$826
On-Highway Motorcycles, Including ICIs	All Types	\$2,414

The fee schedule will change for each model year as it is adjusted for inflation and to reflect changes in the numbers of certificate issued. Please visit [www.epa.gov/otaq/fees.htm](http://www.epa.gov/otaq/fees.htm) for the most current information and the exact fees you need to pay for a specific model year.

The fee is made payable to the U.S. Environmental Protection Agency according to the procedure described in EPA guidance letter [CCD-04-14](#) and must be submitted with a Fee Filing Form, which is available at: [www.epa.gov/otaq/fees.htm](http://www.epa.gov/otaq/fees.htm). Allow approximately two weeks for the EPA to receive the fee and log your payment into our database. Proof of payment is based on the payment being received by EPA and its entry into the EPA database.

*Current CARB regulations do not require off-road certification fees.*

## **Step 6: Submit the Application Package for Certification**

Before the EPA/CARB database is functional, there are three different submission procedures depending on where you intend to sell the vehicles/engines covered by the certificate: in California only; in all 50 states; or in the U.S. except California (“49 states”).

- 1) For a “**California only**” certificate: submit your application to CARB first and obtain their Executive Order (E.O.) prior to applying for a Federal certificate; EPA in general issues a Federal certificate only after a California E.O. is issued.
- 2) For a “**50 states**” certificate: submit your application to EPA *and CARB concurrently*.
- 3) For a “**49 states**” certificate: submit your application to EPA only.

### **Current Application Submission Process**

Manufacturers are required to either email or mail your **electronic** application package (using any electronic media, such as a CD) to the EPA. Please be aware that the confidentiality of email transmissions cannot currently be guaranteed, so if this is of particular concern to you, you may prefer to send applications via regular mail. Send the package to the attention of your designated EPA certification representative at:

Motorcycle/ATV Certification Team  
Certification and Compliance Division  
Office of Transportation and Air Quality  
U.S. EPA  
2000 Traverwood Drive  
Ann Arbor, MI 48105

*Manufacturers are required to mail either CD (with cover letter) or hard copy application to CARB:*

*Mr. Allen Lyons, Chief  
Mobile Source Operations Division  
Air Resources Board  
9480 Telstar Ave. Suite 4  
El Monte, CA 91734-2301*

### **Future Plans – For information only**

The EPA Certification and Compliance Division is currently redesigning its computer system. The new system architecture will allow EPA and CARB to share data and will permit manufacturers to submit their data and application package in one of three ways:

- 1) **Upload manufacturers’ data and files to the EPA system via Web browser:**

Manufacturers can create their data with whatever tool they wish, as long as the output is in XML format as specified by EPA (EPA will provide the XML schema) and then upload to EPA's system using a standard web browser.

2) **Provide data and files using interactive Web forms:**

Manufacturers can use the EPA developed web forms to interactively input their data field-by-field and to attach their PDF application to the input form using a standard web browser.

3) **Using computer-to-computer data transmittal:**

Manufacturers can send their XML formatted data computer-to-computer without the use of human intervention through the Internet.

The ATV/OFMC/HMC program is a pilot for this proposed new computer system. The [EPA/CARB](#) is planning to have the system ready and start collecting data for the program in a near future, and the instructions on "how to" will be provided.

### **Step 7. Build Vehicles According to Certified Specifications**

After receiving an EPA certificate and/or CARB Executive Order, (E.O.), manufacturers must take the necessary steps to assure that the production vehicles or engines are within the scope of an issued certificate/E.O., with respect to materials, engine design, drivetrain, fuel system, emission control system strategy and components, exhaust after-treatment devices, vehicle mass, or any other device and component that can reasonably be expected to influence exhaust emissions.

### **Step 8: Label Each New Vehicle Produced**

In general, three labels are required for each new vehicle you produced:

- a permanent and unique Vehicle Identification Number (VIN) (§[1051.135\(a\)](#));
- a permanent Vehicle Emission Control Information (VECI) label (§[1051.135\(b\) to \(e\)](#)); and
- a removable consumer information hang-tag which provides relative emission information in terms of normalized emission rate (NRE) in comparison with emissions of other vehicles (§[1051.135\(g\)](#)).

*[For CARB, the certifying manufacturer's name must be indicated on the VECI label]*

Reference:

40 CFR §1051.135 How must I label and identify the vehicles I produce?

40 CFR §1051.645 What special provisions apply to branded engines?

### **Step 9: Conduct Production Line Tests (PLT)**

Engine families, except those complying with the Phase I emissions standards **and** not certified to Family Emission Limits (FELs) (*40 CFR* §[1051.145\(c\)](#)), are subject to the PLT requirements (Ref: 40 CFR Part 1051, [Subpart D](#)).

Small volume manufacturers are exempted for the PLT requirements (*40 CFR* §[1051.301\(a\)](#)).

### **Advance EPA Approvals**

When PLT requirements are applicable, you must get EPA's advance approval for the following items, unless otherwise instructed:

- use of an alternative PLT program (§[1051.301\(d\)](#))
- reduced PLT tests after two years of good records (§[1051.301\(e\)](#))
- methods to handle a malfunctioned PLT vehicle or engine (§[1051.305\(c\)](#))
- retest after an invalid test (§[1051.305\(g\)](#))

### **PLT Procedures**

Manufacturers who are subject to PLT requirements must conduct PLT after receiving a certificate during the model year's production period and use the procedures described in §1051.301-315.

### **Failure Reports**

If any single tested vehicle or an engine family fails, the manufacturer is required to submit a **failure report** to EPA as indicated in the following chart:

<b>PLT Failure Case</b>	<b>Certificate Status</b>	<b>Remedy Action</b>	<b>Report Timing</b>
a. An individual vehicle/engine fails	Automatically suspended for the vehicle/engine	See § <a href="#">1051.320</a>	Report in the end-of-test period report
b. An engine family fails	Suspended in whole or in part for the EF, EPA case-by-case decision.	See § <a href="#">1051.325</a> & § <a href="#">1051.335</a>	Report within 10 days (§ <a href="#">1051.315(g)</a> )

EPA will review the report and notify the manufacturer of its decision that may include, but is not limited to, suspending or revoking the certificate, amending FELs, etc. To reinstate a suspended certificate, a manufacturer must make corrections to ensure their vehicles/engines meet emissions standards set forth in §1051.105, §1051.107 and §1051.145.

### **Periodic Reports**

Manufacturers subject to PLT are required to submit the following periodic reports (Ref §[1051.310](#))

<b>Project EF Sales</b>	<b>Production Period</b>	<b>Test Period</b>	<b>Required Report</b>	<b>Note</b>
≥ 1600 units	= 12 Months	3 Months	1 report / 3 mo	Submit periodical <b>electronic</b> report within 30 days of the end of each test period.
	< 12 Months	Equal segment, 70 – 125 days/Segment	1 report/segment	
< 1600 units	Any	Whole MY	1 report / MY	

EPA has the authority to revoke a certificate if a manufacturer does not meet the reporting requirements (§1051.340(a)(1)). Manufacturers must also keep **all paper** records as specified in §1051.350 for **one full year after all required testing has been completed for that engine family** in a model year.

### **Reference**

40 CFR §1051.301 When must I test my production-line vehicles or engines?

40 CFR §1051.305 How must I prepare and test my production-line vehicles or engines?

- 40 CFR §1051.310 How must I select vehicles or engines for production-line testing?
- 40 CFR §1051.315 How do I know when my engine family fails the production-line testing requirements?
- 40 CFR §1051.320 What happens if one of my production-line vehicles or engines fails to meet emission standards?
- 40 CFR §1051.325 What happens if an engine family fails the production-line requirements?
- 40 CFR §1051.330 May I sell vehicles from an engine family with a suspended certificate of conformity?
- 40 CFR §1051.335 How do I ask EPA to reinstate my suspended certificate?
- 40 CFR §1051.340 When may EPA revoke my certificate under this subpart and how may I sell these vehicles again?
- 40 CFR §1051.345 What production-line testing records must I send to EPA?
- 40 CFR §1051.350 What records must I keep?

### Step 10: Submit Amendments to the Application

You must report to EPA/[CARB](#) any changes to the application made after EPA/[CARB](#) has issued a certificate/[E.O.](#) for that engine family. Minor typographical corrections may be submitted directly to the designated EPA/[CARB](#) officer.

There are three circumstances under which you must amend your application prior to taking the action. These actions are:

- 1) add a new vehicle configuration to the certified engine family; or
- 2) modify a FEL for a certified engine family; [*for CARB, designated standard change is not allowed once vehicles are certified;*] or
- 3) change a vehicle already included in the engine family in a way that may affect emissions.

Under these circumstances you will need to submit a request to EPA/[CARB](#) to amend the application and include the information required in 40 CFR [1051.225\(b\)](#). Upon submitting this information to EPA/[CARB](#) you may take the requested action, however, EPA/[CARB](#) still has the authority to request more information, or to deny the requested action. Depending upon the change, EPA/[CARB](#) may issue a revised certificate or Executive Order.

*For CARB, the amendments should be submitted by mail in the form of a CD with a cover letter, or a hardcopy.*

#### Reference

- 40 CFR §1051.220 How do I amend the maintenance instructions in my application?
- 40 CFR §1051.215 What happens after I complete my application?
- 40 CFR §1051.225 How do I amend my application for certification to include new or modified vehicles or to change an FEL?

