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U.S. EPA MARINE ENGINE

CERTIFICATION GUIDANCE

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Engine Compliance Programs Group
U.S. Environmental Protection Agency
Mail Code 6403J
Washington DC 20460

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Introduction

This document provides guidance for preparing, submitting, and revising certification applications for new Marine Spark Ignition engines. The regulations that govern these engines are found at 40 CFR 91.

I. Pre-application

A. Obtaining a Manufacturer Code : (one time only)

EPA requests that engine manufacturers notify EPA if they intend to manufacture marine engines that will require EPA certification. Such notification does not obligate a manufacturer to certify engines.

If a manufacturer has not previously certified mobile source engines or vehicles with EPA, EPA will assign a manufacturer code, consisting of three letters or a combination of letter(s) and number(s), that will be a permanent code included in the manufacturer's engine family designations.

Manufacturers who already have codes assigned from other EPA mobile source programs must still notify EPA to change their status to include marine engines.

B. Contact Persons

The manufacturer should assign a primary contact person to work with EPA. All calls and mailings, including the certificate of conformity, will be directed to the manufacturer's primary contact unless otherwise directed by the manufacturer. EPA prefers the manufacturer's primary contact be in the United States.

EPA will assign a primary EPA contact person for each manufacturer. Information for the EPA primary contact person may be mailed to (note: express mail to this address will be returned to sender):

Anne Fredo
Certification Team Leader
Engine Compliance Programs Group
U.S. Environmental Protection Agency
401 M Street, S.W., Mail Code 6403-J
Washington, DC 20460
Phone: 202-233-9263
FAX: 202-233-9596

For Express Mail Deliveries and Office Visits Only (regular U.S. mail delivered to this address will be returned to sender):

U.S. Environmental Protection Agency
501 3rd St NW
Washington, DC 20001
Att.: Anne Fredo

C. Model Year Preview

EPA requests that each manufacturer provide a preview of its certification plans each model year. The preview should include an estimate of the number of engine families to be certified, when production is planned to begin, and any unusual or special circumstances that may impact certification. A written submission in lieu of a meeting is acceptable.

The model year preview is the best time to notify EPA of any advance approvals that may be needed for variations from the regulations in test procedure, equipment or facilities. Failure to request advance approval in a timely manner is likely to result in a delay in certificate issuance, as discussed in Section IV of this guidance document.

II. Application

A manufacturer can apply for a certificate of conformity by following the steps listed below:

The EPA application for a certificate of conformity consists of two parts: 1) a completed marine engine certification application form and 2) a signed statement of compliance with federal regulations. Samples of the application form and instructions are included in Appendix A. A sample statement of compliance is included in Appendix B. Upon completion, the application should be sent to the EPA certification team leader. Paper copies and electronic versions are equally acceptable, currently only paper forms are available (the electronic forms will be handed out at the Marine Engine Certification Application Workshop). Applications submitted electronically will undergo an expedited review process since the data entry step is eliminated.

EPA will be using the standardized engine family naming convention which is described in this document in Appendix C. The engine family name will appear on the engine information label and in the certificate of conformity. The engine family name should be used in all correspondence to EPA concerning that family. EPA requires that engines be certified annually and that the engine family name be changed every year regardless of carryover status.

Subpart B of 40 CFR 91 lists certification-related information that is required to be maintained by the manufacturer.

III. Confidential Business Information (CBI)

Please note that the manufacturer must clearly indicate any information included in the application that it wishes to claim as confidential and the time period for which confidentiality is to be maintained. The manufacturer should identify the specific answers that it claims as confidential by listing these answers (by question number) in the cover letter to the application or/and by stamping or marking the answers as confidential. If the manufacturer wishes this information to remain confidential until the engine family is introduced into commerce, the manufacturer must specifically make such a request, and must provide the anticipated introduction date. Examples of language for such a request are included in Appendix B. For paper submissions, EPA requests that the manufacturer submit an additional copy of its application in which all information claimed as confidential has been deleted. Please refer to Appendix D for more information on CBI. For electronic applications please refer to instructions in Appendix A describing how to designate responses as CBI.

IV. EPA Review of Application

EPA will make every effort to review an application within 30 calendar days of receipt of a completed application. As part of the review, EPA will determine whether to request additional information (audit) and/or to perform confirmatory testing. Manufacturers should plan to keep the test engine in its certification configuration until the end of production.

If a review is delayed due to unforeseen circumstances, the EPA primary contact will call the manufacturer's primary contact. The EPA primary contact will also call with any questions that arise during application review. If the EPA primary contact cannot reach the manufacturer's primary contact by telephone within a reasonable amount of time, the question will be submitted in writing.

V. Certificate of Conformity

A certificate of conformity will be issued for an engine family once EPA determines that the regulatory requirements are met. A sample certificate is included in Appendix E. The effective date listed on the certificate is the date that engines covered by the certificate can be introduced into commerce. The certificate ceases to be valid at the end of the production period or December 31 of the calendar year for which the model year is named, whichever date is sooner. In most cases, the effective date of the certificate will be the date that the certificate is signed (the issue date). However, in cases in which a manufacturer requests unusually early certification, the effective date would be

January 2 of the first calendar year in which the engine family can be introduced into commerce. For example, if a certificate for the 1999 Model Year is issued on October 31, 1997, the effective date of the certificate would be January 2, 1998 at the earliest.

The certificate of conformity is signed by the Director of the Engine Programs and Compliance Division who is delegated with signature authority by the EPA Administrator. A certificate is not valid without this signature. The original signed certificate will be sent to the manufacturer's primary contact at the address provided by the manufacturer in the application for that engine family.

