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# Response to Comments for Final Rulemaking for Clean Alternative Fuel Vehicle and Engine Conversions

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Compliance and Innovative Strategies Division  
Office of Transportation and Air Quality  
U.S. Environmental Protection Agency

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1. List of Commenting Organizations and Abbreviations

The abbreviations and annotations in these tables are used throughout this document to refer to various organizations that submitted written and/or oral comments on the proposed rulemaking.

**Table 1**  
**Testimony Presented at June 23, 2010 Public Hearing**

<b>Organization</b>	<b>Abbreviation</b>	<b>Docket Document Number</b>
John Webster NatGasCar LLC	NatGasCar	EPA-HQ-OAR-2009-0299-0017 EPA-HQ-OAR-2009-0299-0017.1
Bob Natkin, American Power Group, Inc.	APG	EPA-HQ-OAR-2009-0299-0018 EPA-HQ-OAR-2009-0299-0018.1
Giedrius Ambrozaitis Alliance of Automobile Manufacturers	Auto Alliance	EPA-HQ-OAR-2009-0299-0019 EPA-HQ-OAR-2009-0299-0019.1
Elio Muller Michael McAdams Gary Herwick Diesel 2 Gas Inc.	Diesel 2 Gas	EPA-HQ-OAR-2009-0299-0020 EPA-HQ-OAR-2009-0299-0020.1
John Reed Pete Petersen Omnitek Engineering	Reed	EPA-HQ-OAR-2009-0299-0021 EPA-HQ-OAR-2009-0299-0021.1
Chris Disher Flex Fuel U.S., LLC	Flex Fuel US	EPA-HQ-OAR-2009-0299-0022 EPA-HQ-OAR-2009-0299-0022.1
Jeffrey Clark, NGVAmerica	NGVA	EPA-HQ-OAR-2009-0299-0025 EPA-HQ-OAR-2009-0299-0025.1 EPA-HQ-OAR-2009-0299-0025.2
Karen Hay, IMPCO Technologies, Inc.	IMPCO	EPA-HQ-OAR-2009-0299-0028
Roger Galloway, BAF		EPA-HQ-OAR-2009-0299-0028

**Table 2**  
**Comments Received During the Comment Period**

<b>Organization</b>	<b>Abbreviation</b>	<b>Docket Document Number</b>
J. P. Pickren	Pickren	EPA-HQ-OAR-2009-0299-0007 EPA-HQ-OAR-2009-0299-0007.1
J. Petkov	Petkov	EPA-HQ-OAR-2009-0299-0009
Dr. John Reed, Core Power	Reed	EPA-HQ-OAR-2009-0299-0010 EPA-HQ-OAR-2009-0299-0012 EPA-HQ-OAR-2009-0299-0012.1 EPA-HQ-OAR-2009-0299-0013 EPA-HQ-OAR-2009-0299-0030
E. Knauss	Knauss	EPA-HQ-OAR-2009-0299-0011
Anonymous		EPA-HQ-OAR-2009-0299-0014
Certification Services International LLC	CSI	EPA-HQ-OAR-2009-0299-0016 EPA-HQ-OAR-2009-0299-0016.1
Clean Vehicle Education Foundation	CVEF	EPA-HQ-OAR-2009-0299-0026 EPA-HQ-OAR-2009-0299-0026.1
Roush Emissions Laboratory	Roush	EPA-HQ-OAR-2009-0299-0027 EPA-HQ-OAR-2009-0299-0027.1
State of Utah	Utah	EPA-HQ-OAR-2009-0299-0029 EPA-HQ-OAR-2009-0299-0029.1
T. Milton		EPA-HQ-OAR-2009-0299-0031
ConVerdant Vehicles	ConVerdant	EPA-HQ-OAR-2009-0299-0032
Anonymous		EPA-HQ-OAR-2009-0299-0033
Caterpillar, Inc.	Caterpillar	EPA-HQ-OAR-2009-0299-0034 EPA-HQ-OAR-2009-0299-0034.1 EPA-HQ-OAR-2009-0299-0048
Railroad Commission of Texas	RRCT	EPA-HQ-OAR-2009-0299-0035 EPA-HQ-OAR-2009-0299-0035.1
IMPCO Technologies, Inc.	IMPCO	EPA-HQ-OAR-2009-0299-0036 EPA-HQ-OAR-2009-0299-0036.1
NaturalDrive Partners, LLC	Natural Drive	EPA-HQ-OAR-2009-0299-0037
Texas Commission on Environmental Quality	TCEQ	EPA-HQ-OAR-2009-0299-0039 EPA-HQ-OAR-2009-0299-0039.1
ALTe LLC	ALTe	EPA-HQ-OAR-2009-0299-0040 EPA-HQ-OAR-2009-0299-0040.1
National Truck Equipment Association	NTEA	EPA-HQ-OAR-2009-0299-0042 EPA-HQ-OAR-2009-0299-0042.1
National Propane Gas Association	NPGA	EPA-HQ-OAR-2009-0299-0043 EPA-HQ-OAR-2009-0299-0043.1

Alliance of Automobile Manufacturers	Auto Alliance	EPA-HQ-OAR-2009-0299-0044 EPA-HQ-OAR-2009-0299-0044.1
American Power Group, Inc.	APG	EPA-HQ-OAR-2009-0299-0015 EPA-HQ-OAR-2009-0299-0045 EPA-HQ-OAR-2009-0299-0045.1
R.W. Wallace	Wallace	EPA-HQ-OAR-2009-0299-0047 EPA-HQ-OAR-2009-0299-0047.1
Caterpillar, Inc.	Caterpillar	EPA-HQ-OAR-2009-0299-0048
Natural Gas Industry Transportation Collaborative	The Collaborative	EPA-HQ-OAR-2009-0299-0049 EPA-HQ-OAR-2009-0299-0049.1
NGVAmerica	NGVA	EPA-HQ-OAR-2009-0299-0050 EPA-HQ-OAR-2009-0299-0050.1
Y. E. Chew	Chew	EPA-HQ-OAR-2009-0299-0051 EPA-HQ-OAR-2009-0299-0051.1
Diesel 2 Gas Inc.	Diesel 2 Gas	EPA-HQ-OAR-2009-0299-0052
American Alternative Fuel, LLC	AAF	EPA-HQ-OAR-2009-0299-0053 EPA-HQ-OAR-2009-0299-0053.1
Florida Department of Environmental Protection	Florida DEP	EPA-HQ-OAR-2009-0299-0054 EPA-HQ-OAR-2009-0299-0054
NatGasCar LLC	NatGasCar	EPA-HQ-OAR-2009-0299-0055

**Table 3**  
**Comments Submitted after the Close of the Comment Period**

<b>Organization</b>	<b>Abbreviation</b>	<b>Docket Document Number</b>
ECO, Inc	ECO	EPA-HQ-OAR-2009-0299-0058
L. Hahne		EPA-HQ-OAR-2009-0299-0057
Richard Wallace	Wallace	EPA-HQ-OAR-2009-0299-0059
Jitoo Parekh		EPA-HQ-OAR-2009-0299-0056

## 2. Introduction

On May 26, 2010 (75 FR 29606), the U.S. Environmental Protection Agency (EPA) proposed revised regulatory criteria for gaining an exemption from the Clean Air Act (CAA)<sup>1</sup> prohibition against tampering for the conversion of vehicles and engines to operate on a clean alternative fuel. The regulatory criteria were originally promulgated on September 21, 1994 (59 FR 48472), and are located in 40 CFR part 85, subpart F (“the subpart F regulations”). The revisions as finalized expand compliance options to include less burdensome demonstration requirements that will nonetheless sustain EPA's oversight and longstanding commitment to the environmental integrity of clean alternative fuel conversions.

This new approach streamlines the regulatory process and introduces new flexibilities for conversion manufacturers, while ensuring that converted vehicles and engines retain acceptable levels of emission control. The revised program also addresses the uncertainty some converters may have previously experienced in determining whether a conversion constitutes tampering that could result in liability. EPA is revising the regulatory procedures in 40 CFR part 85 subpart F and part 86, to remain consistent with the CAA yet offer an alternative to certification for manufacturers of conversion systems for older vehicles or engines. The new rules reflect the concept that it is appropriate to treat conversion requirements differently based on vehicle or engine age.

EPA held a public hearing on the proposed rules in Ann Arbor, Michigan, on June 23, 2010. Oral testimony was received and recorded. A written comment period remained open until July 23, 2010. Tables 1, 2, and 3 above show a complete list of organizations that commented on the proposal, along with the abbreviations for these organizations that are used throughout this document. All comments and hearing testimony can be found in the docket for this rulemaking. Publicly available docket materials are available either electronically through [www.regulations.gov](http://www.regulations.gov) or in hard copy at the Air and Radiation Docket, EPA/DC, EPA West, Room B102, 1301 Constitution Ave., NW, Washington, DC. See Docket ID No. EPA-HQ-OAR-2009-0299. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air and Radiation Docket is (202) 566-1742.

This Response to Comments document contains a summary of all comments we received on the proposal along with our analysis and our response.

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<sup>1</sup> Clean Air Act section 203; 42 U.S.C. 7522.



### 3. General Comments in Support of the Proposal

#### *What we proposed:*

EPA proposed to revise alternative fuel conversion regulations to simplify and streamline the compliance process and to create new compliance options for clean alternative fuel conversion manufacturers seeking an exemption from the tampering prohibition. The options would depend on the age of the vehicle or engine being converted. EPA proposed to offer new choices beyond certification for converters of older vehicles and engines, and to add new flexibilities for converters still required to obtain a certificate of conformity.

#### *What commenters said:*

This section contains comments in support of the overall rulemaking. Comments that support specific aspects of the rulemaking are incorporated into the relevant sections.

Pickren, Milton, and Caterpillar commented that they generally support this rule. Pickren commented that the proposed rule is an excellent step by EPA to support more diverse forms of energy and to reduce reliance on sources of fuel from outside the United States. Petkov commented that he would support the regulations after there is a safe, affordable, proven and tested fuel that is readily available.

APG commented in support of EPA efforts to simplify the rules for certification. Utah commented in support of the proposed revisions and encouraged EPA to continuously review the rule to find additional ways to streamline the process while maintaining a robust program. Natural Drive generally supported the rule and would like to see the California Air Resources Board (CARB) do something similar. NTEA generally supported the proposal as the current regulatory structure precludes small businesses from entering the conversions market. CVEF commented that they support and appreciate the intent of the rule and support the majority of the changes that were proposed. RRCT commented that this regulation makes genuine progress toward the goal of encouraging the development of the alternative fuel vehicle market.

#### *Our response:*

We appreciate the comments in support of the rule.

### 4. Comments on Proposed Definitions

#### 4.1 Useful Life

#### *What we proposed:*

EPA proposed to retain the statutory and regulatory definitions of useful life.

*What commenters said:*

Reed commented that he does not agree with EPA's definition of useful life as it applies to conversions based on rebuilt and remanufactured engines. Reed stated that these should be treated as new vehicles and should be eligible for certification.

Chew commented that the proposed rule would allow the useful life of a conversion to end at 120,000 miles, even if the vehicle had been optionally certified to 150,000 miles by the original engine manufacturer (OEM). Chew also commented that EPA should allow optional certification to 150,000 miles as well as CARB's certification standard for certain vehicle categories at 15 years or 150,000 miles.

*Our response:*

EPA is finalizing the applicable regulatory useful life definitions as proposed to maintain consistency between the useful life definition for OEM vehicles and engines and clean alternative fuel conversions. The definitions and procedures in this rule, including useful life, apply to clean alternative fuel conversions as defined in the rule. Engine rebuild and remanufacture provisions are set forth in 40 CFR 86.004-40.