### Step 11: Submit Required Reports

Manufacturers must submit the following reports to EPA, if applicable:

1. **End-of-model year phase-in report** for the applicable phase-in time period. In general, the report is required for the first two phase-in model years and can be in the format of a

spreadsheet that shows a breakdown of individual engine families, compliance status, U.S. sales, total company U.S. sales and percentage compliance status within that appropriate model year.

2. **End-of-model year Averaging, Banking and Trading (ABT) report.** (see recommend format in Guidance 2)
3. **Periodical and end-of-model year PLT report** (see Step 9)

Failure to submit the required reports within the required time period may result in suspension or revocation of a certificate.

*Manufacturers must submit quarterly production reports and an End-of-Model Year corporate average report to CARB.*

## **Step 12: Provide Maintenance Instructions to Purchasers of Vehicles, Provide Warranty Service Information, Submit Defect Reports and Conduct Vehicle Recalls, if Any.**

### **Maintenance Instructions:**

40 CFR §[1051.125](#) provides the detailed requirements for written maintenance instructions that a manufacturer must provide to an ultimate purchaser of the vehicle. The application must contain the same maintenance instructions you provide to your customers.

Please note you may not schedule critical emission-related maintenance within the minimal useful life period for the components specified in 40 CFR §[1051.125\(a\)\(3\)](#).

The EPA and [CARB](#) require you to submit the owner's manual that contains your warranty statement and maintenance instructions to the EPA/[CARB](#) when it is available. Instead of submitting hard copies, you may provide us with electronic copies via CDs or email or access via an Internet link to that information.

### **Warranty Requirements**

Requirements for warranty, including warranty period, components covered, scheduled maintenance, limited applicability and aftermarket components are found in 40 CFR [1051.120](#). You are required to describe in the owner's manual the emission-related warranty provisions that apply to your vehicles/ engines.

### **Defect Reports and Recalls**

A certifying manufacturer must track warranty claims, parts shipments and any other information that may indicate possible emission-related defects. You must include a description of your tracking approach in your application for certification. You must investigate possible emission-related defects and send Defect Reports (DR) when the number of defects reaches the applicable threshold in the following table is reached (Ref: 40 CFR §[1068.501](#)).

If EPA determines your vehicles or engines do not conform to the applicable regulations, you must submit a remedy plan within 60 days of EPA's notice and remedy those non-compliance vehicles or engines at your expense.

**Thresholds for Initiating Investigation and Filing DRs**

Rated Power	Component	Thresholds (ref: 40 CFR 1068.501(e)& (f))	
		Investigation	Filing DR
< 560 kW	After-treatment Devices including Catalytic converter	2% or 2,000 units, whichever is less.	0.125% or 125 units, whichever is less.
	Other emission related components	4% or 4,000 units, whichever is less.	0.250% or 250 units, whichever is less.
≥ 560 kW	All emission related components	1% or 5 units, whichever is greater.	0.5% or 2 units, whichever is greater.

**Reference**

**40 CFR §1068. 501 –540** ([www.access.gpo.gov/nara/cfr/cfrhtml\\_00/Title\\_40/40cfr1068\\_00.html](http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr1068_00.html))

[1068.501](#) How do I report engine defects?

[1068.505](#) How does the recall program work?

[1068.510](#) How do I prepare and apply my remedial plan?

[1068.515](#) How do I mark or label repaired engines?

[1068.520](#) How do I notify affected owners?

[1068.525](#) What records must I send to EPA?

[1068.530](#) What records must I keep?

[1068.535](#) How can I do a voluntary recall for emission-related problems?

[1068.540](#) What terms do I need to know for this subpart?



**Attachment 1:****List of Questions for New Manufacturers**

To determine your manufacturer status for EPA's/CARB's emission certification program, please answer the following questions:

- 1) What are the specific details of the vehicles/engines that you intend to certify, such as vehicle/engine type, fuel type (gasoline, diesel), exhaust and evaporative emissions control devices, etc.? Please provide brochures, pictures, copies of owner's manuals, repair manuals, warranties, emission labels, and any sales or promotional information available to the public or other readily available materials which would be useful in explaining your products.
- 2) How will your products be manufactured? Provide a brief description of the manufacturing process for these vehicles/engines, including how, when, where and by whom the vehicles/engines are initially manufactured or assembled; how, when, where and by whom the vehicles/engines will be modified (if applicable) following initial assembly. Also describe briefly how, when, where and by whom the vehicles/engines will be tested for emissions. Briefly describe the test facility to be used for certification testing, including the type of dynamometer used and the test procedures used for certification testing.
- 3) What are the anticipated combined U.S. sales of vehicles/engines you intend to certify during the model year in question? Please provide breakdown sales numbers for each vehicle or engine category (such as ATVs, off-highway motorcycles, etc.)
- 4) Is your company linked to any other automobile manufacturing or importing company? For example, does your company lease, operate, control, supervise, or own part of another company which manufactures, imports, or certifies recreational vehicles? Does some other company lease, operate, control, supervise, or own part of your company? If so, what is the name of the company, the percent ownership, and the company's projected, combined U.S. sales of all recreational vehicles for the model year?
- 5) If the original manufacturer of the vehicles that you intend to certify makes production changes during the model year after certification, how will this information be made available to EPA/CARB for updating the application for certification you must submit to obtain your certificate of conformity? Describe the method used by the original manufacturer to notify you of any running changes made to the vehicle.
- 6) What assurances do you have of the durability of your emission control systems? How do you plan to demonstrate to the U.S. EPA/CARB that the control system technology described in your application which you intend to certify will meet emission standards throughout the specified useful life period?
- 7) What assurances do you have to confirm that production vehicles/engines will be identical in all material respects to the motorcycles described in application for certification?

- 8) Have you derived, or will you derive, deterioration factors (DFs) from the mileage accumulation, and associated testing, of a durability-data, or do you request to use EPA-assigned deterioration factors for the model year you wish to certify?
- 9) Are you aware of your obligation as a manufacturer to warrant, and will you warrant, the emission control system for the useful life of the vehicles/engines in accordance with the warranty requirements set forth in Section 207(a) of the Clean Air Act (42 U.S.C. 7541(a))?
- 10) How do you plan to demonstrate to the U.S. EPA that in-use emission non-compliance problems, if any, will be corrected in a timely manner? Provide a detailed description regarding your plans to track the vehicles/engines sold in the U.S., to handle customer complains, to track warranty claims, and to submit required Defect Reports to the U.S. EPA.
- 11) Are you an authorized representative for this manufacturer? Please appropriate documentation such as your contractual agreement with the manufacturer that provides you with the authority to work with that manufacturer or a letter on manufacturer letterhead signed by a high-level official from that company.

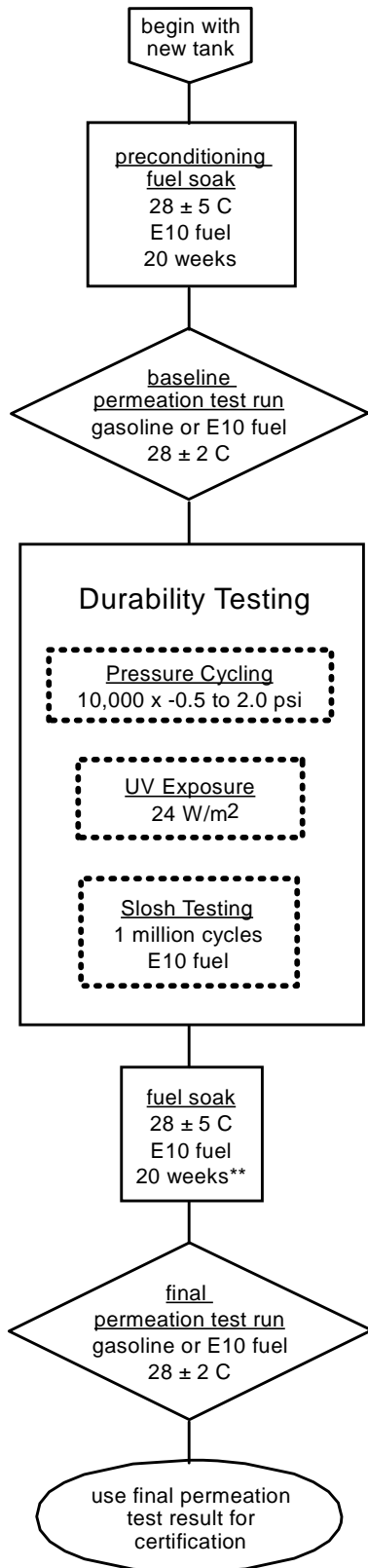
**Table 1: ATV Emission Standards and Test Requirement for 2006 and Later MY**