VI. Amending an Application

After the application has been submitted, the manufacturer may need to amend it. EPA requires a submission of amendments in order to have documentation that production engines are built in accordance with the certificate and to monitor potential changes in emissions from production engines. Amendments which must be reported are those which involve a product line change that may have an effect on emissions and/or those which change information reported in the application. As described at 40 CFR 91.122, manufacturers may report amendments to an application either in advance or concurrently with making a change in production.

A manufacturer need only submit a brief description and revised application pages if an amendment merely corrects an error or omission in an application or changes a part number and does not involve a change which may affect emissions.

If the running change is expected to increase emissions or would change the test engine selection, the manufacturer is required to either submit test data showing compliance after incorporating the running change, or to submit an engineering evaluation as to why engines will remain in compliance with all applicable standards and regulations. If the change is not expected to increase emissions, the manufacturer should submit the reason for that conclusion. EPA may require the manufacturer to perform tests on an engine representing the engine to be changed or added.

Changes that may affect the durability of the emission control system, including but not limited to changes that may affect catalyst durability, must also be reported. EPA considers emission-related running changes to be amendments which add an engine model, potentially affect emissions or durability, or affect emission-related components.

Many on-highway applicants have followed a practice of identifying successive amendments with a number which includes the family designation and model year of the engines being affected. (For example, the number of the first running change in the 1998 model year for family WXYXM0062IA1 might be 98-0062IA1-01.) This practice has proven to be quite useful and is highly recommended. Running changes which result in changes or additions to information in the

original application should be submitted using the same format as for application, but with the unaltered information left blank.

The concurrent notification procedure described at 40 CFR 91.122 (e) is similar to the optional notification procedure used by on-highway manufacturers. While this procedure does not eliminate EPA review, it does allow manufacturers to make changes without prior EPA review. However, if EPA determines that affected engines do not meet applicable requirements, EPA will notify the manufacturer that the running change is disapproved and to cease production of the affected engines. See instructions in Appendix A for submitting an electronic copy of a running change.

VII. Engine Family Name Carryover

To reflect its statutory obligation to issue annual certificates of conformity, and to be consistent with other EPA mobile source certification programs, EPA will be granting certificates for each model year using engine family names that identify that unique model year. These family names should be provided in the manufacturers' applications for certification. It is EPA's preference that these engine family names be updated on engine labels each year. However, EPA will allow the carryover of the original (old) engine family name on engine labels from for carryover families.

VIII. Data Carryover

Under 40 CFR 91.118(c), the engine manufacturer may request to use test data from a previous EPA model year to represent a new EPA model year. To obtain EPA approval for this carryover status, any differences between the previous and new model year engines must be shown not to cause the engine family to exceed the emission standards. If a running change results in a new worst case engine, then the data reported in the carryover application must reflect the new worst case configuration.

IX. Labeling

All certified engines must be labeled with an Emission Control Information Label. The Emission Control Information Label contents can be found under 40 CFR 91.113(c). For both new and existing technology engines, the label must contain all information listed in the regulations with the exception of information listed under 91.113(c)(3), (4), and (5) which may appear in the owners manual instead if there is insufficient room on the label. Also for new and existing technology engines, the date of manufacture may be put on the Emission Control Information Label, be stamped on the engine or put on a supplemental label next to the Emission Control Information Label. For existing

technology engines only, information listed under 91.113(c)(10), (11), (13), and (14) may be placed in the owner's manual instead of on the Emission Control Information Label.

X. Certification Fuel

Manufacturers have three options for choice of certification fuel for this rule. The options are described at 40 CFR 91.308(b). The first option is average in-use gasoline (e.g., Clean Air Act Baseline), specified at 40 CFR Part 91, Subpart D, Appendix A, Table 3 (for the octane specification substitute, 86.113-94). The second option is federal certification fuel (e.g., Indolene), specified at 40 CFR 86.1313-94(a), Table N94-1. Note that manufacturers may request approval by the Administrator of fuels with substantially equivalent specifications to these two options. Third, manufacturers may use other fuels as described at 40 CFR 91.308(d).

XI. Special and Alternate Test Procedures

Regulations specify that special and alternate test procedures be approved by EPA. Special or alternate test procedures may include the use of alternate fuels, test cycles which differ from those described in the regulations, or any other deviation in test procedure. Manufacturers should propose special and alternate test procedures during the certification preview, i.e. prior to testing, as described above. The next step following clarification and an initial indication of approval from EPA is to submit a written request for the special and alternate procedures. If EPA approves, an approval letter will be sent to the manufacturer. When the manufacturer submits an application for an engine family which was tested using special or alternate procedures, a description of the procedures must be included in the statement of compliance. The description should identify the engine families for which the procedure applies, include a brief explanation of the procedure(s) and provide adequate reference to more detailed documentation on the procedure and indication of EPA approval.

Manufacturers may elect to use an alternative test procedure provided it yields results equal to the results from the specified test procedure, its use is approved by EPA prior to testing, and the basis for equivalent results is fully described in the manufacturer's application (see 40 CFR 91.119(b)(1)). EPA will work with manufacturers to assist them in making the required technical demonstrations to show equivalency of the emission results.

Because EPA must monitor deviations from prescribed procedures, the certification format specified in this document requires that manufacturers attest that the prescribed regulatory procedures have been followed, or that the manufacturer must briefly describe any deviations from the prescribed regulatory procedures in the statement of compliance section of the application.

The requirements to seek EPA approval of special and alternate procedures and to report the procedures in the compliance statement apply to each applicable engine family for each model year regardless of carryover status.