EPA wishes to clarify that we are finalizing the determination that converted vehicles/engines must meet any standards applicable to the OEM, including optional 15 year/150,000 mile standards to which the OEM vehicle/engine may have certified. See 75 FR 29613 n. 34.

## 4.2 Clean Alternative Fuel

*What we proposed:*

The proposal defined "clean alternative fuel conversion" as "any alteration of a motor vehicle or engine, its fueling system, or the integration of these systems, that allows the vehicle or engine to operate on a fuel or power source different from the fuel or power source for which the vehicle or engine was originally certified; and that is designed, constructed, and applied consistent with good engineering judgment and in accordance with all applicable regulations."

*What commenters said:*

Knauss asked that we add a definition for allowable alternative compressed gas fuels because a number of companies are seeking to market machines that generate waste-derived fuel gases and are claiming that the fuel produced in the device can be substituted for natural gas and used in vehicles. CVEF commented that the definition of "clean alternative fuel," should be reserved for fuels with demonstrated emission benefits and demonstrated vehicle compatibility requirements. CVEF commented that novel fuel/vehicle configurations should not automatically qualify for reduced certification requirements based just on an assertion that they constitute clean alternative fuels.

*Our response:*

EPA is not adopting the suggestion that the definition of clean alternative fuel conversion should be limited to a group of fuels with proven emission benefits. These regulations establish protocols through which all fuel conversions, regardless of fuel type, may gain exemption from the tampering prohibition by demonstrating that they meet emission standards (new and intermediate age) or maintain or improve upon OEM emission levels (outside useful life). EPA believes that the requirements of the rule, and especially the demonstration provisions, are sufficient to ensure that only technically viable conversion systems will be eligible for an exemption from the tampering prohibition. If there is any question about the consistency or quality of a proposed conversion fuel, such as waste-gas derived fuels that may vary from batch to batch, EPA may require the converter's demonstration to include data or other evidence to show that the converted vehicle/engine will comply despite potential variation in fuel properties.<sup>2</sup> The broader definition of clean alternative fuel conversion appropriately allows for future introduction of innovative and as-yet unknown fuels and fuel conversion systems.

### 4.3 Clean Alternative Fuel Conversion Manufacturer

*What we proposed:*

The proposal defined clean alternative fuel conversion manufacturer (or “conversion manufacturer” or “converter”) to mean any person that manufactures, assembles, sells, imports, or installs a motor vehicle or engine fuel conversion for the purpose of use of a clean alternative fuel.

*What commenters said:*

Wallace commented that EPA should refine its definition of a “converter” as the current definition implies that everyone in the supply chain could be considered a converter which could lead to redundancy and confusion about who is responsible for demonstrations, notifications, and reporting.

An anonymous commenter stated that the term “manufacturer” needs to be clarified to include both corporate and individual entities.

CVEF commented that EPA should consider requiring some description of quality control and quality assurance procedures that kit makers will require of the entities actually performing conversions, including a procedure for assuring that the Quality Control/Quality Assurance (QC/QA) methods are complied with.

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<sup>2</sup> [http://iaspub.epa.gov/otaqpub/display\\_file.jsp?docid=23319&flag=1](http://iaspub.epa.gov/otaqpub/display_file.jsp?docid=23319&flag=1).

*Our response:*

EPA is finalizing the conversion manufacturer definition as proposed. The broad definition is intentional because any of the listed entities could meet the applicable requirements for a conversion system and achieve eligibility for the tampering exemption. However, for any given test group or engine family, EPA expects that one entity will function as the “manufacturer” for purposes of qualifying for an exemption. Should none of the listed entities follow the subpart F regulations, then all could potentially be liable for a tampering violation. EPA’s definition of converter ensures that all listed entities take responsibility for the compliance requirements and remain potentially liable if the requirements of the rule are not met.

The definition of clean alternative fuel conversion manufacturer is applicable to both individuals and corporate entities. See CAA section 302(e) (definition of “person”).

EPA agrees that it is important for conversion installations to be properly applied. Under the regulations the conversion manufacturer is responsible for its proper installation, even if that entity is not physically installing the conversion. EPA does not believe that a review of the QC/QA procedures is necessary, since the clean alternative fuel conversion manufacturer has a strong interest in creating products that are easily installed correctly and QC/QA methods that are strictly followed.

#### 4.4 Model Year

*What we proposed:*

The proposed regulations stated that conversion model year means the clean alternative fuel conversion manufacturer’s annual production period which includes January 1 of such calendar year. A specific model year may not include January 1 from the previous year or the following year. The term conversion model year means the calendar year if the converter has no different annual production period.

*What commenters said:*

NGVA commented that EPA should define the “model year” period differently in the context of systems intended to be installed on “used” vehicles or engines. The comments stated that that the CAA definition of ‘model year’ was intended for new vehicles, and that the definition limiting the model year to a period of one year that includes only January 1 was intended to prevent OEMs from manufacturing and selling vehicles in future years while claiming they are earlier model year vehicles subject to less stringent emissions standards. NGVA stated that this concern is not relevant in the context of conversions.

*Our response:*

The CAA, EPA regulations, and EPA certification and compliance programs all apply the same definition to the term “model year,” which is why we are finalizing, as proposed, a consistent definition of conversion model year for this rule. A consistent definition is necessary to implement sales volume and other reporting requirements that are applicable to both new vehicle manufacturers and conversion manufacturers.

## 5. Comments on Proposed Requirements

### 5.1 Applicable Emission Standards

*What we proposed:*

EPA proposed to maintain the previous determination that converted vehicles and engines still within their useful life would qualify for an exemption from tampering by meeting the same standard that was in place for the OEM vehicle/engine. We also proposed that the certification demonstration for clean alternative fuel conversions must be based on the certification procedures, including test procedures, specified in 40 CFR part 86, subpart A, B and/or S and 40 CFR part 1065, as applicable. Light-duty alternative fuel OEM vehicles and conversions are exempt from Supplemental Federal Test Procedure (SFTP) standards and cold carbon monoxide (CO) standards. However, SFTP and cold CO standards do apply for dual-fuel and mixed-fuel<sup>3</sup> light-duty vehicles while the vehicle is operating on gasoline or diesel fuel. We requested comment on whether SFTP standards and testing would be appropriate for alternative fueled light-duty vehicles, including both OEM vehicles and clean alternative fuel conversions.

*What commenters said:*

Reed commented that the proposed rule did not go far enough to improve air quality. He stated that EPA should challenge converters to exceed the OEM standards by requiring conversions of 2007 and older model year heavy-duty engines to meet a minimum standard equivalent to the 2007 California standard, and model year (MY) 2008 and newer vehicles and engine conversions to meet either the 2010 emission standards, or the current MY standard if the vehicle/engine is newer than MY2010. Reed commented that vehicles that meet these emission standards should then be eligible for certification.

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<sup>3</sup> Mixed-fuel vehicles or engines are able to operate on either the original fuel(s) or the alternative fuel(s), or on a mix of the fuels. Mixed-fuel vehicles/engines are capable of combusting the different fuel types together in the engine. The proposal used the term “flex-fuel” to describe this type of technology. Because there are multiple uses and definitions of the term “flexible-fuel” in 40 CFR Part 86, in this rule we call this category of fuel conversion “mixed-fuel.” This definition only applies to clean alternative fuel vehicle and engine conversions.

IMPCO commented that EPA should not require SFTP or cold CO testing as it is not required for OEMs. IMPCO also commented that EPA should clarify/specify that conversions must meet any OEM greenhouse gas (GHG), carbon dioxide (CO<sub>2</sub>), or other Family Emission Limit (FEL) standards established by the OEM.

NPGA commented that EPA should not add the US06 drive cycle test to the demonstration requirements for alternative fueled vehicles, which have been exempt from this test since 1996. The comments stated that EPA did not present evidence to support adding a US06 cycle requirement. The added test would increase the regulatory burden on conversion manufacturers and defeat the intent of the proposed rulemaking. NPGA also commented that SFTP and cold CO standards are not needed for alternative fueled light-duty vehicles.

The Auto Alliance commented that EPA should require the US06 test to ensure adequate catalytic converter protection. The Auto Alliance also suggested that a better method for demonstrating compliance with this requirement would be for the converter to supply data showing that catalytic converter temperatures generated while the vehicle is being operated on the alternative fuel are the same as or less than the catalytic converter temperatures generated while the vehicle is being operated on the original fuel.

Wallace commented that EPA should not require SFTP or US06 testing. Wallace also commented that if a converter could certify a dual-fuel vehicle to a lower standard on the alternative fuel, EPA should recognize the lower standard.

Chew commented that EPA should require SFTP, US06, and high speed, acceleration cycles to be included in the certification demonstration for alternative fuels vehicles to ensure a level playing field for all dedicated, dual-fuel and mixed-fuel light-duty vehicles. Chew also asked for clarification about whether Highway Fuel Economy Test (HFET) test procedures and standards are required as well as the Federal Test Procedure (FTP).

The Collaborative commented that they oppose unnecessary testing requirements, such as US06 testing and evaporative testing for dedicated compressed natural gas (CNG) vehicles. The comments also stated that CNG conversion kit manufacturers should be subject to only those tests required for OEMs that are relevant to the types of systems being installed.

NGVA commented that EPA should not require US06 testing because it is not appropriate for EPA to impose a requirement for aftermarket manufacturers that is more onerous than that required for OEMs.

*Our response:*

EPA is finalizing the proposed requirement that to qualify for an exemption from tampering, converted vehicles and engines must meet the same standards that were in place for the OEM vehicle or engine, in almost all cases. Thus, the applicable standards

for an inside useful life clean alternative fuel conversion will be the same as the applicable standards for the OEM vehicle or engine, as measured over the same test procedures, such as FTP and HFET, where appropriate. EPA is adopting this requirement to ensure that there is no emissions degradation with conversion. This long-standing policy protects air quality and satisfies a condition necessary to grant an exemption from the CAA tampering prohibition. Although EPA does not think it is appropriate in this rulemaking to require conversions to certify to lower standards, clean alternative fuel conversion manufacturers may optionally demonstrate compliance with and certify inside useful life vehicles and engines to lower standards than were in place for the OEM. The process by which manufacturers may certify to a lower standard is described in the final rule in Clean Alternative Fuel Vehicle and Engine Conversions; Final Rule, Section III.F.1. Manufacturers who wish to certify a dual-fuel conversion system to a more stringent standard must demonstrate compliance with the lower standard on both fuels. EPA does not agree with Wallace's comment that EPA should certify dual-fuel conversions to the lower standard on the basis of a demonstration that the conversion can meet the lower standard on the new alternative fuel. EPA views Wallace's suggested approach as inadequate because dual-fueled vehicles, by design, are capable of operating on both fuels. Therefore, the vehicle could still run on the original fuel post conversion. Without data demonstrating the converted vehicle meets the lower standard on the original fuel as well as the new alternative fuel, EPA has insufficient basis for certifying that the dual-fuel conversion will meet the lower emission standard in use.

Commenters did not provide data to support the concern that catalyst temperatures would rise as a result of combustion on typical alternative fuels. However, should EPA have any concerns about catalyst temperatures generated during operation on a new fuel, EPA may ask the converter to supply data showing that these temperatures remain within a range that is comparable to the catalytic converter temperatures generated while the vehicle is being operated on the original fuel. Since US06 and cold CO standards do not apply to OEM alternative fuel vehicles,<sup>4</sup> EPA is not finalizing US06 or cold CO testing requirements for light-duty conversions. However, any new test procedures or standards that apply to OEM alternative fuel vehicles/engines in the future would also apply to future fuel conversions, unless specifically exempted.