Exhaust Emissions:								
Standard Type	Emission Standards		Phase-in MY and Requirement	Reference for Test Procedures and Driving Schedule	Min. Useful Life	Test Fuel & Lubricants	Note	
	HC+NOx	CO						
<b>Vehicle Chassis Standards (g/km)</b>			2006: 50% 2007 and later 100%	<b>Vehicle Chassis Dyno:</b> <u>Equipment &amp; Procedures:</u> 40 CFR Part 86, Subpart E & F <u>Test Duty Cycle:</u> 40 CFR 86 App. I (c)	10,000 km, or 1,000 hr, or 5 yr, whichever comes first.	40 CFR 1065, Subpart C	<ul style="list-style-type: none"> <li>• ABT is allowed</li> <li>• No early emission credit</li> <li>• An EF certified to FELs must have production line test</li> </ul>	
Standard	1.5	35						
Max. FEL for ABT	20.0							
<b>Optional Engine Test Standards (g/kW-hr)</b>			1. 2006: 50%, 2006 2007 and 2008: 100%,  2. Not applicable after 2008	<b>Engine Dyno:</b> <u>Equipment &amp; Procedures:</u> 40 CFR 1065 <u>Test Duty Cycle:</u> <100cc: 1051.615(d) <225 cc: 1051.145(b)(2) ≥225 cc: 1051.145(b)(2)				
< 100 cc	Standard	25.0						500
	Max. FEL for ABT	40.0						
<225 cc	Standards	16.1						400
	Max. FEL for ABT	32.2						
≥225 cc	Standards	13.4	400					
	Max. FEL for ABT	26.8						
Evaporative Emissions								
Equipment	Unit	HC	Phase-in MY	Test Procedure	Min. Useful Life	Note		
Fuel Tank	g/m <sup>2</sup> /day at 82°F	1.5	2008 and Later: 100%	40 CFR 1051.515	Same as above	<ul style="list-style-type: none"> <li>• ABT is allowed for tanks only</li> <li>• Certification by design is an option.</li> </ul>		
Fuel Hose	g/m <sup>2</sup> /day at 73°F	15		Pre-conditioning: §1051.501(c)(2) Permeation Test: 40 CFR 1051.810 (SAE J30)				

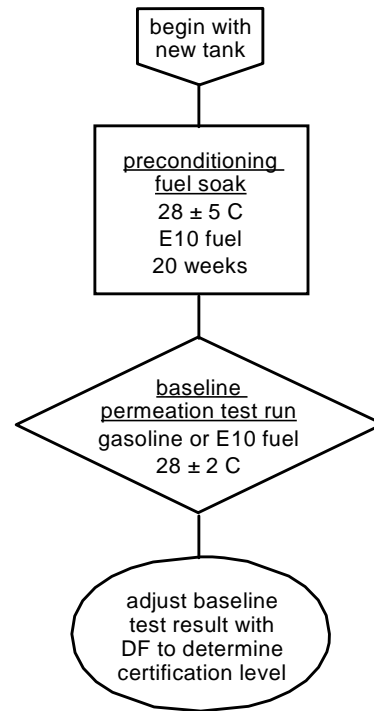
**Reference & Notes:**

- §1051.107, §1051.615(a) and §1051.145(b): ATV exhaust emission standards
- §1051.110: ATV evaporative emission standards
- §1051.245: Design based certification for tanks and hoses
- HC stands for: 1) THC, if use gasoline and LPG; 2) NMHC, if use natural gas and 3) THCE, if use alcohol fuel.
- EF: Engine Family-A group of vehicles with similar emission characteristics, as specified in §1051.230
- FEL: Family Emission Limit
- ABT: Averaging, Banking and Trading

# 1: Full Test Procedure



# 2: Base Test with DF\*



\* The deterioration factor (DF) is the difference between the baseline and final permeation test runs in the full test procedure.

\*\* This soak time can be shortened based on the length of "soak" during durability testing.

## **Recommended Application Format for Certification of Off-highway Motorcycles and All-terrain Vehicles**

To expedite review of your application for certification, the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB) strongly recommend that you adopt the standardized application format presented in this Guidance. While other formats may be acceptable, they may result in longer EPA/CARB review time.

The recommend application format is based on the requirements specified in 40 CFR §1051 (published on November 8, 2002 and are subject to change through future regulatory amendments) and corresponding CARB's Standards and Test Procedures (CaSTP). In this guidance, citations to 40 CFR §1051 shall also mean references to the corresponding CaSTP for the same requirements unless noted otherwise.

*Please note that EPA and CARB regulations differ in certain requirements (e.g., definition of ATV, alternate useful life, alternate test schedules, assigned DFs, emission standards and measurement units, etc.) For vehicles intended for sale in California, manufacturers must obtain separate certification from CARB. For these vehicles, the term "EPA/CARB" as used throughout this guidance document shall mean that any applicable certification requirements and agency action must be **separately but concurrently** addressed to and ruled on by EPA and CARB.*

July 21, 2004

Certification and Compliance Division  
Office of Transportation and Air Quality  
U.S. EPA

California Air Resources Board

## Recommended Application Format

**Part A. Common Information****Part B. Individual Engine Family Application**

1. Request for Certification
2. Correspondence and Communications
3. Data Summary Sheet (DSS)
4. 40 CFR §1051.205 (a) to (s) Application Requirements
5. Averaging, Banking, and Trading (ABT) Requirements, if any.
6. Additional California Requirements (reserved)

**Part A. Common Information** (to be submitted with your **first** application for a new model year and must be updated when changes occur before and after certification)

You may submit certain information which is common to more than one engine family (EF) in Part A, rather than in Part B for an individual EF's application. If you do so, you may reference the information rather than submit it within Part B application. We have made suggestions, in each section of Part B below, of information that can usually be submitted as common information.

**Part B. Individual Engine Family Application** (to be submitted for **each** engine family for a new model year and must be updated when changes occur before and after certification)

### 1. Request for Certification

The request for an EPA certificate and/or CARB Executive Order (EO) should contain the following information:

- Manufacturer's legal name
- Name of the engine family that you intend to apply for a certificate/EO
- All applicable vehicle categories (see Part B.4(a)) within the EF.
- Statements that the EF complies with all applicable EPA/CARB regulations
- Primary certification contact for questions: name, title, phone and email addresses.
- Signature of an authorized company representative.

#### Advice for Submittal:

- Organize the above information as a cover letter. *Note: CARB requires an original signed cover letter to be submitted in paper format.*
- Identify your company's primary certification contact by "For questions call..."
- In general, you should plan for at least 30 days for EPA/CARB to review and issue a certificate/Executive Order from the time a complete application is submitted. However, if you have a special need for an expedited review, please indicate in the letter.

## 2. Correspondence and Communications

### Information to be Included:

- Names, titles, phone numbers, fax numbers, e-mail addresses and areas of responsibility of all persons authorized to be in contact with EPA/CARB compliance staff. **At least one U.S. contact must be provided.**
- Dedicated Email address (one per company) for EPA to send certificates and any other official documents.
- U.S. mail address where EPA may mail official document if Email is not appropriate path.
- U.S. mail address where CARB will mail official documents, if different than above.

### Advice for Submittal:

- Supply complete list of contacts in Part A.
- Create a dedicated email address to receive your certificate. We strongly recommend that you use the format [certificate@\[company\].com](mailto:certificate@[company].com) for your company to receive certificates and any other official documents.

## 3. Data Summary Sheet (DSS)

The Data Summary Sheet (DSS) (See Guidance 2, Attachment 1: DSS) is the printout summary of data that you entered into the EPA/CARB database for this engine family prior to preparing this application (A separate guidance regarding submitting data into EPA/CARB database will be provided when the database is ready). The DSS is comprised of the following sections:

- 1: General Information
- 2: EPA/CARB Emission Standards and Certification Levels
- 3: Engine Family Description
- 4: Exhaust Emission Control Information
- 5: Exhaust Emission Data Vehicle and Test Data
- 6: Permeation Emissions Control and Test Data
7. Models Covered

Including the DSS in the application not only reduces submission of redundant information that is required in other sections of Part B but also provides manufacturer another chance to review the data entered into EPA/CARB database.

[Note: Before the planned EPA/CARB database is fully functional, manufacturers may need to fill out the DSS.]

## 4. 40 CFR «1051.205 (a) to (s) Application Requirements

### (a) Engine Family (EF) Description (Ref: 40 CFR §1051.205(a))

Describe the engine family's specifications and other basic parameters of the vehicle design. List the type of fuel you intend to use to certify the engine family. List vehicle configurations and model names that are included in the engine family.

Information to be included:

- Engine family name
- All applicable EPA/CARB vehicle categories within the EF:
  - **ATV.A** (all-terrain vehicle meeting CARB's 13 CCR 2411 definition and EPA's 40 CFR §1051.801 All-Terrain Vehicle (1) definition);
  - **ATV.B\*** (all-terrain vehicle meeting EPA's 40 CFR §1051.801 All-Terrain Vehicle (1) and (2) definition but not CARB's 13 CCR 2411 definition);
  - **OFMC** (off-highway motorcycle);
  - **ENG** (engine-only certification, see 40 CFR §1051.20; not allowed under CARB regulations); or
  - **UTV** (off-road utility vehicles covered by 40 CFR §1051.1 (a)(4))\*
- Any new technology applied
- Fuel type(s) (operating fuel(s)): gasoline, liquefied petroleum gas (LPG), methanol, or natural gas (NG), etc.
- The EF's specifications:
  - engine type, combustion cycle, displacement(s), rated power and torque, the number and arrangement of cylinders, appropriate bore diameter, and other basic vehicle parameters
  - engine cooling medium (air, water, oil, etc)
  - fuel system configuration, use SAE J1930 abbreviations:
    - ❖ CARB - Carburetion
    - ❖ TBI - throttle body fuel injection
    - ❖ MFI – multi-port fuel injection
    - ❖ SFI - sequential MFI
    - ❖ DGI - direct gasoline injection
    - ❖ AIR - secondary air injection
    - ❖ PAIR - pulsed AIR, etc.
  - method of air aspiration (natural, turbo charge, supercharge, etc.)
- Models covered (commercial model names, not manufacturer's model code names)

Advice for Submittal:

- Reference the appropriate sections on DSS for information required above.
- *Alternatively, manufacturers may choose to provide two tables, one for the models for CARB certification and the other for EPA certification.*

*\* to be certified under CARB SORE or LSIE regulations*

**(b) Emission Control Systems and Auxiliary Emission Control Devices (AECD) (Ref: 40 CFR §1051.205(b))**

Explain how the emission-control systems operate:



- (1) Describe in detail all the system components for controlling exhaust emissions, including auxiliary emission-control devices and all fuel-system components you will install on any production or test vehicle or engine. Explain why any auxiliary emission-control devices are not defeat devices (see 40 CFR §1051.115(f)). Do not include detailed calibrations for components unless we request them.
- (2) Describe the permeation emission controls.