XII. Existing Technology FEL Calculations When Testing Postponed

If postponing testing for existing technology marine engines, use one the following equations to calculate a FEL:

If power is ≥ 4.3kW, FEL (HC + NOx) = [151 +(557/ $P^{0.9}$)]+[2.0] g/kW-hr

If power is < 4.3 kW, FEL (HC + NOx) = 302.0 g/kW-hr

XIII. Adjustable Parameters (Provisions apply to New Technology ONLY)

An adjustable parameter is any device, system, or element of design which is physically capable of being adjusted (even if access is difficult) and which, if adjusted, may affect emissions or engine performance during emission testing or normal in-use operation. Manufacturers are not liable for emissions over the adjustable range if the adjustable parameter is permanently sealed by the manufacturer or is otherwise not normally accessible using ordinary tools. Unsealed adjustable parameters may be required to be adjusted to *any* setting within the adjustable range during certification, production line, selective enforcement audit, or in-use testing.

If you intend to seal parameters to prevent adjustment, the methods of sealing must provide both a physical and a visual deterrent to tampering. If parameters are adjustable, you are responsible for assuring emission compliance within the full range of adjustability of those parameters. You should report all adjustable parameters sealed or unsealed, in your application. EPA may determine that a parameter which a manufacturer has sealed is not adequately sealed to prevent tampering; in this case EPA will provide written notification to you, and you must modify the seal within 2 years of the written notification, or you will be responsible for emissions over the entire adjustable range of the parameter.

XIV. FEL Changes

A marine engine manufacturer may change the FEL retroactively either to the beginning of production or to the commencement of a modification of the engine family. A

modification of the engine family is defined as a running change which is either a physical modification to an engine, a change in specification or setting, the addition of a new configuration, or the use of a different deterioration factor. FEL changes are not allowed after the end of production. A new certificate must be issued to reflect the new FEL . The effective date of the certificate will be the date the FEL change was implemented. The engine emission information label should be changed to reflect the new FEL. However, engines affected by the FEL change which have already been produced do not have to be relabelled with the new FEL.

APPENDIX A

EPA Marine Engine Certification Application Form

Instructions for Completing Application Form

INSTRUCTIONS FOR COMPLETING EPA MARINE ENGINE CERTIFICATION APPLICATION FORM

Instructions are included in this appendix to aid manufacturers in filling out the certification application form. This application should only be submitted ONCE ALL TESTING AND OTHER CERTIFICATION ISSUES HAVE BEEN RESOLVED. These instructions are also available as an on-line help system on the Filemaker Pro version of the marine certification application form.

The following forms comprise the Marine Engine Certification Application Form: the Statement of Compliance, the Marine Engine Family Information Form, the Marine Engine Test Information Form, the Marine Engine Model Summary Form, the Marine Engine Part Number Summary Form, and the Marine Engine ABT Form.

The engine manufacturer completes these forms, which describe the engine family. The layout of the form is set up to assist the EPA with data input into an electronic data base. Please be sure to include units, or in cases where units are present on the forms, verify the validity of the preset units. EPA asks that the units on the forms match the standards in the regulation. Manufacturers may submit applications either electronically or on paper. EPA will most likely be able to expedite reviews for electronic applications since the data entry step is eliminated.

The electronic version will employ some "pull-down" menus for some questions which will identify all acceptable responses. Where a response is limited by a pull down menu, those responses are described below. These responses are considered the only acceptable responses to those questions.

Manufacturers may submit official correspondence and/or applications through the electronic mail system, Please submit all electronic mail to deadwyler.richard@epamail.epa.gov" The information will then be routed accordingly. Please do not send electronic applications directly to the individual EPA certification representatives. It is important to understand that anytime information is sent via electronic mail, there is no guarantee of security of the information while in transit to the EPA. Additionally, applications may be submitted on diskette.

Confidential Business Information (CBI)

A Confidential Business Information (CBI) block has been included in the Family Information Form, the Test Information Form, the Model Summary Form, and the Averaging, Banking & Trading (ABT) Form. The purpose of the CBI section is to allow the manufacturer to fill in the application

completely and at the same time designate which pieces of information, if any, are to be kept confidential. Once the application has been received and reviewed by the EPA certification representative, the material designated confidential by the manufacturer, will be erased from the public version of the database and the remainder of the application will be made public.

To use the CBI section, first designate whether or not the information is to be kept confidential until introduction into commerce or indefinitely. If the material is CBI until introduction into commerce , type the introduction into commerce date in the blank on the top of the left hand column and enter the number preceding the question whose response is to remain confidential in the left-hand CBI column. If the material is to remain confidential indefinitely enter the number preceding the question whose response is to remain confidential indefinitely in the right-hand CBI column. Information on the ABT form may be specified confidential for a longer period of time than the introduction into commerce date- enter the date in the left hand column.

Diagnostic Check

The EPA database contains a built-in diagnostic check. The purpose of the diagnostic check is to ensure all required information has been entered on the Family Form and the Test Form. (If there are any questions which are not applicable, enter NA; do not just leave blank.) The diagnostic check also looks for common mistakes such as those made in the family name. The diagnostic check will not take the place of the certification reviewer. Any errors found on the Family Form, will be listed in a box to the right of the application labeled Family Form Checkout Box. Errors on the Test Form will be listed in a box to the right of the application labeled Test Form Checkout Box.

How to handle New Submissions, New Submissions (Continued), Additional Test Engines, Running Changes/ FEL changes, Submission of final test results, and Application Corrections using EPA Filemaker Pro Marine Engine database format

Each of the above instances represents a new record in the EPA Filemaker Pro Marine Engine database. The records are linked through common fields. Records should not be written over when updating due to Additional Submissions, Running Changes, FEL changes, or the need to correct information in the application. Instead, you must create a new record for those submissions following the instructions below. (Manufacturers submitting paper versions of the application forms should submit a separate page whenever the instructions below specify the creation of a new record).

New Submissions: Create a new record. Respond to all applicable questions or enter NA on all of the forms (Marine Engine Family Information Form, Marine Engine Test Information Form, etc.). Please do not leave any questions unanswered. This is the only type of record for which the diagnostic check is activated. Enter "New Submission " under the "Process Code".

