New Requirements for Boat Fuel and Fuel Systems

IBEX
September 16, 2015
Speakers: Dave Marlow, Brunswick Boat Group, Dan Ostrosky, Yamaha Motor Corp., Jeff Wasil, BRP/Evinrude, John McKnight, NMMA
Disclaimer

Note: All references citing manufacturers of marine watercraft, engines and related equipment in this presentation are for informative and illustrative purposes only.

Their use in this presentation does not constitute an endorsement of these manufacturers or their products by the State of California or the California Air Resources Board.
Purpose of ARB Regulation

- California has the worst air quality in the nation

- CARB develops regulations to comply with the federal Clean Air Act requirements

- CARB’s new evaporative regulations for boats will fulfill a legal commitment included in California’s State Implementation Plan (SIP)

- This regulation will help California obtain the emission reductions needed to attain federal ozone standards
Who does this Regulation apply to?

- CARB’s new evaporative emissions regulation applies to all MY 2018 spark-ignition marine watercraft with permanently installed fuel tanks sold in California.

- Marine watercraft that use engines > 40HP must meet the more stringent CA standards.

- Marine watercraft that use engines ≤ 40HP must meet harmonized existing U.S. EPA standards.
How it will work!

Fuel Hose Certified by Component Mfg.
Tank Certified by Component Mfg.
Canister Certified by Component Mfg.
P.R.V. Certified by Component Mfg.

Certified Components listed on SIMW Component Web Page

Builder references Certified Components from ARB Listing

ARB Certifies Watercraft Using Components EO’s in lieu of Components Data
Component Certification

• What is component certification?
  ✓ Component certification is the certification of fuel hoses, fuel tanks, carbon canisters and prv by ARB

✓ Certification means that manufacturers have demonstrated that their product meets applicable design and performance requirements
Design Based Standards ≤ 30kW (40HP)

All evaporative emission standards and test procedures have been harmonized with U.S. EPA

<table>
<thead>
<tr>
<th>Standards for MY2018 and later</th>
<th>Fuel Hose Permeation (grams/m²/day ROG)</th>
<th>Fuel Tank Permeation (grams/m²/day ROG)</th>
<th>Diurnal Requirement (grams/gallon/day HC)</th>
<th>Fuel Injection or Equivalent (grams/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.0</td>
<td>1.5</td>
<td>0.4</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Test Procedure

<table>
<thead>
<tr>
<th>Standards for MY2018 and later</th>
<th>Fuel Hose Permeation (grams/m²/day ROG)</th>
<th>Fuel Tank Permeation (grams/m²/day ROG)</th>
<th>Diurnal Requirement (grams/gallon/day HC)</th>
<th>Fuel Injection or Equivalent (grams/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 CFR §1060.515</td>
<td>40 CFR §1060.520¹</td>
<td>40 CFR §1060.525</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

¹ As an alternative, fuel tanks can be certified to 2.5 grams/m²/day at 40°C
### Design Based Standards > 30kW (40HP) (Trailerable)*

*Applicable to marine watercraft ≤ 26 ft. in length and ≤ 8.5 ft. in width

<table>
<thead>
<tr>
<th></th>
<th>Fuel Hose Permeation (grams ROG/m²/day)</th>
<th>Fuel Tank Permeation (grams ROG/m²/day)</th>
<th>Diurnal Tank Venting Loss Requirement (grams HC/gallon/day)</th>
<th>Meet Fuel Injection Definition or Equivalent Performance Standard (grams HC/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards for MY2018 and MY2019</td>
<td>10.0</td>
<td>0.70</td>
<td>0.25</td>
<td>65% reduction from uncontrolled HC emissions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.4</td>
</tr>
<tr>
<td>Standards for MY2020 and later</td>
<td>5.0²</td>
<td>0.70</td>
<td>0.25</td>
<td>65% reduction from uncontrolled HC emissions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.4</td>
</tr>
<tr>
<td>Test Procedure</td>
<td><strong>TP-1504</strong> or SAE J1737</td>
<td><strong>TP-1504</strong>²</td>
<td><strong>TP-1503</strong></td>
<td><strong>TP-1502</strong></td>
</tr>
</tbody>
</table>