**For Exhaust Emission Control:**Information to be Included:

- The detailed description of your catalyst converters (type, number, location, arrangement (i.e., parallel or series)\*, volume, compositions, etc)
- The number, location, arrangement (i.e., parallel or series)\* and type of the sensors, if any
- Brief description of fuel-system
- Brief description of Exhaust Gas Recirculation (EGR) as applicable
- Brief description of air injection system as applicable
- Brief description of any other exhaust emission control system
- Part numbers of emission related component (part numbers as stamped on the component, not the stock or inventory numbers)

\* Use prefix “2” and suffix “(2)” to designate parallel and series arrangements, respectively (e.g., 2OC means two oxidizing catalytic converters in a parallel arrangement; O2S(2) means two oxygen sensors in a series arrangement, one before and one after the catalytic converter).

Advice for Submittal:

- You may reference the appropriate sections in the DSS for some information required above.
- You may organize the emission related part data in a table format.
- You may use schematics to illustrate control devices or strategies, if applicable.
- You may place any general descriptions or schematics in Part A.
- If you consider any of the catalyst information (volume, composition or ratio of the precious metals, etc.) to be confidential, create a code, such as “catalyst A” in a public file (name it FOI\_[EF name].pdf) of the application and describe the catalyst associated with the code in the confidential copy (with name CBI\_[EF name].pdf). Both files must be submitted to EPA/CARB.

**For Evaporative/Permeation Emission Controls** (Ref: 40 CFR §1051.245)Information to be Included:

- Permeation family or group name, if any.
- Fuel tank(s): material, wall thickness, total inside surface area and treatment approach/control technology.
- Fuel lines: material, wall thickness, total inside surface area and control technology.
- Detailed description of any other means or strategies used to prevent permeation emissions.

- Description of crankcase emission control.

Advice for Submittal:

- You may reference the appropriate DSS sections for the information required above.
- Use schematics to illustrate crankcase, tanks or hoses emissions controls as applicable, and place any common descriptions or schematics in Part A.
- For permeation emission control devices that are used in multiple engine families, you may reference a complete list of breakdown of your permeation emission control devices or strategies in Part A, rather than re-describe them within each application for an individual engine family.

**Auxiliary Emission Control Devices (AECD):**

Information to be Included:

All AECDs installed on any applicable vehicles including the sensed and controlled parameters. A detailed justification for each AECD which results in a reduction in effectiveness of the emission control system and rationale why the AECD is not a defeat device as defined under 40 CFR §1051.115(f).

Advice for Submittal:

- You may make a table, such as below, to list all AECDs, sensors, sensed and controlled parameters and justifications involved in the engine family:

AECD	Sensed Parameter	Sensor	Controlled Parameters				Justification/ Rationale
			Volt High	Volt Low			

- You may reference a complete breakdown list of AECD tables for a model year in Part A rather than re-describe them with each engine family.
- If you consider any of the AECD information to be confidential, create a code in the public copy of the application and describe the confidential information associated with the code in the confidential copy. As mentioned above, both copies must be submitted to EPA/CARB.

**(c) Emission Data Vehicle/Engine (EDV) Description (Ref: 40 CFR §1051.205(c))**

Describe the vehicles or engines you selected for testing to satisfy the certification requirements and the reasons for selecting them.

Information to be Included:

- Manufacturer’s explanation for EDV selection (including justifications that the selected EDV meets the selection requirements under both EPA/CARB regulations, e.g. justify

why a federal vehicle model selected for EDV for the EF meets CARB requirements; or, vice versa, why a California vehicle model selected for EDV for the EF meets EPA requirements)

- Data type (new, carryover, or carry across)
- EDV ID (Vehicle Identification Number (VIN) or manufacturer's ID)
- EDV configuration
- EDV model name
- EDV rated horsepower @ rpm and rated torque@rpm
- EDV displacement
- EDV transmission type
- EDV N/V
- EDV curb mass
- EIM
- Road Load (nt)
- Test number
- Test fuel
- Exhaust emission control systems
- Maintenance performed

Advice for Submittal:

- You may place a complete breakdown of your EDV information for a model year in Part A and refer the page number of Part A in this section.
- You may reference the appropriate DSS sections for test vehicle/engine information requested above.

**(d) Alternate or Special Test Procedure Description (Ref: 40 CFR §1051.205(d), 235 & 501)**

Describe any special or alternate test procedures and/or special test equipment you used.

**Please note advanced EPA/CARB approvals are required before taking action.**

Information to be Included:

Description of all EPA/CARB-approved special or alternate test procedures, special test equipment, durability procedures or driving schedules you used for exhaust or permeation emission tests.

Advice for Submittal:

- Include a copy of EPA's and CARB's approvals in the application when a special or alternate test procedures and/or special test equipment is used; or,
- Reference the EPA's and/or ARB's approval numbers here, if any.

**(e) Durability Test Procedure Description (Ref: 40 CFR §1051.205(e) and 40 CFR §1051.520)**

Describe how you operated the test vehicle or engine prior to testing, including the duty cycle and the minimum testing distance or minimum numbers of engine operating hours to stabilize the emission levels, number of tests conducted and any scheduled maintenance you performed.

Please note, advanced EPA and CARB approvals are required prior to use of any special or alternate test procedures and/or special test equipment.

### **Exhaust Emissions Durability Procedures (40 CFR §1051.520):**

*Note: EPA-designated small-volume manufacturers (SVMs) may request to use EPA's assigned deterioration factors (DFs) instead of performing durability tests. California regulations and test procedures require durability demonstration for every EF but, unlike EPA's, do not provide for the use of assigned DFs. SVMs should discuss with assigned CARB staff to obtain advance CARB approval on how CARB's durability requirements will be met before any certification tests are conducted. Failure to do this can significantly delay CARB certification and/or result in a denial of the manufacturer's certification request.*

#### Information to be Included:

- Deterioration Factor (DF) data type (new, carryover, [carry-across](#), or EPA assigned DFs for SVMs)
- If your durability data vehicle (DDV) is different than EDV (in certain carryover or carry-across cases), please provide the same information as required in Part B.4(c) for the DDV.
- Description of the durability procedure: mileage accumulation procedure, minimum and total testing distance/hours, number of tests conducted, emission levels from each test and any scheduled maintenance performed.

#### Advice for Submittal:

- Provide the durability procedure descriptions in Part A and place a reference in this section.
- Reference appropriate Section(s) on DSS for deterioration factors and test results.
- If new durability data is not provided, explain the reason and identify the source of data.
- Provide durability data and information in a table format.

### **Permeation Emissions Durability Procedures (40 CFR §1051.515(c)):**

#### Information to be Included:

- Specifications of durability tanks/hoses
- Specifications of a canister(s), if any
- Description of any modifications made to EPA standardized procedure, if any.

#### Advice for Submittal:

- Provide the durability procedure descriptions in Part A. Then provide a reference in this section.

- Reference the DSS.B6 for all deterioration factors.
- If new durability data is not provided, explain the reason and identify the source of data.

**(f) Test Fuel Specifications (Ref: 40 CFR §1051.205(f))**

List the specifications of the test fuels to show that they fall within the required ranges

Information to be Included:

- Lists of the test fuel specifications for both exhaust and permeation emissions.

Advice for Submittal:

- List the test fuel specifications for both exhaust and permeation emissions side-by-side with the required range as specified in the applicable regulations.
- Place the above comparison lists in Part A and reference them in this Section.

**(g) Useful Life of the Engine Family (Ref: 40 CFR §1051.205(g))**

Specify the useful life of the engine family.

For EPA certification, in general the **minimum** useful life is 10,000 kilometers, 5 years, or 1,000 hours, whichever comes first. Five years should be used when the vehicle is not equipped with an odometer or hour meter.

*For CARB, the useful life is fixed at 5 years/10,000 km; any other useful life, such as 1000 hours or any other alternative use full life that may be permitted under EPA regulations, is not allowed for California certification. Therefore, vehicle models intended to be certified for California-only or 50 states must comply with CARB useful life requirement.*

**(h) Maintenance and User Instructions (Ref: 40 CFR §1051.205(h) and 40 CFR §1051.125)**

Provide the proposed maintenance and use instructions for the ultimate buyer of each new vehicle of this engine family as specified in 40 CFR §1051.125.

Information to be Included:

- Critical-emission related maintenance
- Recommend additional maintenance
- Special maintenance
- Non-critical-emission related maintenance
- Maintenance that is not emission-related
- Emission related part number summary form and sources for parts and repairs

Advice for Submittal:

- Make a table to list all parts that are emission related, with sources for parts and repairs.
- Provide us with the Owner's Manual for the new vehicles/engines when available.  
Submit the final ones in hardcopy.