New Submissions: If there are Additional Test Engines: If there is more than one test engine, complete the entire application for the first test engine, then create a new record. In this new record, fill in ONLY the following information:

Manufacturer Name on the Marine Engine Family Information Form
Engine Family Name on the Marine Engine Family Information Form
Enter "New Submission " under the "Process Code"on the Marine Engine Family Information Form
Complete the Marine Engine Test Information Form in its entirety and on that form enter the previous highest test data set number incremented by one to reflect the new record: for example, this value would be "2" for the second test engine, "3" for the third test engine, etc.

New Submission (Continued): You would need to create this record if you have more information to submit than space provided in the forms. For instance, if you run out of space on the Marine Engine Part Number Summary, you would need to do this. Create a new record and fill in ONLY the following information:

Manufacturer Name on the Marine Engine Family Information Form
Engine Family Name on the Marine Engine Family Information Form
Enter "New Sub-cont." under the "Process Code"on the Marine Engine Family Information Form
Enter responses to only those questions on all the forms (Marine Engine Family Information Form, Marine Engine Test Information Form, Marine Engine Model Summary, Marine Engine Parts Summary, etc.) which would not fit in space provided on the New Submission record. Do not enter information in any other fields.

Running Change: Create a new record and fill in ONLY the following information:

Manufacturer Name on the Marine Engine Family Information Form
Engine Family Name on the Marine Engine Family Information Form
Enter "Running Change" under the "Process Code"on the Marine Engine Family Information Form
Enter under "Estimated Production Start" on the Marine Engine Family Information Form the date the running change was implemented.
Enter in "Comments" box on the Marine Engine Family Information Form a description of the change and any explanation as to why the manufacturer believes the engine family remains in compliance.
Enter responses to only those questions which are affected by the running change on all the forms (Marine Engine Family Information Form, Marine Engine Test Information Form, Marine Engine Model Summary, Marine Engine Parts Summary, etc.). If new emission test data is being submitted, complete the Marine Engine Test Information Form in its entirety and on that form increment the previous highest Test Data Set number by one to reflect the new record.

FEL Change: Treated the same as a *Running Change*, except the effective date is the date the new FEL is applied to production. Create a new record and fill in ONLY the following information:

Manufacturer Name on the Marine Engine Family Information Form
Engine Family Name on the Marine Engine Family Information Form
Enter "FEL Change" under the "Process Code" on the Marine Engine Family Information Form
Enter under "Estimated Production Start" on the Marine Engine Family Information Form the date the FEL change was effective.
Enter the new FEL
Enter in "Comments" box on the Marine Engine Family Information Form the words "FEL Change" and describe the basis for the FEL change (for example, result of internal audits or production line testing, and/or a modification to the engine or its settings). If the FEL change is the result of an engine family modification, the date of the FEL change must reflect the date the engine family modification was implemented on the production line.
Enter responses to only those questions on all the forms (Marine Engine Family Information Form, Marine Engine Test Information Form, Marine Engine Model Summary, Marine Engine Parts Summary, etc.) which are affected by the FEL change. If new emission test data is being submitted, complete the Marine Engine Test Information Form in its entirety and on that form enter the previous highest Test Data Set number incremented by one to reflect the new record.

Application Corrections: Only use this category if a correction is required AFTER you have submitted your application to EPA. Create a new record and fill in ONLY the following information:

Manufacturer Name on the Marine Engine Family Information Form
Engine Family Name on the Marine Engine Family Information Form
Enter "Correction" under the "Process Code"on the Marine Engine Family Information Form
Enter in "Comments" box on the Marine Engine Family Information Form the reason for the required correction.
Enter responses to only those questions on all the forms (Marine Engine Family Information Form, Marine Engine Test Information Form, Marine Engine Model Summary, Marine Engine Parts Summary, etc.) for which a correction is required.

Final Test Result per 91.118(h)(1)(i): Only use this category if test data is being submitted for Existing Technology engines which were certified using the function referenced in 91.118(h)(1)(i) . Create a new record. In this new record, fill in ONLY the following information:

Manufacturer Name on the Marine Engine Family Information Form
Engine Family Name on the Marine Engine Family Information Form
Enter "Final Test Result per 91.118(h)(1)(i)" under the "Process Code"on the Marine Engine Family Information Form
Complete the Marine Engine Test Information Form in its entirety and on that form enter the previous highest test data set number incremented by one to reflect the new record.

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Marine Engine Statement of Compliance Form Instructions

Every application must contain a statement of compliance. A sample compliance statement is contained in Appendix B. Alternatively for those applicants utilizing the electronic format, a form is available for an electronic compliance statement. To insert standard compliance language, click on the button labeled "To use the sample language". Otherwise, type in the field provided for your statement of compliance. Remember to include a brief description of any alternate or special test procedure utilized in the testing of this engine family and a reference to EPA's approval. Applicants using the electronic compliance statement should include a signed transmittal letter along with the electronic submission listing the engine families for which certification is requested.

Marine Engine Family Information Form Instructions

1. MANUFACTURER NAME

2. CERTIFICATION CONTACT PERSON, ADDRESS, PHONE AND FAX NUMBER

List the company individual who is to receive all communications. Unless clearly specified otherwise, this person will receive every form of correspondence, including the Certificate of Conformity. EPA prefers the manufacturer's primary contact be in the United States. If you wish for someone else to receive the Certificate of Conformity, please list that person's name and address second.

3. MODEL YEAR *(Pull down menu)*

List the 4 digit model year of the engine family, according to the definition in 40 CFR 91.3. (Example 1998).

4. PROCESS CODE *(Pull down menu)*

Enter either "New Submission", "New Sub-Cont.", "Running Change", "Correction", "FEL Change", or "Final Test Result 91.118(h)(1)i". "New Sub-Cont." is used when additional space is required on the original "New Submission". Only enter "Running Change" if the engine family is already certified and you are submitting a running change. "New Submission", "Correction", and "FEL Change" are self explanatory. Use "Final Test Result 91.118(h)(1)i" when submitting the final test report for existing technology families for which testing was postponed. See instructions at the beginning of this appendix for creation of new records for each of these categories.