IMPCO's comments questioned whether GHG, CO<sub>2</sub> and FEL standards apply to conversions. As stated previously, in almost all cases, the standards in place for an OEM vehicle or engine continue to apply to the converted vehicle or engine. This includes GHG and CO<sub>2</sub> standards that are applicable to the OEM vehicle/engine and any FELs that are applicable to the OEM vehicle/engine. The applicability comment raised two issues unique to clean alternative fuel conversion compliance with light-duty GHG standards<sup>5</sup> that EPA wishes to address specifically. First, although OEMs must comply with both certification and fleet average GHG standards, fleet average GHG standards are not appropriate for clean alternative fuel conversions.<sup>6</sup> Consistent with our past practice, this was EPA's intent in the GHG rule, and the final Clean Alternative Fuel Vehicle and

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<sup>4</sup> 40 CFR 86.1810-01(i)(4).

<sup>5</sup> 75 FR 25324 (May 7, 2010).

<sup>6</sup> See section 12.1 of this document.

Engine Conversions rule adds a provision making that intent explicit. See Clean Alternative Fuel Vehicle and Engine Conversions; Final Rule, Section V.C. Second, the process by which clean alternative fuel manufacturers may demonstrate compliance with certification GHG standards was not addressed in the proposal. This process is spelled out in the final rule and is also explained below.

OEMs comply with light-duty GHG standards by submitting GHG emissions data to EPA representing almost every subconfiguration in their fleet.<sup>7</sup> Although these compliance provisions require extensive testing, they do not impose an additional testing burden because OEMs already conduct the testing to satisfy fuel economy standards and fuel economy labeling requirements.<sup>8</sup> EPA considered requiring conversion manufacturers seeking exemption from the tampering prohibition to also submit test data for every subconfiguration within a conversion test group to demonstrate that the fuel converted vehicle meets the applicable GHG standards. However, testing at this granularity would be especially burdensome for an industry that is not subject to EPA fuel economy labeling and to which the Corporate Average Fuel Economy (CAFE) program does not apply. Instead, EPA believes it is reasonable to allow converters to submit GHG data for the emission data vehicle (EDV) within the conversion test group. Although EPA will allow conversion manufacturers to submit one data set to represent the test group, EPA expects any subconfiguration within the test group to also comply with the OEM nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>), and CO<sub>2</sub> standards for that subconfiguration, and EPA may choose any subconfiguration within the test group for confirmatory testing.

The N<sub>2</sub>O and CH<sub>4</sub> standards are clearly set forth in 40 CFR 86.1818-12(f)(1); however, it is more challenging to identify the CO<sub>2</sub> or carbon-related exhaust emission (CREE) standard for each vehicle, since the light-duty GHG standards require that OEMs report actual test values for CREE. EPA evaluated several options to clearly identify the CREE standards to which a vehicle fuel conversion must comply. EPA considered requiring the conversion manufacturers to comply with the CREE values reported by the OEMs; however, this approach would be fundamentally different than meeting any other pollutant standard as it applies to fuel conversion, since all other standards generally have compliance “headroom” that allows for testing and production variability. For instance, with a specified certification emission standard, such as the Tier 2 “bins,” OEMs typically over-comply with the standard to give themselves some cushion for potentially higher in-use testing results due to emissions performance deterioration and/or normal test-to-test variability. However, for the OEM CO<sub>2</sub> standards, the actual certification vehicle emission test results are used to calculate their fleet average. Thus, manufacturers cannot over-comply since the vehicle subconfiguration test result will always be the value used in determining their CO<sub>2</sub> fleet average.<sup>9</sup> For purposes of light-duty GHG OEM in-use testing, EPA determined it was appropriate for OEM vehicles to have a compliance margin above the

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<sup>7</sup> *Id.*

<sup>8</sup> See 40 CFR part 600.

<sup>9</sup> Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards EPA Response to Comments Document for Joint Rulemaking. EPA-420-R-10-012a (April 2010). Page 5-339. See docket ID EPA-HQ-OAR-2009-0472-11581[1].



reported value:<sup>10</sup> “The intent of the separate in-use standard, based on a 10% compliance factor adjustment, is to provide a reasonable margin such that vehicles are not automatically deemed as exceeding standards simply because of normal variability in test results.”<sup>11</sup> For these same reasons, EPA believes it is appropriate to use the light-duty GHG in-use standard as the GHG standard that a fuel converted vehicle must meet. Therefore, EPA has determined that if the OEM vehicle was subject to GHG standards, fuel converted vehicles must meet the applicable N<sub>2</sub>O, CH<sub>4</sub>, and CO<sub>2</sub> (CREE) subconfiguration standards that apply to the OEM vehicles as set forth in 40 CFR 86.1818-12(d) and 40 CFR 86.1818-12(f).<sup>12</sup> As described above, the CREE standard contains a 10% adjustment factor applied to the initial OEM test results to account for test-to-test variability and OEM production margin.<sup>13</sup>

Similar to the OEM certification process for light-duty GHG, the clean alternative conversion manufacturer may use the same EDV that is used to support criteria pollutant testing and standards, and the CREE, N<sub>2</sub>O and CH<sub>4</sub> test results must demonstrate that the converted vehicle meets the OEM N<sub>2</sub>O and CH<sub>4</sub> standards set forth in 40 CFR 86.1818-12(f) and the OEM subconfiguration CO<sub>2</sub> standard set forth in 40 CFR 86.1818-12(d)<sup>14</sup> for the OEM subconfiguration that matches the conversion EDV. In addition, EPA may test or request the conversion manufacturer to test other subconfigurations within the conversion test group, and those results must also demonstrate compliance with the appropriate subconfiguration standard in 40 CFR 86.1818-12(d).

EPA also wishes to clarify how fuel conversion manufacturers may be able to comply with the GHG standards if the EDV cannot meet the N<sub>2</sub>O and CH<sub>4</sub> cap standards set forth in 40 CFR 86.1818-12(f)(1). 40 CFR 86.1818-12(f)(2) sets forth an alternative to meeting the N<sub>2</sub>O and CH<sub>4</sub> exhaust emission standards in 40 CFR 86.1818-12(f)(1). However, 40 CFR 86.1818-12(f)(2) is not available to fuel conversion manufacturers, since there is no GHG fleet average standard for fuel converted vehicles. Therefore, EPA is adding a third option, specific to fuel conversion manufacturers, that allows the same process set forth in 40 CFR 86.1818-12(f)(2), but that is adapted for the unique situation of clean alternative fuel conversion manufacturers. This alternative requires that the fuel conversion manufacturer determine a CREE value (including N<sub>2</sub>O and CH<sub>4</sub>) specific to the fuel conversion EDV, even if the OEM did not use N<sub>2</sub>O and CH<sub>4</sub> in the CREE

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<sup>10</sup> Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards EPA Response to Comments Document for Joint Rulemaking. EPA-420-R-10-012a (April 2010). Page 5-340. See docket ID EPA-HQ-OAR-2009-0472-11581[1] (“EPA believes it is appropriate to set an in-use standard that provides a reasonable cushion for in-use variability that is not accounted for in the test level used to determine compliance with the fleet average. EPA proposed a factor of 10% that would serve this function. The factor would only be applicable to CO<sub>2</sub> emissions, and would be applied to the model-level test results that would be used to establish the model-level in-use standard.”)

<sup>11</sup> *Id.*

<sup>12</sup> 75 FR 25474 (May 7, 2010). If the OEM complied using the light-duty greenhouse gas fleet averaging option for nitrous oxide (N<sub>2</sub>O) and methane (CH<sub>4</sub>), as allowed under 40 CFR 86.1818-12(f)(2), the calculations of the carbon-related exhaust emissions require the input of grams/mile values for N<sub>2</sub>O and CH<sub>4</sub>.

<sup>13</sup> 75 FR 25473 (May 7, 2010).

<sup>14</sup> See footnote 11.

calculation. This value must meet the sub-configuration-specific in-use CO<sub>2</sub> exhaust emission standard, set forth in 40 CFR 86.1818-12(d) and determined by the OEM.

## 5.2 Useful Life

### *What we proposed:*

EPA proposed to leave unchanged the determination that was made in the 1994 subpart F rulemaking that it is not appropriate to extend the useful life of a conversion beyond that of the original vehicle/engine.

### *What commenters said:*

Caterpillar commented in support of the useful life proposal.

### *Our response:*

EPA is finalizing the useful life period as proposed. We continue to agree with the determination made in the 1994 subpart F rulemaking and with Caterpillar's comment that it is not appropriate to extend the useful life of a conversion beyond that of the original vehicle/engine given that conversions generally rely on many original components for proper operation.

## 5.3 Availability of Certification Demonstration for Outside Useful Life Vehicles and Engines

### *What we proposed:*

EPA proposed that the certification demonstration would only be available for conversion of vehicles and engines within their useful life. For outside useful life vehicles and engines, EPA proposed an alternative demonstration and notification process.

### *What commenters said:*

Reed commented that EPA should give manufacturers the opportunity to certify older vehicles and engines and allow rebuilders/remanufacturers to certify.

NGVA commented that EPA should incorporate all three age-based categories under its certification process instead of creating a separate approval process for intermediate age and outside useful life vehicles.

### *Our response:*

EPA is finalizing as proposed the certification demonstration and notification protocols for exemption of new vehicle and engine conversions from the tampering

prohibition. Certification is also optionally available for intermediate age vehicle and engine conversion manufacturers. EPA is also finalizing as proposed the determination that certification is not available for outside useful life vehicles and engines. Certification is not available for vehicles and engines that have exceeded their regulatory useful life because the standards to which a manufacturer would certify no longer apply outside useful life and EPA therefore has no basis for certifying that a converted outside useful life vehicle/engine meets applicable standards.

#### 5.4 Groupings, Carry-over, Carry-across, and Emission Data Vehicle/Engine Selection

##### *What we proposed:*

We proposed to allow conversion manufacturers to combine OEM test groups /engine families into larger conversion test groups/engine families, under certain circumstances.<sup>15</sup> We proposed to continue to require that the conversion test group/engine family be represented by a “worst case” emission data vehicle/engine (EDV/EDE). We also proposed to allow the conversion manufacturer to carry-over data if the OEM used carry-over provisions to certify the vehicle/engine being converted. The proposed grouping criteria would generally not allow fuel converters to combine OEM test groups from multiple model years, or to combine test groups from different OEMs. For EDV/EDE selection, we proposed that conversion manufacturers must use the applicable criteria to designate a conversion group, and must select a “worst case” EDV/EDE to represent the group for demonstration and notification purposes.

##### *What commenters said:*

NPGA commented in support of the grouping criteria proposal.

APG commented in general support of the proposed test group flexibilities, but requested clarification on only allowing converters to combine vehicles from the ‘same OEM and OEM model year’ because many heavy-duty vehicles use the same engines. Further, APG commented that EPA should allow vehicles across model years into the same grouping if the engine, engine controls and emissions technology is unchanged.

RRTC supported the proposal to broaden the criteria that are used to group vehicles for the purposes of certification. They further commented that using the vehicle with the worst gasoline emissions as the representative vehicle of the group is a reasonable way to ensure compliance while lowering manufacturer testing costs.

ALTe supported the concept of broader test groups but requested additional flexibility, especially for conversion technologies that not only change the OEM fueling system but also replace most of the OEM emission control system. ALTe commented that conversion test groups for such technologies should be allowed to represent multiple

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<sup>15</sup> See 75 FR 29617-29618 and 75 FR 29620-29621.

model years and similar vehicles produced by different OEMs when such combinations can be supported by good engineering judgment.