**(i) Emission-Related Installation Instructions (Ref: 40 CFR §1051.205(i) and 40 CFR §1051.130)**Information to be Included:

The proposed emission-related installation instructions for each model covered by this application, if you sell engines for someone else to install in a recreational vehicle (see 40 CFR §1051.130).

Advice for Submittal:

- **Discuss with EPA/CARB in advance on any issues raised on emission related installation instructions.**
- You may reference a complete breakdown of emission-related installation instructions for a model year in Part A and place a reference page number here.

**(j) Vehicle/ Engine Emission Control Information (VECI) Label (Ref: 40 CFR 1051.205(j))**

Propose an emission control information label.

Information to be Included:

- As specified in 40 CFR §1051.135 (c).

Advice for Submittal:

- **Discuss with EPA/CARB in advance if you propose any changes other than specified in 40 CFR §1051.135 (c).**
- Present a photocopy of the VECI label in the **same size** as the actual label.
- You may reference a complete set of photocopies of the labels for a model year in Part A.

**(k) Emission Data (Ref: 40 CFR §1051.205(k))**

Present emission data to show that you meet emission standards.

Information to be Included:

- Exhaust emission data for HC, NO<sub>x</sub>, HC+NO<sub>x</sub> and CO before and after applying deterioration factors, as specified in 40 CFR §1051.205(k)(1).
- Permeation emission test data for HC before and after applying deterioration factors, as specified in 40 CFR §1051.205(k)(2).

Advice for Submittal:

- Reference appropriate DSS section(s) for information requested.
- If new emission data is not provided in certain cases such as existing emission data carry-over, carry-across, or certify by design (Ref. 40 CFR §1051.235 & 245), explain the reason and identify the sources of data.

**(l) All Test Results (Ref: 40 CFR §1051.205(l))**

Report all test results, including those from invalid tests or from any nonstandard tests (such as measurements based on exhaust concentrations in parts per million). The records of all test results should include a description of test parameters and special test procedures that are applicable to the vehicles/engines covered by the certificate of conformity.

Information to be Included:

- All test results and calculations
- EDV preparation and starting procedures
- Service accumulation and emission stabilizing procedures
- Driving schedule/duty circles
- Shift schedules (list EPA/CARB shift schedule number and shift speeds)
- Dyno loading information (roadload coefficients, as appropriate; indexed by the vehicle characteristics (models, equivalent inertia mass (EIM), etc.)
- Permeation testing parameters
- Special test procedures, if any
- Special test equipment, if any

Advice for Submittal:

- Upon request, submit copies of raw test logs and any other raw records used in certification testing, including testing dates, numbers and distances, raw emissions data and calculations, and a description of all maintenance performed during a test.
- Keep all certification test related records on file for at least 5 model years.

**(m) Deterioration Factors (DFs) (Ref: 40 CFR §1051.205(m))**

Identify the engine family's deterioration factors and describe how you developed them. Present any emission test data you used for this.

*Please note, separate DF calculations and DF(s) for EPA certificate and California EO may be required, due to EPA/CARB regulations differ in the following:*

- (a) definition of DFs (EPA: additive for without aftertreatment and multiplicative for with aftertreatment; CARB: multiplicative in all cases); and*
- (b) possible different useful lives (EPA: minimum 10,000 km/1,000 hours/5 years, alternatives may be allowed. CARB: 10000 km in all cases).*

Information to be Included:

- List exhaust DFs for HC, NO<sub>x</sub>, CO.
- List permeation DFs of HC for fuel tanks and fuel hoses separately.
- Provide all emission test data that are used for developing the above DFs.
- Describe how the DFs were developed, if an alternative durability procedure is applied.

Advice for Submittal:

- **Obtain advanced approvals from EPA/CARB for any alternative durability procedure.**
- Reference appropriate DSS section(s) for information required above.
- Provide any general information in Part A.

**(n) Adjustable Operating Parameters and Other Adjustments (Ref: 40 CFR §1051.205(n))**

Describe all adjustable operating parameters and other adjustments.

Information to be Included (Ref: 40 CFR §1051.115 (c) and (d)):

- The nominal or recommended setting.
- The intended physically adjustable range, including production tolerances if they affect the range.
- The limits or stops used to establish adjustable ranges.
- The air-fuel ratios or jet chart specified in 40 CFR §1051.115(d).

Advice for Submittal:

- Organize the above required information by a table, such as below, when appropriate:

<b>Adjustable Parameters</b>	<b>Nominal Setting</b>	<b>Adjustable Range</b>	<b>Tamper Resistance Method</b>	<b>Approval Reference</b>

- You may reference a complete breakdown of adjustable operating parameters for a model year in the Part A - Common Information and place reference # number here.

**(o) Statement of Compliance – Test Vehicles (Ref: 40 CFR §1051.205(o))**

State that you operated your test vehicles or engines according to the specified procedures and test parameters using the fuels described in the application to show you meet the requirements of this part. *Separate statements are required referencing EPA and CARB procedures and requirements respectively.*

Advice for Submittal:

- Provide the required compliance statement in your cover letter.

**(p) Statement of Compliance – Engine Family (Ref: 40 CFR §1051.205(p))**

State unconditionally that all the vehicles (and/or engines) in the engine family comply with the requirements of this part, other referenced parts, and the Clean Air Act. *Separate statements are required referencing EPA and CARB regulations, test procedures and related requirements respectively.*

Advice for Submittal:



- Provide the required compliance statement in your cover letter.

**(q) Projected U.S./California Sales (Ref: 40 CFR §1051.205(q))**

Include estimates of U.S.-directed production volumes

Information to be Included:

- A list of projected US sales for each model of the engine family.
- Organize the data in a table, such as:

Model Name	U.S Sales Number			Note
	Calif.	49 States	Total	

- Note competition model sales, if included in the FEL.
- Projected sales may be considered confidential. If you wish confidential treatment of these projected sales, submit the sales information only in the CBI copy of your application.

**(r) Emission Sampling Method (Ref: 40 CFR §1051.205(r))**

Upon request by the EPA/CARB, manufacturers must show us how to modify your production (customer) vehicles to measure emissions in the field (see 40 CFR §1051.115 (b)).

**(s) Other Information (40 CFR §1051.205(s))**

Information to be Included:

- Phase-in plan for the **first model year** of the phase-in (*Not applicable to CARB.*)
- Copy of your application fee filing form (*Not applicable to CARB.*)
- Copy of a CARB EO, if apply for “California-only” certificate (*Not applicable to CARB.*)
- Any additional information that you may consider to help us to evaluate your application

Advice for Submittal

- Organize the phase-in sales data in such a way to show projected compliance with any applicable implementation schedules or minimum sales requirements. The plan should indicate which EFs are part of the phase-in requirements and which are not. The plan should also include the rate of compliance and a determination that the phase-in implementation schedule will be met.
- Indicate competition vehicle sales involved in the FELs, if any.
- Place the phase-in compliance plan in Part A.
- Projected sales may be considered confidential. If you wish confidential treatment of these projected sales, submit an additional CBI copy of your application with the sales figures, and place a reference to the CBI in the public copy.

**5. Averaging, Banking, and Trading Requirements (40 CFR §1051.701-735), if Required**

You need to provide information requested in this section only if you chose to take corporate emissions averaging, and/or banking, and/or trading options to certify to a manufacturer specified engine Family Emission Limit (FEL) based on 40 CFR §1051.701-735, or CARB designated standards.

*CARB regulations allow averaging, but not banking or trading. The use of banked or purchased credits are not allowed in a CARB averaging compliance plan. CARB sales, not 50-state sales, must be used in the CARB averaging compliance plan. A separate CARB compliance plan is required.*

Information to be included:

- A statement of your belief that your corporate average emission levels will comply with the applicable standards.
- Detailed calculations of average emission levels and credits balance based on projected production (see sample format attached).

Advice for Submittal and record keeping:

- You may reference your statement and a complete breakdown of ABT plan for a model year in the Part A for common information and place reference # number here.
- Projected sales may be considered confidential. If you wish confidential treatment of these projected sales, submit an additional CBI copy of your application with the sales figures, and place a reference to the CBI in the public copy.
- You are required to maintain organized paper records containing at least the following for **three years** from the due date for the end-of-model year report:
  - Model years and EFs involved.
  - Family Emission Limits (FEL)/CARB designated standards.
  - Useful life for individual EFs.
  - Projected U.S.-directed production volume for the model year.
  - Projected California-directed production volume for the model year.
  - Actual U.S.-directed production volume for the model year.
  - Actual California-directed production volume for the model year.
- You are required to submit detailed calculations of the average emission levels and credits balance based on actual production within 120 days of the end of your model year.