5. ENGINE FAMILY NAME

Enter the engine family name. This name is composed of twelve letter and numeric characters formatted according to Appendix C of this guidance.

6. ENGINE FAMILY NAME ON LABEL

Fill in the blank with the correct label information. The purpose for this question is for manufacturers who wish to carryover engine families and have extra labels from the previous year they wish to use

on the upcoming model year. Manufacturers should notify EPA of the changeover date when old labels are no longer being used.

7. ENGINE CYCLE *(Check box)*

Check the correct box. If other is chosen, fill in the exact type of engine cycle.

8. TECHNOLOGY TYPE (*Check box)*

Check either "New" or "Existing".

9. VALVE LOCATION/PORTING CONFIGURATION (C*heck box)*

Specify where applicable side valve, overhead valve, or the type of intake porting utilized, such as reed valve, piston ported, or other. If other, please specify type.

10. EMISSION CONTROL SYSTEM (C*heck box)*

Check all boxes which apply. EM = Engine modification, EGR = Exhaust Gas Recirculation, CATALYST, or Other. If "Other" is chosen, please specify control system.

11. ESTIMATED PRODUCTION PERIOD

List the anticipated beginning and end dates for the engine family's production. Date format is mm/dd/yy. This information may be used to determine expiration of CBI claims which were made until introduction into commerce if no other introduction into commerce date is specified.

12. PROJECTED ANNUAL SALES

Enter the number of engines in the engine family projected for sale in the U.S. for this model year.

13. PRODUCTION PLANT LOCATION(S) AND CONTACT(S)

Provide the address(es) of the plant(s) and contact(s) (including phone and fax) where production of this engine family occurs. Indicate which models are produced at which plants. This information will be used in the unlikely event of a Selective Enforcement Audit (SEA). The contact person should be able to assist EPA personnel in the selection of engines from the assembly line. All plants at which this engine family are produced should be listed. Manufacturers may indicate a preferred plant location for SEAs for this engine family.

14. MAJOR APPLICATION(S) *(Check boxes)*

Indicate what the expected major end-use equipment application(s) will be for the engine family. For hybrid applications, (e.g. jetboats), please choose OTHER and describe the application; then also check the box to indicate whether the credits will be counted as Personal Water Craft or Outboard credits.

☐ Personal Water Craft ☐ Other...
☐ Outboard

15. ENTER THE FAMILY EMISSION LIMIT (FEL)

See XII above for the formulas to calculate the FEL for existing technology when testing is postponed.

16. FUEL SYSTEM (Check boxes)

Indicate the fuel system type for the engine family. If not listed, please choose OTHER and specify the type. Check all boxes which apply.

☐ Carburetor ☐ Throttle Body Injection
☐ Direct Injection ☐ Electronic Control
☐ Indirect Injection ☐ Other...

17. ADJUSTABLE PARAMETER (FOR NEW TECHNOLOGY ONLY)

List all adjustable parameters, the adjustable range, and the tamper resistance methods in their proper columns. If not applicable, enter N/A. Please note that an adjustable parameter should be listed even when it is sealed.

ADDITIONAL COMMENTS

This box is provided for anything in the application that needs further explanation. The box will hold as much and what ever type of additional information the manufacturer would like to add to the application.

Marine Engine Test Information Form

A separate copy of this form must be filled out for each different test engine. List multiple tests of the same engine on one form. Space is provided for reporting up to four tests per engine. If more than four tests on the same engine are performed, an additional sheet (or data set) must be used. Each additional sheet must be numbered (see item #27).

18. ARE YOU CARRYING OVER TEST RESULTS.... (*Check boxes*)

Indicate whether you are carrying over test results from a previously-certified EPA engine family. Check "Yes" or "No".

A) If yes, indicate the family name from which test results are being carried over and
B) whether the family being certified is identical to the family from which test data is being carried over, "Yes" or "No".

19. MODEL DESIGNATION OF TEST ENGINE

Enter the manufacturer's model number of the engine used for certification testing.

20. TEST ENGINE IDENTIFICATION NUMBER

List the test engine serial number.

21. SERVICE ACCUMULATION DURATION

Enter the number of service accumulation hours performed, following 40 CFR 91.117 and 91.408 (test engine break-in.) The break-in period is determined by the manufacturer to be the length of time the engine should be run to stabilize emissions. The manufacturer may use emission test results or engineering judgement to determine the appropriate break-in period.

22. MAXIMUM RATED POWER

Specify the maximum rated power in kW at maximum RPM of the test engine.

23. DISPLACEMENT

Indicate the displacement of the test engine in cubic centimeters.

24. CERTIFICATION FUEL *(Check boxes)*

Indicate the type of fuel used for the certification emission test:

□ Average in-use gasoline (e.g., "Clean Air Act Baseline"), specified at 40 CFR Part 91, Subpart D, Appendix A, Table 3. [foroctane rating, see 86.113-94.]

□ Federal Certification Fuel (e.g., "Indolene"), specified at 40 CFR 86.1313-94(a), Table N94-1.

□ Other. If you choose other, you must specify the fuel type.

If "other" is chosen, manufacturer must seek approval from EPA prior to testing.

25. TEST CYCLE *(Check boxes)*

Indicate which test cycle was used, "5-mode", "5-mode with authorized deviation", "Alternate Test Procedure", "Special Test Procedure", "NA". Check all boxes which apply. NA is chosen only for EXISTING TECHNOLOGY. If Special Test Procedure or Alternative Test Procedure, manufacturer must seek approval from EPA prior to testing.