Flex Fuel US commented that converter test groups should be combined based on the engineering design of the fuel conversion technology, vehicle type, and engine classification.

The Auto Alliance commented that EPA should not allow conversion manufacturers to combine multiple OEM test groups or durability groups under a single conversion test group.

Wallace commented that he supports broader test groups.

The Collaborative commented that conversions applied to vehicles/engines in the same weight class and at the same emissions level should be able to be represented by a single test group and to share a single certificate.

NGVA commented that EPA should develop procedures to allow manufacturers to combine test groups of vehicles manufactured by different OEMs.

Chew commented that EPA's concept of test groups may need to be modified to address new technologies such as flexible fuel technology.

AAF supported the proposed grouping of vehicles into larger test groups because grouping vehicles is an economical way to test provided that the worst case vehicle is used to demonstrate compliance with the standard.

ECO commented that good engineering judgment dictates that engine family groupings only be allowed for test groups using the same base technology and similar hardware and calibration levels.

IMPCO commented that EPA should allow manufacturers to certify intermediate age vehicle and engine conversions under a system similar to European regulations governing liquefied petroleum gas (LPG) and CNG retrofit systems. IMPCO stated that these regulations allow conversion system manufacturers to certify multiple vehicles and vehicle manufacturers by demonstrating that the same engine type and emission strategy is used across the board.

EPA received comments from ConVerdant, NPGA, ECO, AAF, CSI, and NatGasCar that requested more flexibility to apply a single set of emission test data across OEM test groups spanning multiple model years. NPGA urged EPA to allow emissions data to carry forward (or backward) to a different model year. The comments stated that expanded carry-over and carry-backward of test data can result in savings in testing expenses and laboratory test time.

ECO commented that carrying an aftermarket certification backward or forward (across model years) for vehicles using the same engine and emissions control system with minor changes seems like an application of good engineering judgment, provided that the testing demonstration is completed on the vehicle certified to the lowest standards.

EPA also received comments regarding EDV selection. Wallace stated that the requirement that manufacturers choose and test a worst case EDV to represent the test group/engine family is too harsh a standard and that instead an average EDV should be allowed. NPGA commented that use of the worst-case EDV to determine emission compliance appears to be an equitable approach to meeting this provision of the regulations. The Auto Alliance commented that the selection of a worst-case EDV would not correct for an overly-broad grouping, as the effects of an alternative fuel on a vehicle's emissions and emissions durability cannot be predicted by a single worst-case EDV. RRCT commented that using the worst emissions as representative of the group is a reasonable way to ensure compliance while lowering manufacturers' testing costs.

*Our response:*

EPA is finalizing as proposed the criteria conversion manufacturers may use to combine OEM test groups. These criteria generally do not allow converters to combine OEM test groups from multiple model years, nor do they allow fuel converters to combine test groups from different OEMs.

EPA does not agree with comments suggesting that the flexibilities should be further expanded for converters. Nor does EPA agree that the European approach, which allows a common LPG or CNG conversion kit design to be installed across many vehicle models, provides an adequate demonstration that post-conversion emissions will be maintained for a broad grouping of vehicles/engines. Emission control strategies can and often do differ in critical ways among manufacturers, or even among product lines of a single manufacturer. EPA did not receive any data or other evidence to alleviate concerns that these differences could result in variable emissions performance among vehicles/engines in the broader grouping, even if some features such as engine displacement are identical. For example, even among vehicles with the same engine displacement and cylinder configuration, other technical features, especially those involving variation in catalyst type, arrangement, or strategy, are likely to be different enough to warrant concern that the emissions will be very different after the vehicles are converted. Different manufacturers rarely use identical emissions-related hardware and software. Manufacturers may change components and strategies between model years as technology improves. The engine controller software will likely reflect these different strategies, so there is no assurance that a given conversion system will operate similarly or remain durable on one manufacturer's vehicle compared to another, or on different model year vehicles of an individual manufacturer. EPA does not have confidence that significant broadening of conversion test group/engine family criteria, or expansion of carry-over/carry-backward/carry-across provisions can be allowed without compromising assurance that the conversion system will achieve equivalent emission control across the

full test group/engine family. EPA believes the criteria for conversion test group/engine family combinations, which were first included in guidance on June 20, 2009 and which EPA is codifying in this final rule, represent an appropriate balance between reducing compliance burden for converters and fulfilling EPA's responsibilities to ensure that all vehicles/engines remain clean.

With respect to the APG comment about allowing engine compliance to apply to multiple heavy-duty chassis builders, this rule does not change current regulations under which OEMs certify heavy-duty highway engines to engine standards. The certified engine may be used in multiple heavy-duty chassis applications, with the appropriate chassis applications only being limited by the OEM.

EPA disagrees with the Auto Alliance comments that the current part 86 OEM test group criteria should also apply to fuel converters. We believe the age-based approach in this rule, including flexibility to combine OEM test groups into larger conversion test groups, satisfies the dual objectives of maintaining environmental protections while offering efficiencies in testing and reporting requirements.

EPA is not finalizing additional flexibility for carry-over and carry-across. Converters will continue to be able exercise the same carry-over or carry-backward approach as the OEM. Converters may carry-over/across test data from one model year to the next if the OEM did.

EPA disagrees with the ECO comment that data can be carried across model years to show compliance with a less stringent emission standard, such as a Tier 2 Bin 8 standard, when a fuel converter has demonstrated compliance to a more stringent standard, such as a Tier 2 Bin 5 standard for a "similar" vehicle. Given the interaction of the alternative fueling control system with the OEM's test group specific emission control system, we believe that emission compliance is not necessarily ensured for the test group certified to a less stringent standard.

EPA considered the ALTe comment regarding expanded test groups for conversion technologies that replace most of the OEM's emission control system. EPA is finalizing the test group/engine family combination criteria as proposed. However, conversion manufacturers seeking exemption for technologies that replace a vehicle's entire emission control system and ALL components that may affect the vehicle's emission control strategy may approach the Administrator to request some additional flexibility for vehicle test group combinations.

EPA does not agree that a worst case EDV/EDE is too harsh of a standard to be used in conjunction with expanded conversion test groups. EPA requires selection of a "worst case" test vehicle/engine for many regulatory requirements. This vehicle/engine is expected to represent the most challenging emissions compliance configuration of all the models it represents and gives EPA confidence that all models covered by the compliance grouping will meet applicable emission standards. EPA will address the Auto Alliance concern about the sufficiency of a worst case EDV/EDE to represent a test group by

examining the fuel converter's basis for EDV/EDE selection and EDV/EDE appropriateness in representing the combined test group/engine family. Should EPA have concerns about whether the EDV/EDE adequately represents the grouping, EPA may request additional data from other vehicles or engines in the group.

## 5.5 Warranty

### *What we proposed:*

We proposed to maintain EPA's existing warranty policy with regard to alternative fuel conversions as set forth in the subpart F regulations. The general requirement is that conversion manufacturers must accept in-use liability for warranty and recall as a condition for gaining an exemption from tampering. We sought comment on the best way to inform consumers about the possibility that converting their vehicle or engine may transfer portions of their OEM warranty liability to the converter.

### *What commenters said:*

NPGA commented that EPA should require a note on the vehicle label to increase consumers' ability to understand the possible transfer of liability to the converter. NGVA commented that the final rule should provide additional guidance regarding warranty liability and make it unequivocally clear that a conversion does not void the original OEM warranty. Wallace expressed support for the NGVA proposal. Caterpillar recommended that EPA mandate a conversion warranty statement that clearly states that the conversion may affect or potentially void parts of the OEM warranty. Caterpillar also recommended that conversion manufacturers state that their emission warranty is not tied to OEM branded parts or service. Chew suggested that the warranty should be extended from the date of the conversion by a minimum of 2 years or 24,000 miles. Chew further commented that it is difficult for an end user to prove that any problems a vehicle may have after a conversion is as the result of that conversion. Therefore, EPA should require the converter and the consumer to sign a form to this effect prior to the conversion that outlines the responsibilities of each party.

### *Our response:*

EPA is finalizing the conversions warranty provisions as proposed, which maintains EPA's longstanding policy. Generally, the clean alternative fuel conversion manufacturer maintains liability for problems that occur as a result of conversion, while the OEM retains responsibility for the performance of any covered parts or systems that retain their original function following conversion and are unaffected by the conversion. Thus conversion in and of itself does not void the OEM warranty but neither are OEMs liable for repairs if a problem can reasonably be traced to conversion. EPA notes that although the commenters offered different approaches and regulatory adjustments to the warranty provisions, all the suggested approaches are in general agreement. All the commenters' suggested approaches aim to provide additional notice to consumers of the potential transfer of warranty obligations between the OEM and conversion

manufacturer, and oversight that warranty claims will be properly honored and distributed between the OEM and the conversion manufacturer. EPA agrees with those general goals and recognizes that consumers and converters need accurate information about OEM and converter warranty responsibilities. To that end, EPA has previously issued guidance on the topic of conversion warranties.<sup>16</sup> EPA also plans to use its website to inform the public about warranty implications of vehicle/engine conversion, including potential confusion and even disputes over whether the OEM or the conversion manufacturer is responsible for any given warranty problem.

EPA came to this decision after considering each commenter's specific suggestion. In response to NPGA's suggestion that a warranty statement be placed on the Vehicle Emission Control Information (VECI) label, EPA finds this added requirement unfeasible due to space constraints in the label. See section 5.9 for labeling comments. NGVA and Wallace urge EPA to make clear that a conversion does not void the OEM manufacturer warranty; EPA believes this is clear: the clean alternative fuel conversion manufacturer maintains liability for problems that occur as a result of conversion, while the OEM generally retains responsibility for the performance of any parts or systems that retain their original function following conversion and are unaffected by the conversion. Caterpillar would like to require additional warranty statements on conversion kits. EPA believes that conversion manufacturers will strive to clearly communicate warranty implications in the interest of satisfying their customers. Chew has suggested lengthening the CAA warranty time period. That comment is not germane to our request for comments on the best way to inform consumers about the possibility that converting their vehicle or engine may transfer portions of their OEM warranty liability to the converter and as such is outside the scope of this rulemaking. Chew also suggested that EPA require a conversion manufacturer and consumer to sign a written agreement memorializing each party's responsibilities. EPA does not have a practical way to track compliance with such a requirement or to enforce against converters and consumers who do not sign the agreement.

EPA again notes, for clarity, that the applicable CAA and regulatory warranties continue to apply to the converted vehicle/engine according to the original OEM warranty period. Therefore all CAA warranty requirements continue to apply to parties as discussed in Clean Alternative Fuel Vehicle and Engine Conversions; Final Rule, Section III.F.5. EPA believes this approach continues to be appropriate and reasonable.

## 5.6 Onboard Diagnostics (OBD)

*What we proposed:*

EPA proposed to require converters to demonstrate that the OBD system continues to function properly post-conversion on any vehicle/engine for which OBD was required in the OEM configuration. The proposed demonstration requirements

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<sup>16</sup> [http://iaspub.epa.gov/otaqpub/display\\_file.jsp?docid=23319&flag=1](http://iaspub.epa.gov/otaqpub/display_file.jsp?docid=23319&flag=1) and [http://iaspub.epa.gov/otaqpub/display\\_file.jsp?docid=14296&flag=1](http://iaspub.epa.gov/otaqpub/display_file.jsp?docid=14296&flag=1).



differed among the three age categories. New vehicle/engine converters would need to complete OBD testing as has previously been required for certification. Intermediate age vehicle/engine converters would attest that the OBD system on the converted vehicle/engine continues to properly detect and identify malfunctions in all monitored emission-related systems or components. Additionally, EPA sought comment on whether a readiness flag demonstration is appropriate for intermediate age vehicles, similar to the Option 3 demonstration for vehicles and engines outside of useful life. For outside useful life vehicles and engines, we proposed the same OBD demonstration requirement as in the intermediate age program to prove continued compliance with OBD requirements and provide an attestation that the OBD system remains fully functional. The Option 3 outside useful life program included an OBD scan tool check as described above.