## 6. Additional California Information (Reserved)

Attachments:

1. DSS Template
2. Sample of ABT forms
3. Sample Application (to be developed after receiving feedback from manufacturers for this draft)

## Data Summary Sheet (DSS)

**DSS.1 General Information (Model Year: \_\_\_\_\_ )**

<b>Engine Family Name:</b>	Application Type: <input type="checkbox"/> New <input type="checkbox"/> Correction <input type="checkbox"/> Running Change
Manufacturer: SVM: <input type="checkbox"/> Yes <input type="checkbox"/> No	Sales Area: <input type="checkbox"/> 50 States <input type="checkbox"/> 49 States <input type="checkbox"/> California Only

**DSS.2: Emission Standards and Certification Levels (Emissions with DFs)**

Exhaust Emissions (Unit: <input type="checkbox"/> g/km <input type="checkbox"/> g/bhp-hr <input type="checkbox"/> g/kW-hr				Permeation HC Emissions (Unit: (g/m <sup>2</sup> /day)		Vehicle Evaporative Emissions (Unit: g/test) (CARB only)		
Air Pollutant	HC	NOx	HC+NOx	CO	Fuel Tank	Fuel Hoses	Diurnal	Hot Soak
Certification Level								
Emission Standard								
Family Emission Limit								

**DSS.3 Engine Family Description**

Category: <input type="checkbox"/> ATV.A <input type="checkbox"/> ATV.B <input type="checkbox"/> OFMC <input type="checkbox"/> ENG <input type="checkbox"/> UTV	Fuel Type: <input type="checkbox"/> Gasoline <input type="checkbox"/> LPG <input type="checkbox"/> NG <input type="checkbox"/> Other:
Engine Type: <input type="checkbox"/> Reciprocating <input type="checkbox"/> Rotary <input type="checkbox"/> Turbine <input type="checkbox"/> Other:	Engine Cooling Media: <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Other:
Combustion Cycle: <input type="checkbox"/> 4-Stroke <input type="checkbox"/> 2-Stroke <input type="checkbox"/> Other:	Useful Life:
Cylinder Arrangement: <input type="checkbox"/> Inline <input type="checkbox"/> Vee <input type="checkbox"/> Flat <input type="checkbox"/> Other:	New Technology: <input type="checkbox"/> No <input type="checkbox"/> Yes, technology explanation:
Number of Cylinders: Valves per Cylinder:	

**DSS.4: Exhaust Emission Control Information (use SAE J1930 technology abbreviations)**

Catalytic Converter: <input type="checkbox"/> No <input type="checkbox"/> Yes: Number of catalytic converter (s): Catalyst Configuration: <input type="checkbox"/> Parallel (P) <input type="checkbox"/> Series (S) <input type="checkbox"/> P+S Catalyst Type: <input type="checkbox"/> Oxidation (OC) <input type="checkbox"/> Three-way (TWC) <input type="checkbox"/> OC+TWC
Exhaust Gas Recirculation (EGR): <input type="checkbox"/> No <input type="checkbox"/> Yes: EGR Type:
Electronic Controls: <input type="checkbox"/> ECM <input type="checkbox"/> Other:
Air Injection: <input type="checkbox"/> PAIR <input type="checkbox"/> AIR <input type="checkbox"/> O2S <input type="checkbox"/> HO2S <input type="checkbox"/> Other:
Fuel System: <input type="checkbox"/> TBI <input type="checkbox"/> MFI <input type="checkbox"/> SFI <input type="checkbox"/> DGI <input type="checkbox"/> Carburetor <input type="checkbox"/> Other:
Method of Air Aspiration: <input type="checkbox"/> Natural <input type="checkbox"/> SC <input type="checkbox"/> TC <input type="checkbox"/> CAC <input type="checkbox"/> SAA <input type="checkbox"/> TAA

**DSS.5A: Exhaust Emission Data Vehicle/Engine (EDV-1) and Test Data**

EDV ID (VIN): Useful Life: <input type="checkbox"/> New <input type="checkbox"/> Carryover from EF:	Test Date	Test Type	Emission Test Results <input type="checkbox"/> g/km <input type="checkbox"/> g/bhr-hr <input type="checkbox"/> g/kW-hr				Assigned DF: <input type="checkbox"/> N/A <input type="checkbox"/> EPA SVM <input type="checkbox"/> ARB SVM
			HC	NOx	HC+NOx	CO	
Configuration:							
Model Name:						Test Fuel: <input type="checkbox"/> Indolene <input type="checkbox"/> California Phase 2	
Rated Power:						Emission control device:	
Displacement (cc):						DDV information:	
Transmission:							
N/V Ratio:						Manufacturer notes:	
Curb Mass:	EPA	DF					
EIM:		Cert level					
First Test at: Unit: <input type="checkbox"/> km <input type="checkbox"/> hr	CARB	DF					
Last Test at: Unit: <input type="checkbox"/> km <input type="checkbox"/> hr		Cert level					

**DSS.5B: Exhaust Emission Data Vehicle/Engine (Optional EDV-2) and Test Data**

<b>EDV ID (VIN):</b> Useful Life: <input type="checkbox"/> New <input type="checkbox"/> Carryover from EF:	<b>Test Date</b>	<b>Test Type</b>	<b>Emission Test Results</b> <input type="checkbox"/> g/km <input type="checkbox"/> g/bhr-hr <input type="checkbox"/> g/kw-hr				Assigned DF: <input type="checkbox"/> N/A <input type="checkbox"/> EPA SVM <input type="checkbox"/> ARB SVM
<b>Configuration:</b>			<b>HC</b>	<b>NOx</b>	<b>HC+NOx</b>	<b>CO</b>	Test Fuel: <input type="checkbox"/> Indolene <input type="checkbox"/> California Phase 2
<b>Model Name:</b>						<b>Emission Control device:</b>	
<b>Rated Power:</b>						<b>DDV information:</b>	
<b>Displacement (cc):</b>							
<b>Transmission:</b>						<b>Manufacturer notes:</b>	
<b>N/V Ratio:</b>							
<b>Curb Mass:</b>	<b>EPA</b>	<b>DF</b>					
<b>EIM:</b>		<b>Cert level</b>					
<b>First Test at:</b> Unit: <input type="checkbox"/> km <input type="checkbox"/> hr	<b>CARB</b>	<b>DF</b>					
<b>Last Test at:</b> Unit: <input type="checkbox"/> km <input type="checkbox"/> hr		<b>Cert level</b>					

**DSS.6: Permeation Emissions Control/Test Data** (Evap. Family name if any: \_\_\_\_\_ )

Certify by Emission Testing						
Equipment	Material	Thickness (mm)	Total Inside Area (m <sup>2</sup> )	Test Data (g/m <sup>2</sup> /day) <input type="checkbox"/> Evap Perm Test Type: <input type="checkbox"/> Carryover, from MY: EF:	DF (g/m <sup>2</sup> /day) <input type="checkbox"/> New <input type="checkbox"/> EPA DF for SVM <input type="checkbox"/> Carryover, MY: EF:	Emissions with DF (g/m <sup>2</sup> /day)
Fuel Tank						
Fuel line						
Manufacturer Notes:						
Certify-by-Design						
Fuel Tank	Fuel tank permeability control technology applied is 40 CFR §1051.245, Table 1, control technology <input type="checkbox"/> (i) <input type="checkbox"/> (ii)					
Fuel line	Fuel lines permeability control technology applied is 40 CFR §1051.245, Table 2, control technology: <input type="checkbox"/> (i) <input type="checkbox"/> (ii)					

**DSS.7: Models Covered**

Make	Model	Engine Code	Vehicle Category	Bore/Stroke (mm/mm)	Displacement (cc)	Rated Power (hp)	Rated Toque (nt-m)	Rated Speed (rpm)	Curb Mass (kg)	Trans. (M5, A3, etc.)	Sale Areas <sup>1</sup>
California ATV Specification (Category ATV.A) ( use Yes or No to answer)											
Model	50 " or Less in Width?	4 Low Pressure Tires?	Seat Straddled by Operator?	No Passenger?	Handlebar?	Max Payload 350 lb?	CARB ATV Certification?				

<sup>1</sup> Specify if: (1) California only, (2) 49-state, or (3) 50-state

## - Draft - Company Averaging, Banking and Trading Report

For: EPA  CARB  (check one) (Page \_\_ of \_\_)

<b>Model Year Name:</b>	<b>ABT Category Type:</b> HC+NOx <input type="checkbox"/> HC <input type="checkbox"/> NOx <input type="checkbox"/> <input type="checkbox"/> HMC <input type="checkbox"/> OFMC <input type="checkbox"/> NMHC+NOx <input type="checkbox"/> ANV (Engine) CO	<b>ABT Emission Unit:</b> <input type="checkbox"/> E/km <input type="checkbox"/> By evaporative <input type="checkbox"/> g/bhp-hr <input type="checkbox"/> g/m <sup>2</sup> /day
<b>Report Type:</b> <input type="checkbox"/> Preliminary <input type="checkbox"/> End of MY <b>Report Date:</b> _____	<b>Manufacturer Notes:</b> <input type="checkbox"/> OFMC+ATV	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Engine Family Name	Family Emission Limit	Useful Life (Unit: )	Family Production Units	Model Name	Rated Power	Model Production Units	CARB Report only		Credit Used For (A, B, or T)
							Designated HC (g/km)	Designated HC+NOx (g/bhp-hr)	

<b>Emission Standard:</b>  Averaging Emission Level = $[\sum(2) \times (3) \times (4)] / [\sum(3) \times (4)] =$  Credit (EPA only) =	<b>Company credit balance calculation: (not applicable to CARB)</b>
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*Note: Separate reports and calculations are required for EPA and CARB due to different standards (e.g., HC or HC+NOx), different units (g/bhp-hr or g/kW-hr), different U.S. and California sales, different useful lives, no credits use allowed for CARB compliance. For CARB, OFMC and chassis-certified ATV can be in the same averaging set because they meet the same g/km standards.)*

## Questions and Answers

For ATV/OFMC Workshop July 21, 2004

On November 8, 2002, the U.S. Environmental Protection Agency (EPA) published its final rules on the control of emissions from 2006 and later model year off-highway motorcycles and all-terrain vehicles. (Ref: 40 CFR §1051, 1065 and 1068). The Certification and Compliance Division (CCD) within EPA’s Office of Transportation and Air Quality is charged to implement and administer these new regulations to ensure that vehicles and engines subject to these rules meet the certification and compliance requirements throughout their useful lives.