1. Canisters may be certified by design as an option. Canisters must have a minimum butane working capacity of 3.8 grams/gallon
2. Must be performed at 40°C
3. As an alternative, fuel tanks can be certified to 1.4 grams/m²/day at 40°C
Pathways to Compliance

CARB’s new regulation has two methods for demonstrating compliance (13 CCR 2855 (a)):

1. Design-Based – Requires marine watercraft manufacturer to use specific CARB-certified components for:
   • Fuel injection
   • Low permeation fuel hoses
   • Low permeation fuel tank
   • Passively-purged carbon canister or pressure relief valve

2. Performance Alternative – Requires manufacturers to meet one standard for the complete boat or fuel system, based on a 24-hour diurnal test (TP-1501, TP1502)
ARB will implement the following New Test Procedures or “TP’s” for component Compliance testing:

- TP1501 - Hot Soak for Diurnal Emissions for SIMW
- TP1502 - Hot Soak for Evaporative Emissions SIMW
- TP1503 - Diurnal Venting Emissions Carbon Canister, PRV
- TP1504 - Permeation Emissions form Fuel Tanks, Hoses and Caps
- TP1505 – Durability and compliance testing for PRV

Most TP’s follow existing Federal Test requirements
What else is different??
- All sample groups must test 5 samples (2 more than current EPA)
- Requirements to include CAD drawings where applicable
Component Test Limitations

• ARB will require the following as Worst Case: EPA 1060.235 (b) (1)

✓ Fuel Hose - smallest inside diameter

✓ Fuel Tank – smallest volume to surface area ratio

✓ Carbon Canister – canister sized for the largest fuel tank in category

✓ PRV (pressure relief valve) – meets minimum design requirements and additional durability testing
Basic Component Certification Rules

- Must include testing of 5 components samples (Current EPA is 3 samples)

- Application Must be deemed complete by ARB before it can be processed

- ARB will issue a component Executive order (EO) for each component

- ARB will update Web site with New EO’s periodically

- Note: Engine Manufacturer has the responsibility for certification of fuel injection system. (Will be part of Engine Family EO)
Component Manufacturer

START

Component manufacturer performs testing according to CARB test procedures

Component Manufacturer submits component application to CARB

CARB

Rejection Letter

Email notification of issues

CARB reviews if evap application is complete? (max 30 days)

NO

CARB approves or disapproves component certification (max 90 days)

DISAPPROVE

YES

Approve

CARB issues EO to component manufacturer

Component is now ready to be sold to boat manufacturer for use in California

END
Fuel Hose Certification (case study)

Example:

A fuel hose manufacturer seeks a component EO for low permeation fuel hoses with internal diameters ranging in size from 1/4 to 3/8 inches.
Fuel Hose Certification Case study

✓ Letter of Intent (on company letterhead) must include:
✓ Specific request for an EO for the component
✓ Description of the barrier material and thickness
✓ Emissions data results from **five** (5) component samples (in-house or third-party testing)
✓ Reference to the test procedure used to generate the data
✓ Reference to the test temperature and test fuel used generate the data
✓ Letter signed by authorized company representative
Letter should also include:

✔ Description of material composition

✔ General description of the manufacturing process

✔ Drawing of component (labeled parts and cross-section, general dimension measurements, intended placement of EO labeling, etc.)

✔ Installation and maintenance instructions (if applicable)

✔ Limits for proper functioning (e.g., temp range, ethanol %, bend radius, etc.)

✔ Warranty statement (ARB Verbatim or Pre Approved language)

✔ Other pertinent information (e.g., quality control frequency, fluorination level verification, etc.) Note: Detail QA process
Case Study “Hose” cont’d

✓ Hose emissions data from five (5) samples

✓ Declaration of how the test data was generated (Hose was tested at a constant 23°C with CE10 following TP-1504)

✓ General material description of the hose along with labeled CAD drawings

✓ Location and mounting instructions ***

✓ Any conditions which might affect the hose’s integrity (maximum skin temperature, kinking radius, etc.) ***
Submission

Manufacturer submits package requesting a component EO, test data, and other required info to:

California Air Resources Board
Monitoring and Laboratory Division
Attn: Division Chief
P.O. Box 2815
Sacramento, CA 95812
NOW WHAT???
Component Manufacturer