26. FOR EXISTING TECHNOLOGY ONLY: IS COMPLIANCE BASED ON? (Check boxes)

☐ Testing per 91 subpart E* [FTP testing]
☐ Testing per 91.118(g) [Alt. Testing/Engineering Judgement]
☐ Postponed [Equation]

* Including alternate and special test procedures with prior approval by the EPA.

- Check "Testing per 91 subpart E* [FTP testing]" box if submitting actual data which was acquired following the FTP or authorized deviations from the FTP.
- Check "Testing per 91.118(g) [Alt. Testing/Engineering Judgement]" box if submitting data which was collected as described in 40 CFR 91.118(g) or if good engineering judgement was used. {Note: If good engineering judgement was used, some from of data which will support the good engineering judgement must also be supplied.}

- Check "Postponed [Equation]" box if FEL is based on the equation and testing will be done in the future.

27. TEST DATA SET

Enter the test data set number (e.g. 1,2,3...). The first data set is data set 1. Data sets 2, 3, etc. are reserved for additional test engines, the reporting of the fifth or higher test on the engine described in a previous data set, or for the reporting of data generated for a running change. Additional data sets must appear on separate records. See instructions for adding records at the beginning of this appendix.

28. TEST LOCATION AND CONTACTS

Indicate the location and contacts, including phone and fax numbers, where the certification emission engine testing was conducted.

29. EMISSION SAMPLING METHOD (*Pull down menu)*

Indicate which emission sampling method was used to produce the test results, "Raw-Gas Method (RGM)", "Constant Volume Sampling(CVS)", or "Other". If "Other", please specify alternate method. In addition if "Other" is selected, manufacturer must seek approval from EPA prior to testing.

30. OIL TO FUEL RATIO

Enter the oil to fuel ratio. If variable, enter "Variable" and the range.

31. DETERIORATION FACTOR TYPE *(Pull down menu)*

Select either "Additive" or "Multiplicative" deterioration factor type.

32. CERTIFICATION EMISSION TEST RESULTS *(Table)*

List the date of the test and the final weighted emissions of the test engine for HC, NO_x, and HC + NO_x. EPA prefers that emission results are reported in g/kW-hr. List the certification levels of the test engine (the certification levels are the test results with the deterioration factor (df) applied).

Marine Engine Model Summary Form

33. MODEL DESIGNATION *(Table)*

List all models in the engine family. Enter each model number in an independent row.

34. DISPLACEMENT *(Table)*

Indicate the displacement of each model in the engine family in cubic centimeters. *Please do not leave blanks or use ditto marks.*

35. MAXIMUM POWER*(Table)*

Specify maximum power in kW for the model engine(s). This specification may be rated power or advertised power as long as the same definition is used consistently to fill out the model summary table.

36. RATED SPEED *(Table)*

Enter the speed at which maximum power reported in #35 was achieved.

37. MAX TORQUE (*Table*)

Specify the maximum torque in Nm for the model engine(s).

38. RATED SPEED *(Table)*

Enter the speed at which maximum power reported in #37 was achieved

Marine Engine Part Number Summary Form

39.-50. PART NUMBERS *(Table)* (For New Technology Only)

Enter part numbers for each model in the engine family.

39. Spark plug
40. Catalyst
41. Carburetor
42. Distributor
43. Injector
44. EGR
45. ECM
46. Fuel Pump or Injection Pump
47. Oxygen Sensor
48. PCV value
49. _____
50. _____

49 to 50 : Space for additional parts. Please list here the name of any AECD's or other parts required to be described along with the part number for each model.

A-14

Marine Engine ABT Form

Enter the following information in the appropriate columns.

52. If the engine family generates positive emission credits, check the "positive credits" box in the left-hand column. If the engine family generates negative emission credits, check the "negative credits" box in the right-hand column

53. Enter the number of positive or negative credits generated using the units g/kW-hr. If negative credits, use a minus sign in front of the number.

54. Enter the Power (per the definition in 91.207(a)) in kW.

55. Enter the Average Actual Useful Life (as defined in 91.207(a)) in years.

56. For engine families generating positive credits, enter the engine family name of the family which will be using the credits, or "reserved" if the credit usage has not been identified. For engine families generating negative credits, enter the engine family name which was the source of the credits, or "reserved" if credits came from the manufacturer's reserve of credits.

APPENDIX B

Sample Statement of Compliance

SAMPLE STATEMENT OF COMPLIANCE

Manufacturer Primary Contact
XY Engine Company
4567 Industrial Highway
El Monte, CA 91731

March 1, 1997

Anne Fredo
Engine Compliance Programs Group
U.S. Environmental Protection Agency
Mail Code 6403J
401 M Street, S.W.
Washington, DC 20460

Dear Ms. Fredo:

Please find enclosed the model year 1998 application for engine family WXYXM0062 1A0. On behalf of XY Engine Company, I hereby certify that the test engine(s), as described in this application for certification, has been tested in accordance with the applicable test procedures, utilizing the fuels and equipment required under subparts D and E of 40 CFR 91, and that on the basis of such tests the engine(s) conforms to the requirements of 40 CFR 91. I further certify that all engines in this engine family comply with all requirements of 40 CFR 91 and the Clean Air Act.

[OPTIONAL] I hereby assert that certain information in this application is confidential business information, and request that this information remain confidential until the introduction of these engines into commerce on [DATE]. The information which we assert to be confidential business information is **,**, and **. An additional copy of the application with this information deleted is enclosed.

Sincerely,

[MANUFACTURER PRIMARY CONTACT]

Enclosures

Refer in this letter to any alternate or special test procedure approvals or any other approvals required from EPA for this engine family.

APPENDIX C

EPA STANDARDIZED ENGINE FAMILY NAMING CONVENTION

EPA Standardized Engine Family Names for 1998 and Later Model Years

The following document is a final document prepared for distribution. It has been peer reviewed and EPA has made a decision to adopt this design.