*What commenters said:*

CVEF commented that the streamlined OBD demonstration EPA proposed for intermediate and outside useful life age categories is insufficient to ensure system functionality. The comments stated that claims made by kit makers and converters in the past have turned out to be unfounded and that the proposed OBD attestation and readiness demonstration is inadequate. CVEF commented that the OBD scan procedure proposed by EPA as part of the Option 3 demonstration may be susceptible to false negatives. Therefore, EPA should consider requiring a full OBD test data demonstration in addition to the attestation statement.

Roush commented that EPA should require a full OBD demonstration for both the intermediate age and outside useful life programs, involving data submission from the vehicle/engine operating on the original and conversion fuels. The OBD demonstration Roush suggested would be accomplished on both the original and conversion fuels by resetting the readiness indicators and performing a series of drive cycles to demonstrate that all required OBD monitors run and indicate a pass/fail result. The numerical OBD test results and failure thresholds (Mode \$06 results) would be recorded and submitted. The mode \$06 results from each fuel type could be evaluated by EPA for adequate separation from the failure threshold. EPA could then infer that the similar OBD monitor results on both fuels in a properly functioning emissions system would likely indicate that the monitor results would also be similar if the emissions system should fail. For those diagnostics that may not have mode \$06 data available, applicable engine operating parameter data could be recorded in its place. A statement of compliance regarding the readiness indicators for each monitor would be provided to EPA. The statement would include the Mode \$06 test results, failure thresholds and any pertinent engine operating parameters deemed useful in demonstrating the monitors effectiveness (*i.e.*, long- and short-term fuel trims).

Utah commented that, for intermediate age and outside useful life vehicles, EPA should require proof of OBD functionality up front rather than after the fact, such as during an audit. Utah suggested applying the outside useful life Option 3 OBD scan tool demonstration for both intermediate age and outside useful life conversions. Utah commented that without such a procedure for intermediate age vehicles (and outside

useful life vehicles should EPA finalize Option 1), the requirement that the installer need only attest that the OBD system is fully functional raises several concerns. First, the question of who would be required to do the attestation is not addressed. Second, EPA did not address the associated costs of enforcing this requirement or whether EPA would have adequate resources to perform audits of the installations. Lastly, EPA did not define what documentation would be required to verify that the conversion does not interfere with the OBD system. Utah commented that an Option 3-like OBD demonstration would provide EPA the highest assurance that the OBD system has not been tampered with and remains fully functional. Utah commented that EPA should adopt the good engineering approach in Option 1 for outside useful life vehicles that are not equipped with OBD.

ALTe commented that EPA should give converters a time extension to comply with OBD requirements. The comments stated that extra time is needed to address the challenge of designing OBD systems for technologies such as theirs, which apply a single system powertrain concept to many different vehicles of different makes, model years and OEMs. Further, ALTe stated that converters may not have access to the OEMs' proprietary OBD software. Converters must invest extensive time and capital to identify the numerous conditions which would cause MIL light activation. ALTe commented that OBD system development takes approximately two years for each major vehicle make and platform.

NGVA commented that EPA should refine the criteria for an acceptable OBD attestation. NGVA noted that the preamble statement that an application for certification or approval "must contain any applicable statements of compliance or attestations and an OBD approval letter from the CARB or an EPA OBD approval letter if the vehicle will be sold only in States which have not adopted the California emissions standards" appears to give CARB approval too much weight. NGVA commented that the statement should instead require "an EPA OBD approval letter or a CARB OBD approval letter if the conversion systems will be sold in California or a state that only accepts CARB aftermarket conversions." NGVA noted that many states have adopted CARB requirements for new vehicles but only a few have adopted CARB requirements for aftermarket conversion systems.

Chew suggested the need for independent review of OBD data for vehicles in the intermediate age program if sales in a test group exceed 5,000 vehicles. He also stated that self attestation did not work during implementation of the Energy Star Program.

CSI and NatGasCar commented that one OBD demonstration per manufacturer is sufficient and that fuel converters should be allowed to carry over an OBD demonstration if the OEM uses "similar" OBD family designations from one model year to the next.

CSI, NatGasCar, and Flex Fuel US asked EPA to publish the OEM OBD groups so converters may determine what OEM test groups may combined when certifying under the new vehicle program.

ECO commented that EPA should allow more OBD carry-across for fuel converters that are exercising good engineering judgment

RRCT commented that EPA should require proof of OBD compliance for outside useful life vehicle conversions.

AAF expressed support for requiring OBD testing for intermediate age and outside useful life vehicles.

NPGA stated that conversions deemed compliant under the intermediate age program could have poorly designed OBD systems if attestations are not required to be supported by test data.

Flex Fuel US commented that EPA should extend the use of good engineering judgment in lieu of requiring actual OBD data.

The Auto Alliance suggested retaining current part 86 OBD demonstration requirements for all fuel converters.

Reed commented that the readiness flag demonstration for intermediate age vehicles is inappropriate and that EPA should rely on state emissions testing for vehicles equipped with OBD.

*Our response:*

EPA is finalizing the OBD requirement as proposed for new vehicle and engine conversions, and is adding an OBD scan tool test to the proposed attestation requirement for intermediate age and outside useful life vehicles.

EPA understands that compliance with the OBD regulations in 40 CFR part 86 may represent the majority of the time and testing expense to certify a fuel conversion. The age-based proposal, which allows an alternative OBD demonstration for converters of older vehicles and engines, was designed to address these concerns. However, in designing the OBD demonstration requirements, EPA also considered the need to ensure that reliable and accurate emissions monitoring continues post-conversion. Fuel converters that qualify as small volume manufacturers or small volume test groups/engine families may be exempt from the durability demonstration requirements in place for larger manufacturers. Because the small volume durability provisions do not generally involve upfront submission of significant emissions durability data on the alternative fuel, a functional OBD system may be the primary means by which in-use problems in fuel converted vehicles will be detected.

EPA believes that a proven OBD system for vehicles being fuel converted under the new vehicle program is important and that new vehicle and engine converters should be held to the current OBD compliance requirements in part 86, just as OEMs are for their new certification vehicles. EPA believes it prudent to maintain a level playing field

for the OEMs and conversion manufacturers receiving a certificate of conformity. New vehicles and engines have not yet experienced deterioration and are still likely to be representative, for purposes of emissions, of the technical condition of the vehicle or engine that the OEM used for EPA certification. Thus, the certification process is suitable for and may be directly applied to new vehicle and engine clean alternative fuel conversions. EPA does not agree with comments suggesting that OBD data should be broadly carried-across, because OEMs may employ different OBD strategies for different vehicle and engine models.

EPA agrees with Utah's comments and other comments suggesting that an up-front OBD demonstration should be part of all three age-based programs. A properly functioning OBD system is essential to maintaining emissions compliance in aging vehicles and engines. Up-front OBD demonstrations offer a more comprehensive and effective approach than in-use audits do to ensuring that the OBD system functions properly. Therefore EPA is finalizing an OBD demonstration for intermediate age and outside useful life vehicles that is streamlined relative to the OBD requirements for certification but that is sufficiently robust to confirm that the OBD system will continue to work properly. In lieu of submitting OBD test data as is required for certification, manufacturers of clean alternative fuel conversion systems for intermediate age and outside useful life vehicles/engines may be able to submit an OBD scan tool report showing results of an OBD scan tool test procedure and attest that the OBD system remains fully functional in the converted vehicle/engine. The attestation must state that the test group/engine family converted to an alternative fuel has fully functional OBD systems and therefore meets the OBD requirements such as those specified in 40 CFR 86, subparts A and S when operating on the alternative fuel. This includes any new monitoring capability necessary to identify potential emission problems associated with the new fuel. The scan tool procedure, described in the proposal with a reference to the regulations in 40 CFR 85.2222, checks the status of OBD readiness monitors, checks to determine if the OBD malfunction indicator light (MIL) is functional (bulb check), checks for commanded-on MIL illumination, and records all diagnostic trouble codes if the MIL is illuminated. However, these regulations reference Society of Automotive Engineers (SAE) OBD diagnostic mode assignments that are specific to light-duty vehicles and light-duty trucks. In order to be clear that the OBD scan tool procedure described above applies to all vehicles and engines that are required to comply with OBD regulations, we are adding the process described in 40 CFR 85.2222 to the new subpart F regulations, without the specific references to the light-duty vehicle OBD procedures. Any scan tool that displays the supported monitors, lists their corresponding readiness status, and reports all emission-related pending and confirmed diagnostic trouble codes is considered acceptable. EPA believes requiring intermediate age and outside useful life fuel converters to submit a printed scan tool report following the regulations in section 40 CFR 85.515(b)(9) and 85.520(b)(4), is sufficient to demonstrate that the OBD system is fully functional while operating on the alternative fuel. However, EPA may require OBD testing as set forth for certification if the OBD scan tool report is not sufficient to demonstrate proper OBD operation. An acceptable OBD demonstration under the intermediate age and outside useful life programs must include a printout of scan tool results following the fuel conversion showing that all supported monitors have been set to

ready and that there are no pending or confirmed diagnostic trouble codes. The vehicle/engine identification number (VIN/EIN) must be provided with the scan tool report. Given the changes to the vehicle/engine resulting from the fuel conversion process, some monitors in the OEM OBD system may no longer be supported. For example, the evaporative emissions readiness monitor may need to remain unset for conversions in which the original evaporative emissions system is no longer functionally necessary.

We recognize the concerns expressed about a lesser standard of proof relative to certification for the OBD system for fuel converters in the intermediate age and outside useful life programs, and believe the final rule provides the proper balance between the need for effective OBD compliance requirements and the policy goal of reducing burden for fuel converters seeking an exemption from tampering under either the intermediate age or outside useful life program. EPA disagrees with the Auto Alliance general comment that all fuel converted vehicles must comply with part 86 requirements, including OBD requirements. We believe the OBD demonstration requirements for the intermediate age and outside useful life programs, where certification is not required, are an appropriate balance for older vehicles and will ensure fully functional OBD systems. In response to CVEF's concerns that an OBD scan tool procedure is inadequate, EPA disagrees. While full OBD testing provides a higher level of assurance that the OBD system works precisely within specified ranges to identify potential emissions increases, the OBD scan tool procedure EPA is finalizing will confirm that the OBD system is functional post conversion. This, together with the converter's attestation that the system functions as designed and/or has been upgraded to perform functions necessary for monitoring emissions on the new fuel, will achieve proper monitoring of key emission control components or systems

EPA appreciates the time line constraints that fuel converters face given that they cannot begin their demonstration activity until the OEM has introduced a certified vehicle into commerce. However, EPA does not wish to grant extensions in OBD compliance for conversion manufacturers. Manufacturers of conversion systems such as described by ALTe may need to design and prove-out a completely new OBD system to monitor the entirely different powertrain and emission control approach in the converted vehicle. It is especially important to demonstrate that the OBD system is fully functional in these types of conversions. Vehicle owners, repair shops and operators of state inspection and maintenance (I/M) programs rely on the OBD system to identify potential emissions problems. I/M programs are essential to maintaining air quality in many areas. Therefore, EPA believes the OBD system must be fully functional to obtain an exemption from the tampering prohibition under this regulation.