START

Component manufacturer performs testing according to CARB test procedures

Component Manufacturer submits component application to CARB

CARB

Rejection Letter

Email notification of issues

CARB reviews if evap application is complete? (max 30 days)

NO

CARB approves or disapproves component certification (max 90 days)

DISAPPROVE

YES

CARB issues EO to component manufacturer

Component is now ready to be sold to boat manufacturer for use in California

END
ARB Processing

- Logging the date of receipt
- Reviewing the application for completeness
- Notifying applicant if not complete (within 30 days)
- Verifying that 5 hose sample data points are below the design criteria of 10 grams/meter\(^2/day\)
- Drafting a component EO for the hoses
- Mailing the component EO to the manufacturer
- Adding the component EO to SIMW Component Web Page

http://www.arb.ca.gov/msprog/offroad/sore/sorecomponent/sorecomponent.htm
Certification Timing

- ARB can take up to 90 days for complete process
- 90 day clock does not start until a complete application is received and verified.
- Be sure all elements of your application are included and readable to reduce certification delays.
Post Certification

- ARB may conduct compliance testing on Components
- Component manufacturer and boat builder will be notified if a component fails compliance testing
  - EO may be revoked
  - Penalties may be imposed (Component Mfg.)
- Component EO is valid until revoked
- Any emissions-related change to the component must be submitted and reviewed by CARB
Running Changes:

Non emission affected: Part number, Color, labeling etc...
Submit simple explanation to ARB identifying changes so to be added to ARB EO file
Note: Should be done annually prior to production

- Major Design changes, material thickness, type, brand, mfg. process...
- Will require new application and EO
Scott Monday – Regulations and Test Procedures
(916) 445-9319, scott.monday@arb.ca.gov

Michele Dunlop – Component Certification
(916) 323-8971, michele.dunlop@arb.ca.gov

Kevin Curley – Boat Certification
(626) 350-6418, kevin.curley@arb.ca.gov

Details about the new evaporative requirements, test procedures, and application process can be found on CARB’s Recreational Marine Activities website:

http://www.arb.ca.gov/msprog/offroad/recmarine/recmarine.htm
Component Certification

?  

Thanks for listening, any questions?

dan_ostrosky@yamaha-motor.com
714-761-7715
• What is boat certification?
  – Boat builders demonstrate their product meets evaporative requirements
    • Upon completion, a CARB EO is issued to allow sale of boat into California
  – Boat builders certify an evaporative family
    • One application per evaporative family
    • An evaporative family can cover many models that utilize same type of components
Evaporative System Certification Overview

• What needs to be certified?
  – All marine watercraft with installed fuel tanks that use spark-ignition marine engines sold in California must be certified annually

• Who can certify?
  – Engine manufacturers (Honda Marine, Mercury Marine, Yamaha, etc.), or
  – Boat builders (Crestliner, Bayliner, Mastercraft, etc.)
  – Fuel System Builders/Integrators
  – Dealers
CARB Boat Certification Process

• How do I certify my boat?
  – Plan model(s) design
  – Group models into an evaporative family
  – Submit application
  – Receive Executive Order
  – Sell boat in California

• Why is CARB boat evaporative certification required?
  – Provides a formal legal document (EO) showing that the boat is compliant with CARB evaporative requirements

• A boat builder may build the boat at any point in the process, however the boat must be certified before it is sold in California
CARB Boat Evaporative Certification Process
Design-Based

**ARB**
- CARB evap component (i.e., tank, hose, canister) approval process
  - Evap components that meet California requirements are issued a CARB Component EO

  NO

  CARB reviews if evap application meets California regulations?

  YES

  CARB issues EO to Boat Builder

**Evap System Builder (e.g., Boat Builder)**
- START
- Plan model design, select CARB approved evap components from CARB Component EO list, and use CARB approved warranty/label template
- Boat Builder submits evap application to CARB
- Boat may be sold in California
- END

31
Boat Builder Planning

• Boat builders should plan the design of the evaporative system in advance
  – May have third party design evaporative system
  
  – If models remain the same as previous year, boat builders may submit previous information

• Once a design has been established, the boat builder can apply for certification
Boat Builder Responsibilities

• Boat builders demonstrate their evaporative system meets requirements
  – Design fuel system using CARB certified components
  – Placement and integration of evaporative components
  – Proper installation of complete evaporative system
  – Labeling and warranty
  – Other requirements
  – Obtain CARB EO
Boat Builder Application Process

- **Design-Based Application - Start of Model Year**
  - Boat builders submit one application for each evaporative family
  - Boat builder may submit an application at any time after they know the model design
  - On the application, reference the component EO numbers applicable to each evaporative component used in the evaporative family
  - Submit the application electronically to CARB
  - CARB reviews application and, if compliant, issues an EO
Evaporative Family

• What is an evaporative family?
  – Evaporative family means a class of evaporative components used on boats with similar fuel system characteristics
  – Evaporative families have similar fuel hose types, fuel tank types, carbon canister sizes, etc.