On February 11, 2004, the CCD notified manufacturers (Ref: CCD-04-04) of the new certification and compliance program and invited manufacturers to submit questions that would be answered in an upcoming workshop for the new program. We have received numerous questions in writing from the Motorcycle Industry Council (MIC). Combined with general concerns or questions received from individuals, we are providing answers to those questions in the following document.

### General Questions

#### 1. Are these new regulations applicable to me?

If you manufacture or import 2006 and later model year off-highway motorcycles (OFMC) and all-terrain vehicles (ATV), or engines (ENG) installed in ATVs or OFMCs, these new regulations are applicable to you.

Please note, any requirement that applies to ATVs is also applicable to off-road utility vehicles (UTV) that have a displacement less than or equal to 1,000 cc, maximum brake power less than or equal to 30kW and maximum vehicle speed greater than or equal to 25 mph.

The following table may assist you in locating the applicable certification regulations to your products:

**Classes of Vehicles/Engines vs. General Certification Regulations**

Classes of Vehicles/Engines (EPA Topic Contact List: <a href="http://www.epa.gov/otaq/oms-cont.htm">www.epa.gov/otaq/oms-cont.htm</a> )	General Certification Regulations (Accessible from <a href="http://www.gpoaccess.gov/ecfr/">www.gpoaccess.gov/ecfr/</a> )
Recreational Vehicles (ATVs, Off-highway Motorcycles & Snowmobiles) and Engines (> 5,000 rpm)	40 CFR Part 1051
Highway Motorcycles	40 CFR Part 86, Subpart E
Small Non-road Spark Ignition Engines (< 19 kW)	40 CFR Part 90
Large Non-road Spark Ignition Engines (> 19 kW)	40 CFR Part 1048
Light-duty Vehicles and Trucks	40 CFR Part 86, Subpart S
Heavy-duty Highway Engines	40 CFR Part 86, Subpart A
Nonroad Compression-Ignition (CI) Engines	40 CFR Part 89
Heavy-Duty Vehicle Evap	40 CFR Part 86, Subpart M

Marine SI Outboard/PWC	40 CFR Part 91
Marine CI > 37 kW	40 CFR Part 94
Marine SI Inboard/Stemdrive	40 CFR Part 1045
Locomotives and Locomotive Engines	40 CFR Part 92

Reference:

- For definitions of Model Year, OFMC, ATV, etc. see 40 CFR §1051.801
- For exemptions, see 40 CFR [§1051.5](#)

## 2. Where can I find the applicable new regulation for ATV/OFMC certification and compliance?

The United States federal regulations are codified in the Code of Federal Regulations (CFR). Title 40 of CFR contains environmental related regulations. The new regulations applicable to the new ATVs and OFMCs emissions control program are:

40CFR§1051: Control of Emissions from Recreational Engines and vehicles

40CFR§1065: Test procedures and Equipment

40CFR§1068: General Compliance provisions for Non-road Programs

You may view or download these regulations online via the EPA's web site:

<http://www.epa.gov/epahome/rules.html#codified>. Hard copies of the above regulations may be ordered by calling 202-512-1800.

## 3. Which laboratories perform the EPA tests?

A list of laboratories that have the capabilities to conduct some or all of the required exhaust and evaporative emission testing is supplied by and periodically updated by the EPA. The EPA does not endorse or approve test laboratories, or vouch for the list's completeness. The lab list may be viewed at: [www.epa.gov/otaq/consumer/lablist.pdf](http://www.epa.gov/otaq/consumer/lablist.pdf).

## 4. Am I qualifying as a “Small Volume Manufacturer”?

There are two ways a manufacturer can qualify as a “small volume manufacturer (SVM)”:

- 1) By definition (Ref: §1051.801): For motorcycles and ATVs, a manufacturer that sold motorcycles or ATVs before 2003 and had annual U.S.-directed production of no more than 5,000 off-road motorcycles and ATVs (combined number) in 2002 and all earlier calendar years. For manufacturers owned by a parent company, the limit applies to the production of the parent company and all of its subsidiaries.
- 2) By the EPA's designation: (Ref: §1051.635)  
If a manufacturer belongs to one of the following Small Business categories of the Small Business Administration (SBA), the EPA may designate the manufacturer as a SVM **upon request**.

**Ref: Federal Register, Vol.67, No 217, 11/8/2002, Table XI  
C-1: Primary SBA Small Business Categories**

<b>Industry</b>	<b>Employees</b>
Motorcycle and Motorcycle Parts Manufacturer	<500
ATV Manufacturer	<500
Independent Commercial Imports of Vehicles and Parts	<100
Non-road SI Engines	<1,000
Internal Combustion Engines	<1,000

**Advanced EPA approval is required** before taking any action to use SVM provisions in the regulations.

When you apply for a new model year certificate under SVM status, the EPA may ask you to provide sales numbers from the previous model years. The EPA’s computer system will also record and verify a manufacturer’s SVM status for each new model year.

**5. Where can I find the EPA guidance?**

The EPA Office of Transportation and Air Quality issues guidance letters (Dear Manufacture Letter or Advisory Circular previously) to manufacturers. These letters provide information, guidance and instructions to the regulated automotive industry on specific compliance topics and issues. All guidance letters issued by the Agency may be viewed on our Web site at: <http://www.epa.gov/otaq/cert/dearmfr/dearmfr.htm>. You may submit your email address to [omscfeis@epa.gov](mailto:omscfeis@epa.gov) if you are interested in receiving the agency’s guidance letters.

**The Motorcycle Industry Council (MIC) Comments and Questions**

(Ref: Letter from Pamela Amette of MIC to EPA, 4/13/04)

- 6. **MIC:** For plastic tank permeation testing, as the regulation specifies, the outlets of the tank must be sealed using non-permeable fittings. Therefore, the production gaskets, petcock and fill cap are not considered to be part of the tank for the purposes of this test.

**EPA: The fill cap is considered to be part of the fuel tank and would have to be used during permeation testing. The holes that can be sealed with non-permeable fittings are those that would normally be open on a production vehicle (vent hole, hole for fuel line (petcock)).**

- 7. **MIC:** For the metal tank gasket permeation requirements, we request that EPA confirm data demonstrating that a metal tank (including gaskets) meets the 1.5g/tank m2/day standard is acceptable. We propose that EPA accept permeation data for the gaskets applied to the total tank surface area to meet this demonstration requirement, even if the gasket material does not meet the requirements of ASTM D 814-95 and are larger than 1000 mm<sup>2</sup>.



We believe that these changes are appropriate and remain consistent with the regulatory intent.

**EPA: No. The 1000 mm<sup>2</sup> number was considered to be worst case for a design specification and is not meant to define the standard. Manufacturers would have the option of performing permeation testing on their tanks rather than using this design-based certification option.**

8. **MIC:** MIC also requests clarification that the “fuel line” as specified in the permeation test procedures means the fuel lines which contain liquid fuel, and any hoses containing only vapor (including vent hoses) do not need to comply with these permeation requirements.

**EPA: Fuel lines with saturated vapor would see the same permeation rate as those filled with liquid.**

9. **MIC:** MIC requests written guidelines clarifying EPA’s policy on adjustable parameters. We understand that EPA has already judged as follows:

- Manufacturers do not need to ensure compliance in a mis-configuration (such as low altitude setting in high altitude or vice-versa).
- Manufacturers do not need to ensure compliance in intermediate settings unless it is physically adjustable (without anti-tampering measures) or recommended by the manufacturer.

**EPA: MIC is correct in their interpretation for both of the scenarios above.**

10. **MIC:** MIC requests a response to our letter of February 23, 2004 to Mr. Alan Stout regarding alternative test procedures.

**EPA: We believe that we have already answered the question of alternative test procedures and raw gas sampling. We do not believe that section 1065 needs to be changed. Raw gas sampling can be used as long as manufacturers can provide data that gas sampling results are equivalent to data collected using our test procedures.**

11. **MIC:** MIC requests verification from EPA that only the exhaust emissions standards must be listed on the VECI label as 1051.135(c)(12) requires for “the engine”.

**EPA: As you may notice, the proposed tech amendment has revised 1051.135 to require evaporative standards on the VECI label.**

12. **MIC:** MIC will request clarification of EPA’s policy regarding maintenance (non-emissions related, non-critical emissions related and critical emissions related). Additional details regarding this clarification will be provided later.

**EPA: The new Tier 4 regulations for Nonroad Diesel Engines to be published in June of 2004, have made clarifications to §1051.125 with regards to maintenance.**

13. **MIC:** As MIC previously commented, the NER equation should be separated for different standard classes in order to ensure that they are equitable and not misleading. We look forward to working with EPA to resolve this issue.

**EPA: The NER equation has been modified per MIC's suggestions for ATV's over 225 cc and under 225 cc that are certified to the J1088 cycle. The NER equation has also been adjusted for ATV's under 100cc.**

14. **MIC:** Please verify whether manufacturers will be able to download a report when the certification application is submitted.