In response to NGVA's comment that the proposal gave too much weight to the CARB OBD process, our intention was merely to provide a summary of the existing requirements and flexibilities for the convenience of the reader. Please see the federal OBD regulations for federal OBD requirements and relevant flexibilities, such as CARB OBD approvals.

EPA is not adopting differences in requirements as a function of sales volumes for fuel converters submitting documentation under the intermediate age or outside useful life programs, as suggested by Chew, since OBD serves a critical function for individual vehicle owners, repair shops, and air quality.

CSI, NatGasCar, and Flex Fuel US submitted comments that OEM OBD groups should be made available to fuel converters when requested. Currently, OEMs provide this information to EPA as confidential business information. EPA is working with OEMs to develop an approach through which converters can have access to this information.

EPA considered the Roush comment suggesting that fuel converters should submit scan tool data to EPA on the pre- and post- fuel converted vehicle showing numerical OBD test results and failure thresholds. An examination of such data could signal the robustness of the alternative fuel calibration by indicating whether the fuel converted vehicle is likely to set a diagnostic trouble code or illuminate a MIL due to lack of headroom between the numerical result and the failure threshold. FTP emission results, in combination with deterioration factors, generally result in compliance headroom, which is valuable to ensure full useful life compliance. EPA does not wish to require an additional test that requires headroom based on OBD scan tool data. Nevertheless, EPA encourages fuel converters to examine such OBD data for vehicles and engines of all ages.

## 5.7 Fees

### *What we proposed:*

We proposed to retain current requirements for alternative fuel converters to pay fees as part of the certification application process.

### *What commenters said:*

Natural Drive commented that CARB imposes no fees for processing Executive Orders and that EPA should not impose fees on converters either. They commented that the proposed rulemaking would exempt fees for intermediate age vehicles so EPA should do so for the new vehicle category as well. Natural Drive further commented that EPA is “double-dipping” on alternative fuel converters because every vehicle converted has already had federal certification fees paid on it by the OEM.

ALTe and NGVA commented that in addition to waiving certification fees for vehicles that are older than two years old, EPA should modify the certification fees currently charged in order to allow aftermarket manufacturers to pay these fees at the back end instead of upfront. Currently manufacturers must pay fees upfront based on expected sales. If these sales do not materialize they can request a refund. The comments stated that the requirement to submit fees and then later request a refund ties up valuable funds, which most small manufacturers cannot afford to have tied up. NGVA proposed

that EPA adopt procedures to allow manufacturers the option of paying fees at the end of each quarter or annually based on the total number of vehicles actually sold under a certificate. Another approach would be to only require payment of an initial fee of \$750 at the time an application is submitted and allow the manufacturer to pay any additional fees quarterly or annually based on sales that have occurred.

The Auto Alliance commented that they support the already reduced fees for small volume manufacturers. To further assist small volume manufacturers, EPA could further reduce certification fees or assign a dedicated person to assist conversion companies with the certification requirements and process.

The Collaborative commented that the renewal fees should be waived if no significant changes to engine emissions systems have been made by the manufacturer from one year to the next. They also commented that fees should be allowed to be paid at the end of each quarter or annually based on actual vehicle sales.

*Our response:*

EPA is retaining the fees provisions as proposed. EPA already provides compliance support to conversion manufacturers, and has a reduced fees program for small entities that applies to most converters. The reduced fees program allows manufacturers to pay 1% of the added value of each sale multiplied by the number of sales.<sup>17</sup> EPA believes that a 1% fee is a reasonable burden and is consistent with other small entity certification fees, such as those paid by Independent Commercial Importers and other small volume manufacturers. EPA is authorized to assess fees on regulated industry to recover all reasonable costs associated with vehicle and engine certification and compliance monitoring and testing. The Agency incurs costs in conducting these activities for conversion manufacturers, just as it does for conducting OEM certification and compliance. It is therefore appropriate for EPA to collect fees from conversion manufacturers. EPA believes that the current program which requires manufacturers to pay fees upfront, prior to certification is the most effective means for ensuring that fees are paid. That said, most converters will pay reduced fees under the new regulations. The intermediate age and outside useful life compliance programs do not require submission of fees, and the new vehicle program only requires fees to be paid upon initial certification.

## 5.8 VIN Tracking

*What we proposed:*

We requested comment as to whether converters should submit VIN tracking information to EPA and whether EPA should make such information publically available.

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<sup>17</sup> See 40 CFR 1027.120.

*What commenters said:*

IMPCO commented that VIN tracking is unnecessary and burdensome and would require an instant up-to-date tracking mechanism that EPA would have to update on an extremely frequent basis to ensure that the data are readily available.

The Auto Alliance commented that EPA should publish a list of VINs of converted vehicles and make the information available to OEMs and to state I/M agencies. This would help ensure that these organizations are properly informed of a vehicle's conversion and warranty status. The Auto Alliance further commented that it would not be difficult since EPA has already said it will post a list of EPA approved conversions that have satisfied EPA demonstration and notification requirements and are considered compliant.

Wallace did not support VIN tracking. Wallace commented that such reporting is not needed because the parties will have the vehicle in front of them which is labeled. Converters ought to keep records if they choose to, and they likely will for good business purposes and manufacturers will never know, or need to know, specific VINs. In addition, Wallace commented that EPA did not adequately address the costs or benefits of implementing VIN tracking.

ALTe supported VIN tracking and commented that this information should be available to the public for traceability, for use on the state level where vehicle emissions testing programs exist, and for purposes of informing the public that a reputable shop performed the conversion. ALTe stated that this approach would help to protect the credibility and reputation of the conversion industry and forward the goal of encouraging clean alternative fuel conversions and protection of the environment.

NGVA supported making VIN and annual sales information available to the public and to other authorities to assist in identifying conversions. NGVA further commented that the final rule should clarify who has the obligation to report the VIN. NGVA stated that converters are in the best position to do so.

Chew commented that EPA should make available a comprehensive and searchable list of conversions that notes any OBD exemptions. Converters should also submit VIN tracking info to EPA and make it available to state I/M programs.

*Our response:*

EPA evaluated but has decided not to finalize a VIN-tracking requirement. A policy that obliges EPA to track VINs would present a major administrative challenge. EPA does not have a practical way to implement this type of vehicle tracking system or to enforce against installers who do not report VINs. EPA agrees with Wallace's comment that the vehicles and engine labeling requirements will be sufficient to identify which vehicles and engines have been converted.



## 5.9 Vehicle and Packaging Labels

### *What we proposed:*

EPA proposed to retain the labeling requirements contained in the subpart F regulations. EPA also proposed to require some additional content for the label. The additions would include the conversion manufacturer's evaporative/refueling family and test group or engine family, as well as a statement specifying the minimum age and/or mileage requirements, OEM model year of vehicles, and the specific OEM test groups or engine families to which the conversion system is applicable.

### *What commenters said:*

IMPCO comments supported keeping the existing labeling requirements with two suggestions: 1) allow certifying manufacturers to include the proposed or additional information either on the label or in marketing materials; and 2) clarify that the labels are meant for typical underhood usage.

The Auto Alliance supported the existing labeling requirement and recommended that the label also show the converted vehicle's estimated cruising range and the converted vehicle's emission certification standard. The Auto Alliance strongly recommended that the label should include the following statement: "OEM warranties will not cover damage to existing systems from damage caused by fuel conversions." In addition, the Auto Alliance commented that a second identical label should be required to be permanently affixed on the driver door B-pillar, or glove box door or center console area to ensure that the consumer (or potential next purchaser) is properly informed of the vehicle's conversion and warranty status.

Wallace commented that he does not agree with the Auto Alliance comments on labeling.

NGVA comments supported previous labeling requirements and opposed the proposed new additional labeling requirements.

Chew recommended additional information such as certification class (e.g., CARB LEV, ULEV) be added to the label prevent misapplication and to troubleshoot problems.

Utah commented in support of the proposed labeling requirements and stated that the labeling information will help with proper identification of fuel converted vehicles.

### *Our response:*

EPA is finalizing the labeling requirements as proposed. We understand that it may be challenging to fit all the information on an underhood or engine label; however, EPA believes that clear labeling with sufficient information will reduce the incidence of

misapplication. To address concerns of space, EPA will allow the label information to be logically split among two labels that are both placed as close to the original VECI or engine label as possible. EPA does expect the labels to be permanent and able to withstand typical underhood operating temperatures and other environmental factors.

EPA does not agree that the estimated cruising range should be required on a clean alternative fuel conversion label, since fuel economy testing is not part of EPA's fuel conversion requirements. EPA does not agree that the certification standard should be required on the clean alternative fuel conversion label, since it already appears on the OEM VECI label.

With respect to the request to include CARB vehicle classification on the VECI label, the CARB standards and the CARB vehicle classification are listed on OEM VECI labels, which must be present on any fuel conversion.

## 5.10 Marketing

### *What we proposed:*

We proposed that marketing material for a given conversion system must be consistent with vehicle and packaging label information for that system, and that all must be consistent with and not contravene the demonstration and notification to EPA.

### *What commenters said:*

Chew commented that marketing materials used by the conversion manufacturer should provide very specific consumer information to prevent misapplication of the conversion system. Chew recommended that the materials list not only the test groups that may be retrofitted with a given system, but also spell out the test groups for which the system is not appropriate.

### *Our response:*

EPA is finalizing the proposed marketing information requirements. EPA agrees that clear marketing material is important to minimize potential misapplication. While EPA does not believe it is practical to require manufacturers to list test groups to which the conversion system *cannot* be applied, marketing material must never imply, even tacitly, that a conversion system may be applied to any test groups other than those for which it was explicitly designed.

## 6. Small Volume Manufacturers and Small Volume Test Groups/Engine Families

### 6.1 Small Volume Status

#### *What we proposed:*

EPA proposed to allow eligible conversion manufacturers to use the existing regulatory procedures specific to light-duty and heavy-duty chassis certified vehicle small volume manufacturers and small volume test groups, set forth in 40 CFR 86.1838-01. A manufacturer is eligible for small volume manufacturer status for light-duty and heavy-duty chassis certified vehicle procedures, if the manufacturer's annual model year motor vehicle and engine total sales volume in all states and territories of the United States (or aggregate sales volume for manufacturers in an aggregate relationship) is less than 15,000 units. A large volume manufacturer may also use small volume manufacturer certification procedures for test groups of vehicles which total less than 15,000 units. For small volume test group eligibility criteria for large volume manufacturers who participate in aggregate relationships, refer to 40 CFR 86.1838-01(b)(2) for more details.

Heavy-duty engine small volume manufacturer status is tiered. Certain procedures apply to manufacturers with aggregate sales of less than 301 units, and other procedures may apply to manufacturers with aggregate sales volumes less than 10,000 units. Please refer to 40 CFR 86.098-14 and 40 CFR 86.096-24(e)(2) for details.

#### *What commenters said:*

Diesel 2 Gas commented that EPA should expand the definition of small volume manufacturer to include up to 50,000 units per year.

ALTe commented that EPA should raise the cap to 25,000 units by the make and model of conversions.

Chew commented that, for mixed-fuel and dual-fuel conversions EPA should only allow a statement of compliance in lieu of test data up to 5,000 annual sales per that specific system.

#### *Our response:*

EPA did not change the small volume manufacturer quantity thresholds in this rulemaking since this rulemaking relies largely on the already-established certification provisions, including the previously-established small volume manufacturer thresholds and provisions. Therefore, EPA is finalizing small volume status as proposed.