• Characteristics of evaporative families
  – Vented control: carbon canister vs. pressure relief valve
  – Fuel tank types: metal vs. plastic
  – Fuel hose types: U.S. EPA vs. CARB
  – Boat size: trailerable vs. nontrailerable
Evaporative Family

Example – Single Evaporative Family

<table>
<thead>
<tr>
<th>Fuel System Design</th>
<th>Evaporative Family Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Hose Type</td>
<td>A1-15</td>
</tr>
<tr>
<td>Fuel Tank Type</td>
<td>Plastic</td>
</tr>
<tr>
<td>Vent Type</td>
<td>Carbon Canisters</td>
</tr>
<tr>
<td></td>
<td>0.5L – 0-60 gallons</td>
</tr>
<tr>
<td></td>
<td>0.75L – 62-93 gallons</td>
</tr>
<tr>
<td></td>
<td>1.0L – 93-124 gallons</td>
</tr>
<tr>
<td>Trailerable or Nontrailerable</td>
<td>Trailerable</td>
</tr>
</tbody>
</table>

- All models that have these characteristics are considered **one** evaporative family and need only one certification application
Evaporative Family

Example – Two Evaporative Families

<table>
<thead>
<tr>
<th>Fuel System Design</th>
<th>Evaporative Family Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Hose Type</td>
<td>A1-15</td>
</tr>
<tr>
<td>Fuel Tank Type</td>
<td>Plastic or Metal</td>
</tr>
<tr>
<td>Vent Type</td>
<td>Carbon Canisters 0.5L – 0-60 gallons 0.75L – 62-93 gallons</td>
</tr>
<tr>
<td>Trailerable/Nontrailerable</td>
<td>Trailerable</td>
</tr>
</tbody>
</table>

• Models using plastic tanks will be in one evaporative family; models using metal tanks will be in a second family
Design-Based System Certification

• How is design-based certification useful?
  – Allows boat builders to show compliance without testing the complete evaporative system in a sealed housing for evaporative determination enclosure (SHED)
  – Reduces costs of testing
  – Reduces lead testing time
Boat Builder Responsibilities after Certification

- Must re-apply for certification each model year
- Notify CARB of changes using running change process
  - Changes to evaporative design
  - Model additions
- Boat builder is not responsible for noncompliant component
Optional Design-Based Conditional EO Certification Process

• Boat builder submits a compliance letter and requests a conditional EO

• CARB quickly issues EO within 30 days so boat builder can sell in CA without delay

• Boat builder must submit full design-based application within 90 days

• If boat builder does not submit full design-based application within 90 days, CARB revokes EO
Boat Label & Warranty

• Labels and warranty statements may be approved ahead of time

• Approval remains valid for future model years provided no changes are made

• CARB has provided templates for evaporative emissions labels and warranty statements
Boat Certification Application Templates

• Draft application, label, and warranty templates for design-based boat certification are attached

• Boat Certification workshop anticipated to be held mid 2016
  – Present certification forms and processes
  – Solicit industry input and get feedback

• Finalized application templates will be issued after workshop
Presentation Outline

Section 1: Background

Section 2: Component Certification

Section 3: Boat Certification

Section 4: Industry Cooperation
Cooperation with NMMA/ABYC to Date

• NMMA has been actively engaged with CARB
  – Working with CARB since 2006
  – Actively participated in all CARB marine workshops
  – Helped to understand the unique manufacturing process of the boat building industry
  – Organized face-to-face meeting with ABYC, industry representatives, and boat builders
  – Organized boat builder manufacturing tour
  – Helped streamline CARB marine certification
  – Provided information about current NMMA certification process
Alternate CARB Evaporative Certification Process streamlined with NMMA