Manufacturers must use a standardized system for identifying their individual engine families. The system described below was developed by EPA in 1995 to meet new regulatory requirements for 1998 and later model years.

The engine family name consists of 12 characters. For the displacement field, zero is used as a space character in the leading position when a value does not apply. To avoid confusion with numeric characters '0' and '1', characters 'I' and 'O' are not used. It is considered desirable to minimize use of characters 'Q', 'L', 'Z', 'S' 'G', which can be confused with '0', '1', '2', '5', and '6'; however, this has not always been possible. The following method is to be used to name engine families when data is submitted. The format of the standardized engine family name is:

Family information for all families

Organizing your engine families

The engines in your product line must be divided into families according to the following criteria. Generally, engines in the same family must have the same:

(1) combustion cycle,
(2) cooling mechanism,
(3) cylinder configuration,
(4) number of cylinders,
(5) number of catalytic converters, in the same location, and with the same volume and composition, and,
(6) thermal reactor characteristics.

If you can demonstrate that engines with different combustion cycles, cooling mechanisms, etc., have similar emissions over the useful life, you may place the engines in the same engine family. Submit data showing equivalency with your request to combine or further divide engine families.

EPA engine family names

Engine families must be named using the definitions provided below. Your certificates will be identified using this 12-character EPA family name.

Position	Definition	Characters
1	model year	W=1998 X=1999 Y=2000 1=2001 2=2002 3=2003 4=2004 5=2005 6=2006 7=2007
2-4	manufacturer code	M9X=Mercury Marine 1PX=Outboard Motor Corp. SKX=American Suzuki YMX=Yamaha KAX=Kawasaki HNX=Honda 1TX=Tohatsu T7X=Tanaka BCX=Bombardier RBX=Robin 3AX=Arctco POX=Polaris
5	family type	M (marine)
6-9	engine disp	four numbers indicating displacement in cubic inches (e.g., "0200"); two numbers and a decimal point for liters (e.g., "05.0", "10.1")
10-12	manufacturer's discretion	

If you plan to include engines with different displacements in the same engine family, use the largest displacement in the family name.

If the manufacturer code for your company is not shown in the table above, contact EPA and request a code.

Optionally, you may use the following definitions for positions 10 and 11 of the engine family name:

10 class/technology type
- 1=OB, old tech.
- 2=OB, new tech.
- 3=PWC, old tech.
- 4=PWC, new tech.

11 cycle/cooling/emissions
- A=2 stroke (2s), air-cooled (ac) engine, no catalyst
- B=2s, ac, catalyst
- C=2s, water-cooled (wc), no catalyst
- D=2s, wc, catalyst
- E=4 stroke (4s), ac, no catalyst
- F=4s, ac, catalyst
- G=4s, wc , no catalyst
- H=4s, wc, catalyst

* NOTE: EPA allows carryover of family name on labels to use up stocks of labels; however, manufacturers must update the engine family name every year in the application for certification.

APPENDIX D

Confidential Business Information in the Certification Application

As a general principle, information provided to EPA by individuals or companies will be considered public information and will be provided to those who request it unless the information falls under one of the exemptions listed in the Freedom of Information Act (the Federal statute which governs disclosure of information to the public). One of these exemptions is information which the submitting individual or company asserts is confidential or proprietary information (e.g., trade secrets).

Manufacturers are entitled to assert a claim of confidential business information (CBI) on the information which they are required to submit in a certification application. If information the manufacturer asserts to be CBI is information which is otherwise discernible by physical inspection of the marine engine or equipment (e.g., question 10, "Emission Control System"), EPA will not release any such information that qualifies as CBI before the effective date of the certificate. If the manufacturer wishes this information to remain confidential until the engine family is introduced into commerce (when this date is after the effective date of the certificate), the manufacturer must inform EPA of this actual date of introduction into commerce when it submits its certification application, and specifically request that the information remain confidential until the introduction date.

For example, consider this time line for a 1997 model year engine:

Date certificate issued: December 1, 1996

Date certificate is effective: January 2, 1997

Date of introduction into commerce: April 1, 1997

Under this time line, EPA would not release any CBI from the certificate application until April 1, 1997 or later, provided the manufacturer informs EPA of the date of introduction into commerce and makes such a request when it submits its certification package. See sample optional language for such a request in appendix B of this guidance.

Manufacturers should be aware that certain information in the certification application can retain CBI status even after the actual date the engines are introduced into commerce. If a manufacturer desires that certain information retain CBI status after the date the engines are introduced into commerce, it must make this request when it submits its application package by informing EPA of the length of time the manufacturer wishes the information to remain CBI.

Under EPA regulations at 40 CFR 91.7, manufacturers must indicate clearly what information submitted is confidential. Manufacturers may state in the application cover letter which sections of the application are CBI, or/and otherwise mark or stamp the CBI. Whenever a manufacturer submits an application which contains information asserted to be confidential, EPA urges the manufacturers to submit an additional application with all CBI deleted to accompany the original application.

Based on EPA's historical experience with certification applications in the on-highway program, EPA notes that certain information in the application should not be considered eligible to fall under a CBI claim under any circumstances. This information is generally available to the public or competitors and disclosure of this information would not be likely to cause any harm to the competitive position of any manufacturer. The Engine Compliance Programs Group (ECPG) staff believes that the information provided in response to the following questions on the Marine Engine Certification Application Form should not be considered confidential under any circumstances:

1. Manufacturer Name
2. Contact Person, Address, Telephone, Facsimile
3. Model Year
5. Engine Family Name
6. Engine Family Name Used on Label
7. Engine Cycle (2 stroke or 4 stroke)
8. Engine Technology (New or Existing)
9. Valve Location/porting Configuration
13. Production Plant Location
14. Major Applications (OB, PWC, Other)
15. FEL
18. Carryover of Test Results
29. Emission Sampling Method
24. Certification Fuel
25. Test Cycle
28. Test Location
32. Certification Emission Test Results and Test Date

Finally, manufacturers should remember that, if EPA receives a request under the Freedom of Information Act for release of a certification application, EPA will inform the requestor (in writing) that all information asserted to be CBI by the manufacturer cannot be released until the Agency (which in this instance means the Office of General Counsel (OGC)) makes a "final determination of confidentiality." The EPCG staff will then write to the manufacturer to offer the opportunity to substantiate its claim about the business confidentiality of the information by answering some questions about the information (the questions can be found in regulations at 40 CFR 2.204(e)). The EPCG staff will review the manufacturer's responses to these questions and forward them with comments to the OGC for the final determination of confidentiality.