## 6.2 Change in Small Volume Status

### *What we proposed:*

EPA proposed that conversion manufacturers would be required to satisfy the requirements for large volume manufacturers or test groups/engine families if their annual sales volume surpasses the threshold for small volume manufacturer or test group status for a given model year. This requirement would apply even if the conversion manufacturer initially complied properly (in a previous model year) with the small volume requirements. Conversion manufacturers should be aware that this status change could result in new demonstration and notification requirements involving new testing under both the new and intermediate age programs. EPA proposed to require conversion manufacturers to report to EPA the number of conversion systems they have sold annually in an end-of-year submission.

### *What commenters said:*

Chew commented that the proposed regulation does not provide compliance lead-time for a conversion manufacturer that has grown from a small volume manufacturer to a large volume manufacturer.

### *Our response:*

EPA does not agree that a defined lead-time is necessary, since conversion manufacturers should be able to predict in advance and plan for changes in small volume status.

## 6.3 Flexibilities for Small Volume Manufacturers and Small Volume Test Groups/Engine Families

### *What we proposed:*

EPA proposed several flexibilities for small volume conversion manufacturers and test groups/engine families. The flexibilities fall into two categories: test group/engine family combinations and durability testing.

For the new clean alternative fuel vehicle and engine conversion program, EPA proposed to allow small volume conversion manufacturers and small volume test groups/engine families to combine several OEM test groups/engine families into larger conversion test groups/engine families.<sup>18</sup>

EPA proposed to allow all small volume conversion manufacturers and small volume test groups/engine families to use assigned deterioration factors in lieu of durability testing. Additionally, EPA proposed that small volume conversion

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<sup>18</sup> EPA also proposed broader groupings for intermediate age and outside useful life conversions.

manufacturers and small volume test groups/engine families are eligible to use scaled deterioration factors for vehicles or engines that have accumulated more than 10,000 miles.

*What commenters said:*

CSI and NatGasCar commented that the proposed requirements create an unlevel playing field for small volume manufacturers. CSI and NatGasCar commented that EPA should create a different testing process for small volume manufacturers that exempts them from confirmatory testing, allows them to use OEM deterioration factors, requires only one OBD test per manufacturer, allows carry forward sales exemptions to newer OEM model years if the manufacturer has been granted a certificate for a previous OEM model year, allows carry across of data to all engine tests groups for a year, make and model, and carry across of data for multiple OEMs. CSI and NatGasCar commented that certification procedures may be reasonable for OEMs, but it is financially burdensome for a small volume manufacturer to spend \$100,000 minimum on a certificate to sell a small amount of conversions applicable to only one model year, make, and model vehicle.

NTEA commented that the current regulatory structure effectively precludes many small businesses from participating in the alternative fuel conversion process.

*Our response:*

EPA is finalizing the small volume manufacturer and small volume test group/engine family requirements as proposed. EPA disagrees that it is appropriate to adopt additional flexibilities for small volume manufacturers such as those proposed by the commenters. EPA believes the new flexibilities being adopted under the revised fuel conversion regulations appropriately address small volume concerns. Many of the individual test procedures mentioned in the CSI and NatGasCar comments are discussed in section 7 “Demonstration Requirements.”

The amended regulation codifies some important flexibilities for small volume conversion manufacturers and small volume test groups/engine families. The ability to combine test groups and engine families increases the number of vehicles and engines to which the cost for one set of test data applies. In addition this regulation continues to allow small volume conversion manufacturers and small volume test groups/engine families to use the same procedures available to small volume OEM manufacturers, including use of assigned deterioration factors, rather than requiring full durability testing.

EPA acknowledges the CSI and NatGasCar comment about costs. EPA expects that this rule will result in cost savings for many converters. However, technology research and development costs will vary depending on conversion technology, fuel type, vehicle or engine age, applicability, and other factors.

#### 6.4 Assigned Deterioration Factors (DFs) for Small Volume Manufacturers and Small Volume Test Groups/Engine Families

*What we proposed:*

EPA proposed to continue to allow small volume manufacturers or qualified small volume test groups/engine families to use assigned DFs in lieu of durability testing to predict emission rates at the end of a vehicle's or engine's useful life. EPA also proposed to allow small volume conversion manufacturers to use scaled DFs if the test vehicle or engine has accrued more than 10,000 miles.

*What commenters said:*

NGVA commented that manufacturers employing EPA assigned DFs should also provide a statement confirming the durability of their systems and explain why they believe their system will not harm the emissions control system or degrade the environment.

CSI and NatGasCar commented that small volume conversion manufacturers should be permitted to use the OEM DFs rather than the EPA assigned DFs. The comments state that the EPA DFs are too rigorous thereby making compliance with standards unnecessarily difficult. CSI and NatGasCar commented that the OEM DFs are appropriate because the OEM ran tests on the vehicle to generate the DFs. CSI and NatGasCar also commented that the current EPA assigned DFs are not representative of the current alternative fuel conversion technology.

*Our response:*

EPA agrees with NGVA's comment. Assigned DFs, whether scaled or not, are intended to provide small volume manufacturers and small volume test groups/engine families with a streamlined pathway for demonstrating that their product is durable. However, conversion to a new fuel creates new challenges to assessing whether the engine and emission components will remain durable for the full useful life of the vehicle or engine. Therefore, EPA is finalizing a requirement that conversion manufacturers using EPA assigned DFs must submit supplemental information to confirm system durability and explain why the conversion technology will not cause emissions degradation in the converted vehicle/engine.

EPA does not agree that the DFs OEMs generate for the initial test group or engine family certification are necessarily appropriate for the fuel conversion test group or engine family because the OEM DFs are calculated based on the original fuel and the original technology. EPA DFs are based on extensive analysis and a long-established policy for assigned DFs.<sup>19</sup> EPA continues to believe that EPA assigned DFs are appropriate for small volume manufacturers and small volume test groups/engine families

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<sup>19</sup> [http://iaspub.epa.gov/otaqpub/display\\_file.jsp?docid=14285&flag=1](http://iaspub.epa.gov/otaqpub/display_file.jsp?docid=14285&flag=1).

as an alternative to durability testing. A conversion manufacturer can always choose to run durability testing and generate new DFs, rather than using EPA assigned DFs. EPA periodically updates the assigned DFs using the data available through our OEM compliance program.

## 7. Demonstration Requirements

### 7.1 Comments Specific to Vehicle Demonstrations

#### *What we proposed:*

We proposed to base procedures for certifying new clean alternative fuel conversions, including confirmatory testing, on the certification procedures specified in 40 CFR part 86, subpart A, B and/or S and 40 CFR part 1065, as applicable. For intermediate age vehicles, we proposed that conversion manufacturers would conduct the same exhaust and evaporative emissions testing as is required for certification to demonstrate that the converted vehicle or engine will continue to meet applicable standards.

Please see ‘Comments on Age-Based Proposal’ below for discussion of outside useful life demonstration requirements.

#### *What commenters said:*

APG commented that EPA should outline critical concerns, operating conditions or thresholds for demonstrating that useful life standards can be met, but allow broader choices in the procedures to be used to demonstrate compliance.

Reed commented that EPA’s demonstration requirement should require natural gas conversions to be subject to biannual SMOG tests.

ALTe commented that the current federal test procedures may not be appropriate for plug-in hybrid-electric vehicles (PHEV) because the operating time of the internal combustion engine in the PHEV depends upon the design of the hybrid system and the specific EPA drive cycle.

CSI, NatGasCar, and ALTe requested an exemption from confirmatory testing at EPA’s laboratory if the conversion manufacturer has conducted testing at an EPA-recognized laboratory.

Flex Fuel US requested clarification about whether a single confirmatory test from a fuel converter is sufficient if the converter uses the same engineering design of the fuel conversion system.

Flex Fuel US commented that EPA should not require confirmatory testing at the EPA laboratory for fuel converted vehicles.

*Our response:*

EPA will continue to rely on existing test procedures in certification regulations and is not creating new test procedures to demonstrate compliance with CAA section 202 standards in this rulemaking as suggested by APG. Should EPA in the future develop new OEM test procedures to demonstrate compliance with emissions standards, EPA would consider allowing conversion manufacturers to also use those procedures.

EPA is not adopting a bi-annual smog-test as a compliance test because I/M-type testing is designed to different standards and different testing protocols than EPA certification emission standards.

EPA is not adopting new drive cycles for PHEVs in this rulemaking, as suggested by ALTe, because this program relies largely upon existing regulatory test procedures that are already established for OEMs, including test procedures and other requirements for hybrid electric vehicles and PHEVs.

EPA conducts confirmatory testing at its Ann Arbor, Michigan testing facility as a fundamental element of emissions compliance oversight. This process gives EPA confidence in the data submitted from OEM testing facilities, or from independent test labs which are typically used by fuel converters. EPA does not agree with comments from Flex Fuel US, CSI, NatGasCar, and ALTe suggesting that a single confirmatory test (or none at all) at EPA is sufficient if there is a similarity of design of a fuel converter's technology, even as it is applied to many OEM test groups. The fuel conversion technology may be similar in design, but it is the interaction of the fuel conversion system with the OEM's fuel control and emission control systems that will determine compliance with standards. EPA is retaining the option to confirmatory test fuel converted vehicles at its Ann Arbor testing facility. EPA continues to discover emission failures during confirmatory testing of both OEM vehicles and conversions. EPA believes confirmatory testing remains a critical component of the responsibility to apply due diligence in ensuring the environmental integrity of conversion systems.

## 7.2 Comments Specific to Heavy-Duty Engine Demonstrations

*What we proposed:*

EPA proposed to require manufacturers of heavy-duty engine conversion systems to conduct all testing required for the originally certified engine, unless specifically excepted.

*What commenters said:*

EPA received many comments expressing concern about the expense and practical difficulties associated with FTP engine testing. Engine converters stated that the cost of removing an engine for testing and of conducting testing at a qualified laboratory can be prohibitive.



APG commented that EPA should allow OEM vehicles that were originally engine certified to be chassis tested. APG further commented that EPA should allow chassis testing over a fixed road route or using a steady state test, using technology such as Portable Emissions Measurement Systems (PEMS), and that emissions testing should be conducted on the vehicle in its base level configuration, then on the converted fuel.

Diesel 2 Gas commented that the proposed rule would require the removal of engines from heavy-duty vehicles to conduct a certification level emission data 'engine' demonstration. The comments stated that it is unnecessarily difficult and expensive to remove and reinstall entire engines when before and after testing on 'complete vehicles' would be adequate to demonstrate that emissions were not adversely affected by the conversion. Diesel 2 Gas further commented that the responsibility of the conversion manufacturers should be limited to demonstrating that the conversion does not cause the emission performance to deteriorate, particularly in cases where the conversion does not alter the original OEM configuration. The comments stated that PEMS testing is an appropriate demonstration method for intermediate age vehicles and engines because it provides demonstration data on a representative engine, avoids the logistical difficulties and excessive cost of removing engines for lab testing, is an accepted protocol for in-use compliance demonstrations, and is part of EPA's in-use compliance demonstration for OEMs.

Reed commented that EPA should allow PEMS testing and that emissions pre-testing of vehicles is unnecessary. Reed also commented that EPA should follow the CARB 1994 Attachment A certification procedures for alternative fuel retrofit systems.

*Our response:*

EPA understands conversion manufacturers' concerns about the expense of heavy-duty engine testing. However, the basis for exemption from the tampering prohibition under this program is the conversion manufacturer's demonstration of compliance with applicable standards. At this time, there are no codified certification test procedures other than engine dynamometer testing through which manufacturers can demonstrate compliance with standards for vehicles greater than 14,000 pound gross vehicle weight rating (GVWR). Therefore EPA is finalizing as proposed the engine testing demonstration requirement for such conversions.