**CARB**
- CARB evap component (i.e. tank, hose, canister) approval process
  - Evap components that meet California requirements are issued an CARB Component EO
  - Boat Builders select evap components from CARB Component EO list

**Evap System Builder (e.g. Boat Builder)**
- Plan model design, select CARB approved evap components from CARB Component EO list, and use CARB approved warranty/label template
- Boat Builder submits evap application to CARB
- Boat may be sold in California
- **END**

**NMMA**
- NMMA Members
  - NMMA receives component and relevant evap info from Boat Builder as a part of normal “NMMA Certified” program
  - NMMA reviews if application information is complete and correct?
    - **NO**
    - NMMA submits CARB evap application to CARB on behalf of Boat Builder
    - NMMA inspector inspects model assembly components
    - NMMA sends certification to Boat Builder
    - Boat may be sold with “NMMA Certified” label
  - **YES**
    - Boat may be sold in California
Anticipated Implementation Schedule

**Early 2016:** Begin Testing Boat Certification Components

**Mid 2016:** Begin Submitting Workshop Component Applications

**2017:** Begin Submitting Watercraft Applications

**Late 2016:** Begin Submitting Component Applications

**MY 2018:** SIMW Regulation Implemented
ARB has developed a streamlined design-based certification process for boat builders to certify SIMW and receive a California Executive Order (EO). Specifically, boat builders who want to sell in California should follow one of the following options:

**Option 1 - One-step Design-Based Certification Process:**

Boat builder (or NMMA acting on their behalf) must submit a full application and receive an EO before offering boats for sale in California. Please find listed below the documents that boat builders must submit as part of the certification application:

1. Full Design-Based Certification Application
   (See Attachment: “DESIGN-BASED CERTIFICATION APPLICATION”)

2. Sample combined U. S. Coast Guard/NMMA/ARB/EPA emissions label format template (See Attachment: “SAMPLE CALIFORNIA EVAPORATIVE EMISSIONS LABEL”)

3. Sample California emissions warranty statement template
   (See Attachment: “CALIFORNIA EVAPORATIVE EMISSION CONTROL WARRANTY STATEMENT”)

**Option 2 - Two-step Design-Based Conditional EO Certification Process:**

Please see attached flow-chart titled “Draft Proposed SIMW Optional Conditional EO Certification Process” describing the two-step design-based conditional EO certification process. The two main steps are:

1. Boat builder (or NMMA acting on their behalf) must submit a signed statement of compliance letter and receive interim approval (a conditional EO, which will be issued within 30 days of receipt of the compliance letter) before offering boats for sale in California
   (See Attachment: “DESIGN-BASED CONDITIONAL CERTIFICATION COMPLIANCE LETTER”)

2. Boat builder (or NMMA acting on their behalf) must submit a full application (including all three documents listed above in Option 1) within 90 days of the signed statement of compliance letter and receive an EO as in the one-step process.
XYZ Company (the manufacturer's legal name) hereby requests that its 20XX model year new spark-ignition marine watercraft be conditionally certified by ARB based on the compliance statements in this letter and on its commitment to provide any information needed to demonstrate full compliance with the California emission standards for new spark-ignition marine watercraft.

XYZ Company hereby makes the following statements of compliance regarding the 20XX model year evaporative certification of all of its spark-ignition marine watercraft models:

1) Conformance with the general standards and test procedure requirements specified in Title 13, Chapter 5, Article 14, sections 2850-2871 of the California Code of Regulations (CCR).
2) Conformance with the labeling (2860), warranty (2861 & 2862), tamper resistance (2856(e)), and fuel injection or equivalent performance standard (2855(a)) requirements as required in 13 CCR.
3) Conformance with the Deck Fill Plate Compatibility Standard as required in 13 CCR, Section 2855(b)(1) and with the California Fuel Compatibility Standard as required in 13 CCR, Section 2855(b)(2).
4) The XYZ Company’s production will consist of the following watercraft types: (Personal Watercraft, Outboard, Inboard, Sterndrive, Jetboat, Other). The watercraft will be (Trailerable ≤26ft, Nontrailerable >26ft).
5) Production evaporative systems shall be in all material respects the same as those for which certification is submitted.
6) The completed evaporative certification application demonstrating compliance will be submitted to ARB within 90 days of the date of this letter.
7) No watercraft will be introduced into commerce in California before the conditional Executive Order is issued.