Any questions about this process should be addressed to:

Robert M. Doyle, Attorney-Advisor
Engine Compliance Programs Group

U.S. Environmental Protection Agency
401 M Street, S.W. (6403J)
Washington, DC 20460
Telephone (202) 233-9258
Facsimile (202) 233-9596
E-mail - Doyle.Robert@EPAMAIL.EPA.GOV

APPENDIX E

Sample Marine Engine Certificates of Conformity

SAMPLE

SAMPLE MARINE CERTIFICATE OF CONFORMITY FOR NEW ENGINE FAMILIES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

1998 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1970 AS AMENDED IN 1990
ISSUED TO:

SAMPLE

_____ _____
MANUFACTURER CERTIFICATE NUMBER

_____ _____
Chester J. France, Director, EPCD EFFECTIVE DATE
OFFICE OF MOBILE SOURCES

SAMPLE

DATE ISSUED:

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. § 7547) and 40 CFR 91, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following marine engines, by engine family, more fully described in the documentation required by 40 CFR Part 91 and produced in the stated model year:

SAMPLE

MARINE SPARK-IGNITION ENGINE FAMILY:

This certificate of conformity covers only those new marine spark-ignition engines which conform, in all material respects, to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 91 and which are produced during the model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Part 91. This certificate of conformity does not cover marine engines imported prior to the effective date of the certificate.

SAMPLE

This certificate of conformity is conditional upon compliance of said manufacturer with the averaging, banking and trading provisions of 40 CFR Part 91, Subpart C including those after model year production. Failure to comply with these provisions may render this certificate void *ab initio*. The HC + NOx family emission limit (FEL) is _____ g/kW-hr.

SAMPLE

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 91 or authorized in a warrant or court order. Failure to comply with the requirements of such inspections may lead to revocation or suspension of this certificate. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 91.

This certificate does not cover marine engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

(New Technology Marine Engine Certificate)

SAMPLE
SAMPLE
SAMPLE
SAMPLE
SAMPLE
SAMPLE

SAMPLE

SAMPLE MARINE CERTIFICATE OF CONFORMITY FOR TESTED ENGINE FAMILIES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

1998 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1970 AS AMENDED IN 1990
ISSUED TO:

SAMPLE

_____ _____
MANUFACTURER CERTIFICATE NUMBER

_____ _____
Chester J. France, Director, EPCD EFFECTIVE DATE
OFFICE OF MOBILE SOURCES

SAMPLE

DATE ISSUED:

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. § 7547) and 40 CFR 91, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following marine engines, by engine family, more fully described in the documentation required by 40 CFR Part 91 and produced in the stated model year:

SAMPLE

MARINE SPARK-IGNITION ENGINE FAMILY:

This certificate of conformity covers only those new marine spark-ignition engines which conform, in all material respects, to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 91 and which are produced during the model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Part 91. This certificate of conformity does not cover marine engines imported prior to the effective date of the certificate.

SAMPLE

This certificate of conformity is conditional upon compliance of said manufacturer with the averaging, banking and trading provisions of 40 CFR Part 91, Subpart C including those after model year production. Failure to comply with these provisions may render this certificate void *ab initio*. The HC + NOx family emission limit (FEL) is _____ g/kW-hr.

SAMPLE

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 91 or authorized in a warrant or court order. Failure to comply with the requirements of such inspections may lead to revocation or suspension of this certificate. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 91.

This certificate does not cover marine engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

(Existing Technology Marine Engine Certificate)

SAMPLE
SAMPLE
SAMPLE
SAMPLE
SAMPLE
SAMPLE

SAMPLE

SAMPLE MARINE CERTIFICATE OF CONFORMITY FOR EQUATION ENGINE FAMILIES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

1998 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1970 AS AMENDED IN 1990
ISSUED TO:

MANUFACTURER	CERTIFICATE NUMBER
Chester J. France, Director, EPCD OFFICE OF MOBILE SOURCES	EFFECTIVE DATE

DATE ISSUED:

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. § 7547) and 40 CFR 91, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following marine engines, by engine family, more fully described in the documentation required by 40 CFR Part 91 and produced in the stated model year:

MARINE SPARK-IGNITION ENGINE FAMILY:

This certificate of conformity covers only those new marine spark-ignition engines which conform, in all material respects, to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 91 and which are produced during the model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Part 91. This certificate of conformity does not cover marine engines imported prior to the effective date of the certificate.

This certificate of conformity is conditional upon compliance of said manufacturer with the averaging, banking and trading provisions of 40 CFR Part 91, Subpart C including those after model year production. Additionally, this certificate is conditional upon compliance with requirements described at 40 CFR 91.118 (h)(1)(i). Failure to comply with these provisions may render this certificate void *ab initio*. The HC + NOx family emission limit (FEL) is ____ g/kW-hr.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 91 or authorized in a warrant or court order. Failure to comply with the requirements of such inspections may lead to revocation or suspension of this certificate. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 91.

This certificate does not cover marine engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

(Existing Technology Marine Engine Certificate
Conditioned Upon Requirements at 40 CFR 91.118(h)(1)(i))