**EPA: Yes, this function has been considered and will be built in the Agency's new certification and compliance computer system.**

# Technical Amendments

- EPA will soon propose technical amendments
  - Update test procedures in 40 CFR part 1065
  - Define characteristics for evaporative families
  - Revise and clarify permeation procedures
  - Revise equations for Normalized Emission Rates
  - Reduce useful life for youth-model ATVs and Off-highway motorcycles
  - Allow interim raw-gas sampling for ATVs
  - Provide for adjusted value for maximum test speed
  - Revise regulatory text for consistency across programs
- Public workshop planned for September 8-9
- Comment period ends October 15
- Final rule by Spring 2005

OFMC & ATV  
E-Application / Database  
Integrated Certification Process  
Modeling

EPA and CARB

July 21, 2004

# Overview

- New OFMC/ATV e-application and database are integral part of EPA/CARB certification application submittal procedures
- New harmonized format: 2006 Model Year OFMC/ATV certification application
- Integrated into the new EPA's VERIFY System and CARB's certification system
- Will not change existing rules & regulations

# Simple Application Format

- Simplified two part application format
- Part 1 - general engine family information
- Part 2 - electronic engine family specific emissions database
- Two categories for Part 1 & Part 2
  - non-confidential (public) information (FOIA)
  - confidential business information (CBI)

# The GOAL

- Consistent harmonized application format
- Accurate information submittal
- Allows for faster application review
- Reduce response and turn around time
- Several submittal methods
- Automatic/Self generation of the EPA's Certificate of Conformity is possible

# Project Timeline

- **Integrated Process Model** – 7/10/2004 completed
- **Data Modeling** – August 31, 2004 ?
- **Data Requirements** – September 30, 2004 ?
- **Beta version** - November 15, 2004 ?
- **Version 1** - December, 2004 ?



# Mfr's Role?

- Understand manufacturer's responsibilities
- Understand the integrated process model
- Understand the data requirements
- Understand the data modeling

# How to Help?

- Involved in defining the data fields
- Involved in data submittal procedures
- Involved in testing the submittal process
- Involved in testing the front-end product

# Differences in Models

## EPA

- *Certification Fees*
- *Evaporative standard*
- *Exhaust standard*
- *Categories*
- *PLT, warranty*
- *ABT*
- *Compliance Testing*

## CARB

- *No cert fees*
- *No Evap. Standard*
- *Different exhaust standard*
- *Different categories*
- *No PLT / no warranty*
- *Averaging/banking only*
- *Confirmatory Testing*

# Process Requirements

<i>Exh. Phase-in</i>	<i>Mfr Common</i>	Warranty
<i>Evap. Phase-in</i>	<i>EF Specific</i>	Log-in Security
<i>DF / Durability</i>	<i>ABT</i>	Cert Fees
<i>Exhaust *</i>	<i>PLT</i>	Mfr Contact
<i>Evaporative</i>	<i>Data Security</i>	Info Handling
<i>Confirmatory</i>	<i>FOIA pdf / other</i>	FOIA /CBI
<i>Running Change</i>	<i>CBI pdf / other</i>	Data Storage
<i>Field Fix</i>	<i>Compliance</i>	Etc.

# Data Requirement

(Exhaust\* as an example from previous page)

ExhRaw**	EdvConfig	TestFacility
ExhCert	EdvModel	TestFuel
ExhDF	EdvEIM	TestDistance/Hrs
ExhStd	EdvCurbWeight	TestType
ExhMileHRs	EdvID	TestProcedure
ExhUsefulLife	C/OData	TestID
ExhUnits	AssignDF?	TestDate
ExhFEL	ECSInformation	Etc.

# Data Field

(ExhRaw\*\* as an example from previous page)

<i>Field name</i>	<i>Field property</i>	<i>Field description</i>
HCType	Character 6 thc, nmhc, nmog	Type of hydrocarbon
ExhRawHC (THC)	Numeric 7.4 0.0001~99.9999	Raw HC emissions
ExhRawCO		
ExhRawNOx		

# System Architecture

## Interactive Web-Based Data Collection

- **Requirements**

- Internet-based
- No software to download

- **Planned Architecture**

- Web browser
- Web forms (which will allow xml submittal files to be stored on desktops, until ready for EPA process)

# Proposed System Architecture for VERIFY



# System Architecture: Batch-Mode Web-Based Data Collection

- **Requirements**

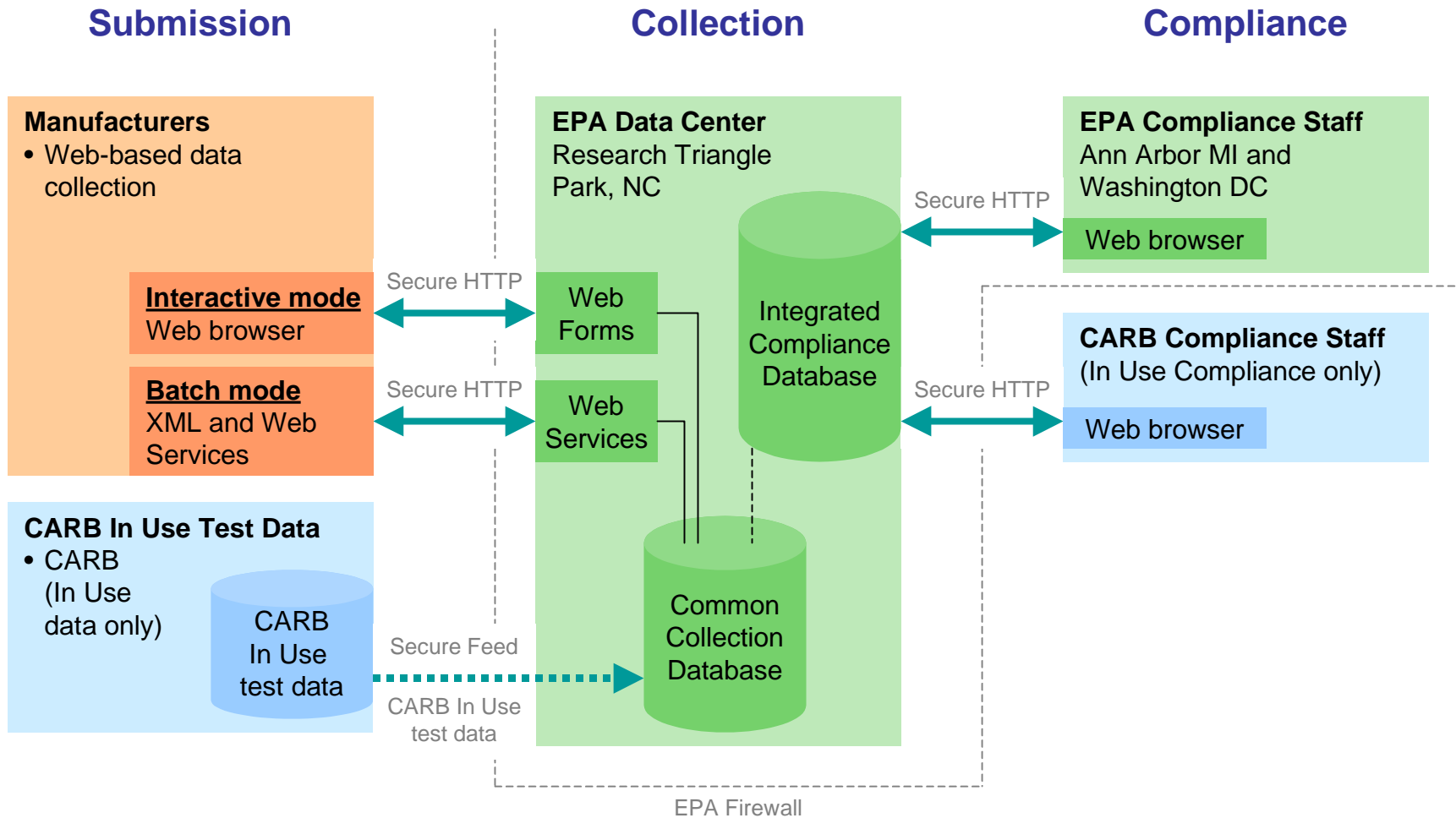
- Internet-based
- No software to download
- XML file must be developed by submitter
- Gives data submitters two options:
  - Option 1: User interface to submit XML batch files
  - Option 2: Machine-to-machine interface to submit XML batch files utilizing web services

- **Planned Architecture**

- XML data standards
- Web services hosted by EPA to support data XML batch file submission:
  - Option 1 provides a simple web form to submit an XML batch file
  - Option 2 lets manufacturers implement their own software to interact with web services

# Planned System Architecture

## Manufacturer and ARB Interfaces



# System Architecture Prototype

- **EPA has developed a prototype to evaluate selected aspects of the planned architecture:**
  - Interactive web-based data collection
  - Batch-mode (XML) data collection
  - Data accessibility
  - Security
  - Other areas

# Develop Submittal Infrastructure (CDX)

## **EPA has contracted for the development of VERIFY infrastructure on EPA's Central Data Exchange (CDX)**

- EPA's CDX is the point of entry on the Environmental Information Exchange Network (Exchange Network) for environmental data exchanges to the Agency.
- CDX provides the capability for submitters to access their data through the use of web services.
- You can find more information about CDX at <http://www.epa.gov/cdx/>