XYZ Company will demonstrate compliance with all applicable California evaporative emission standards and requirements, including submission of a complete certification application, within 90 days of the date of this letter. XYZ Company understands that failure to adequately demonstrate compliance by the above specified date shall be cause for the Air Resources Board to revoke the conditional Executive Order, in which event any watercraft introduced into commerce under the revoked conditional Executive Order shall be deemed uncertified, and which may subject XYZ Company to enforcement actions. The projected start date for introduction into commerce in California is MM/DD/YYYY.

If you have any questions, please contact me at xxx-xxx-xxxx. Sincerely,

Manufacturer Representative’s Name
Title
Mailing Address Phone Number Email
XYZ Company hereby submits the certification application and makes the following statements of compliance regarding the 20XX model year certification of its spark-ignition marine watercraft.

1) Conformance with the general standards and requirements as required in Title 13, Chapter 5, Article 14, sections 2850-2871 of the California Code of Regulations.

2) Conformance with the Deck Fill Plate Compatibility Standard as required in 13 CCR, Section 2855(b)(1) and with the California Fuel Compatibility Standard as required in 13 CCR, Section 2855(b)(2).

3) Conformance with the labeling and warranty requirements as required in 13 CCR, Sections 2859, 2860, 2861, and 2862.

4) Conformance with the fuel injection definition or equivalent performance standard and tamper resistance requirements as required in 13 CCR, Sections 2855(a) and 2856(e), respectively.

5) Production evaporative systems shall be in all material respects the same as those for which certification is granted.

6) Installation will be completed as directed by the component manufacturer and will adhere to the specifications within the referenced component Executive Order(s).

<table>
<thead>
<tr>
<th>Fuel Tank Executive Order(s)</th>
<th>Fuel Line Executive Order(s)</th>
<th>Carbon Canister/Venting System (Diurnal) Executive Order(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>List ARB EO number(s)</td>
<td>List ARB EO number(s)</td>
<td>List ARB EO number(s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>List Fuel Tank Range</td>
</tr>
</tbody>
</table>

Manufacturer Contact Contact:
Title: Company: Address:
City, State, Zip Phone No.:
Fax No.: Email:

Production Plant Location/Contact Contact:
Title: Company: Address:
City, State, Zip Phone No.:
Fax No.: Email:

Watercraft Type
- Personal Watercraft
- Outboard
- Inboard
- Sterndrive
- Jetboat
- Other: _

Watercraft Specifications
- Trailerable (≤26ft) ___ Nontrailerable (>26ft)
- Less than 30kW ___ Greater than 30kW

Evaporative Warranty/Label Approvals
Label Approval #: NMC-2018-XXXX
Warranty Approval #: NMC-2018-XXXX
at xxx-xxxx-xxxx.

Confidential Information
a) Projected California sales(units): ________________
b) Projected 50-State Sales (units): ________________
c) Introduction into commerce date: ________________
SAMPLE CALIFORNIA EVAPORATIVE EMISSIONS LABEL
(COMBINED WITH US EPA, NMMA, AND USCG)

U.S. COAST GUARD
MAXIMUM CAPACITIES

8 PERSONS OR 1500 LBS.

2600 POUNDS, PERSONS, MOTOR, GEAR
150 HORSEPOWER MOTOR

THIS BOAT COMPLIES WITH U.S. COAST GUARD SAFETY STANDARDS IN EFFECT ON THE DATE OF CERTIFICATION

EMISSION CONTROL INFORMATION

MEETS U.S. EPA EVAP STANDARDS USING CERTIFIED COMPONENTS
AND MEETS YYYY MY CALIFORNIA EVAP EMISSION REGULATIONS FOR SPARK-IGNITION MARINE WATERCRAFT

MANUFACTURER:
MODEL:

CALIFORNIA EVAP FAMILY:
EMISSION CONTROL SYSTEM:

DESIGN COMPLIANCE WITH NMMA REQUIREMENTS IS VERIFIED. MANUFACTURER RESPONSIBLE FOR PRODUCTION CONTROL

NMMACERTIFIED
NATIONAL MARINE MANUFACTURERS ASSOCIATION

Revised 2/25/15