As some commenters noted, EPA allows OEMs to use PEMS testing to satisfy certain compliance requirements. However, the use of PEMS is limited to screening in-use heavy-duty vehicles for excessively high emissions under field conditions. OEMs may not use PEMS testing results to certify engines. For these reasons, PEMS testing does not offer converters a viable alternative to engine dynamometer testing for purposes of demonstrating compliance with CAA section 202 heavy-duty engine standards.

The procedures for using PEMS for field testing state, "These procedures are designed primarily for in-field measurements of engines that remain installed in vehicles

or equipment in the field. Field-test procedures apply to your engines only as specified in the standard-setting part.”<sup>20</sup> EPA currently allows PEMS testing to be used by OEMs to demonstrate compliance with in-use Not-to-Exceed (NTE) standards for on-highway heavy-duty diesel vehicles and engines. In-use NTE standards were promulgated by EPA to limit in-use emissions that might inappropriately exceed the applicable standards when engines were operated under conditions not found during traditional laboratory testing, sometimes referred to as “off-cycle emissions.”<sup>21</sup> The final rule for in-use testing for heavy-duty diesel engines and vehicles states that the vehicle pass criteria used for the manufacturer-run, in-use NTE program does not correspond specifically to the criteria for showing compliance to the NTE standards, or that an engine family is in full compliance with the standards.<sup>22</sup> As explained previously in this response to comments document and in the preamble, manufacturers of conversion systems for engines still within their useful life must demonstrate compliance with the CAA section 202 certification standards in order to qualify for an exemption from the prohibition on tampering. Therefore, converters seeking a tampering exemption must use the test procedure associated with those standards, which at this time is limited to the FTP testing on an engine dynamometer. Should EPA in the future adopt new test methods such as PEMS or new chassis cycles through which engine manufacturers can demonstrate compliance with CAA section 202 certification standards, EPA would consider making those new options available to converters.

EPA is able to offer new flexibility to some conversion manufacturers working with engines for 8,500 to 14,000 pound GVWR vehicles. EPA considered and agrees with comments suggesting that manufacturers of clean alternative fuel conversion systems for heavy-duty engines for which a chassis certification option was available to the OEM should be permitted to use chassis certification test procedures, even if the OEM opted for engine certification. Thus EPA is finalizing an option for engine converters to meet vehicle rather than engine standards if chassis certification was available to the OEM. This option would apply only to those vehicles for which it was optional for the OEM to choose engine or chassis certification procedures. As such, this option will not apply to any engine for use in vehicles over 14,000 pounds GVWR or older than model year 2001 for Otto-cycle engines and model year 2007 for diesel engines. Conversion manufacturers choosing this option must designate test groups using the appropriate criteria as prescribed in this rule and meet all chassis-certification requirements set forth in 40 CFR part 86, subpart S.<sup>23</sup> EPA is adopting this flexibility to remove an unnecessary economic barrier while maintaining necessary environmental protections.

The Reed comment, suggesting that EPA allow use of 1994 CARB test procedures, refers to a CARB regulatory document describing the CARB approval

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<sup>20</sup> 40 CFR §1065.901(a).

<sup>21</sup> 70 FR 34597 (June 14, 2005).

<sup>22</sup> Id. at 34603.

<sup>23</sup> These provisions (and available options) apply to 8,500 to 14,000 pound GVWR Otto-cycle complete and incomplete heavy-duty vehicles for model years 2001 and forward, and for 8500 to 14,000 pound GVWR compression ignition engines in complete and incomplete heavy-duty vehicles for model years 2007 and forward. See 40 CFR 86.1801-01, 86.1816-05, and 86.1863-07.

procedures for alternative fuel retrofit systems.<sup>24</sup> CARB's procedure compares baseline emission results from the pre- fuel converted engine to the post- fuel converted engine. The post- fuel converted results may not exceed the pre-fuel converted results by more than 10%. A deterioration factor is developed and applied to the post- fuel converted engine results. The deteriorated emission result, using a full useful life of 180,000 miles, may not exceed the baseline emission results by more than 30%.

California's compliance approach may or may not be able to correctly predict if a heavy-duty fuel converted vehicle still within its full useful life will meet the applicable EPA engine standards based on engine dynamometer testing. Meeting a CAA section 202 standard, in this case engine based standards, is fundamental for all engines in the new or intermediate age programs in order to qualify for an exemption from tampering. We note that the CARB procedures referenced by Reed have subsequently removed any reference to the type of test procedure which must be used in the California program for heavy-duty vehicle fuel conversions. Based on our analysis of the referenced CARB document, EPA cannot consider this approach to adequately ensure compliance with EPA engine testing protocols and standards.

### 7.3 Dual-Fuel and Mixed-Fuel Procedures

#### *What we proposed:*

EPA proposed to generally require mixed-fuel vehicles/engines to demonstrate compliance with applicable requirements for each fuel, which could entail testing on multiple fuel ratios to adequately represent worst case emission scenarios.

#### *What commenters said:*

The Collaborative commented that EPA should consider proposing ways to make it easier for mixed-fuel vehicles to be certified. The Collaborative comments focused on vehicles that burn diesel fuel and CNG simultaneously. The comments stated that the injection of CNG as well as diesel fuel into the engine significantly reduces CO<sub>2</sub> emissions and enables the remaining diesel fuel to burn more cleanly. The comments further stated that the percentage of CNG in the mix should be irrelevant as long as the resulting emissions from the fuel mixture are cleaner after the conversion.

Diesel 2 Gas and APG commented that a simplified test procedure would be appropriate to demonstrate emissions compliance for their mixed-fuel systems, which are non-invasive and do not physically touch the engine or electronic controller, or bypass, defeat or alter any device or element of the engine system.

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<sup>24</sup> Final Regulatory Order, Attachment A, Modifications to the "California Certification and Installation Procedures for Alternative Fuel Retrofit Systems for Motor Vehicles Certified for 1994 and Subsequent Model Years," adopted by the CARB Board on July 27, 1995.

Flex Fuel US commented that EPA should establish an E-85 test fuel specification that is representative of the American Society for Testing and Materials (ASTM) in-use standards and that EPA should not conduct cold start emission tests.

Flex Fuel US requested that EPA allow the use of a Non-Methane Organic Gas (NMOG)/Non-Methane Hydrocarbon (NMHC) ratio to determine compliance with NMOG standards when vehicles are tested on E-85. This ratio could then be used to determine compliance in lieu of measuring NMOG using CARB procedures.

Flex Fuel US commented that E-85 vehicles should only be confirmatory tested at a single ethanol/gasoline volumetric ratio.

Flex Fuel US commented that EPA should consistently apply CARB's NMOG test procedures or correct any inconsistencies or errors in the procedures.

*Our response:*

EPA is finalizing requirements for manufacturers of mixed-fuel vehicle/engine conversion systems to demonstrate compliance for each fuel, as proposed. EPA requested comment on alternative approaches but did not receive any data or information to support other test procedures that could be used to demonstrate mixed-fuel vehicle/engine compliance with EPA certification standards.

As stated in the proposal, we understand that it may be appropriate to apply special testing considerations when evaluating new types of technologies such as those described by commenters. Converters may approach EPA to discuss special testing needs including development of worst case scenarios for "mixed-fuel" vehicle/engine testing.

Ethanol fueled vehicles are subject to CARB NMOG measurement procedures because there is no accurate way at present to demonstrate compliance by simply measuring NMHC and multiplying by a manufacturer specific or industry-wide NMOG to NMHC ratio.

EPA regulations for ethanol flexible fuel vehicles, a type of mixed fuel vehicle, require the EDV to be able to meet emission standards on any blend of ethanol and gasoline. However it presents an impractical testing burden to have manufacturers and fuel converters demonstrate compliance on more than two common test fuel types – those being gasoline and E-85. EPA has no plans for requiring flexible fuel vehicles to demonstrate compliance on more than these two fuels, even though EPA regulations give EPA authority to conduct confirmatory testing on other fuel blends.

EPA understands the Flex Fuel US comment that E-85 test fuel specifications are needed and that test fuels and summer time in-use E-85 fuels should be similar in their physical and chemical properties. EPA may address this issue in a separate rulemaking, but it is beyond the scope of this final rule.

Compliance with exhaust emission standards is almost always determined based on the successful control of the “cold start” emissions measured on the first phase of the FTP. EPA cannot eliminate cold start testing for ethanol flexible fuel vehicles.

EPA is working to address inconsistencies in the CARB NMOG test procedures, but CARB is responsible for making revisions to its procedures.

#### 7.4 Good Engineering Judgment

##### *What we proposed:*

EPA proposed that all conversions must be designed and installed in accordance with good engineering judgment. The proposal provided numerous examples of good engineering judgment and described how EPA would assess a manufacturer’s technical approach in evaluating good engineering judgment. One example stated that OEM engines that use direct injection should employ alternative fuel technologies that also use direct fuel injection.

##### *What commenters said:*

APG commented that one-to-one equivalence in fueling technology is unnecessarily restrictive. APG further commented that their fuel mixer system for adding CNG to the diesel intake system is digitally controlled to only flow during appropriate conditions, and therefore it is impractical and unnecessary to install a set of high-pressure natural gas injectors and fuel rail(s) when their digitally controlled mixer can achieve good fuel control and low emissions. APG requested that the outside useful life demonstration requirement be rewritten to allow for their type of mixed-fuel delivery systems.

Chew commented that the issue of “good engineering judgment” can be very subjective and a challenge without the full cooperation by the OEM.

Flex Fuel US requested that “good engineering judgment” be extended to accept a statement of compliance in lieu of testing for OBD, canister loading and evaporative emissions testing if previous testing demonstrated compliance.

Reed commented that outside useful life conversions should not be required to use “similar technology level” as the OEM motor, such as fuel injection needing to be done on fuel injection OEM motors. The comments stated that such a requirement ignores the fact that many alternative fuels are not in the same form as gasoline or diesel, and this technology matching does not determine solid engineering.

##### *Our response:*

EPA agrees with APG comments that engineering designs that differ from the OEM technology may still be capable of achieving good fuel control and low emissions. The examples of good engineering judgment that EPA provided in the proposal were not intended to be comprehensive or mandatory. Rather, the examples of good engineering judgment, including the fuel control example, represent EPA's interest in seeing that the technical approach behind the conversion is of at least equivalent technical sophistication to the OEM design.

While good engineering judgment may include some exercise of discretion, the documentation submitted to the EPA should include engineering analysis containing objective information and data supporting the declaration. For new and intermediate age vehicles/engines, the good engineering judgment documentation will include results of emissions tests conducted over FTP cycles at a qualified laboratory. FTP test results may also be submitted to help satisfy the outside useful life demonstration requirement. A clean alternative fuel conversion manufacturer is eligible for an exemption from the CAA tampering prohibition only if the conversion system is designed, constructed, and applied using good engineering judgment *in addition* to the other requirements of the rule including those applicable to the appropriate age-based categories.

## 8. Durability Testing

*What we proposed:*

EPA proposed that for new and intermediate age vehicles and engines, conversion manufacturers would be required to conduct all applicable durability testing unless the conversion manufacturer is eligible for small volume manufacturer or small volume test group/engine family status permitting the use of assigned deterioration factors in lieu of durability testing. Large volume manufacturers would still need to conduct durability demonstrations following the requirements in 40 CFR part 86 regulations.

*What commenters said:*

Wallace commented that durability procedures are too complicated and without any real world practicality. Wallace suggested that EPA could instead rely on data from I/M programs to find problems with fuel conversion systems.

Chew commented that EPA should test vehicles two or three years after conversion to verify their in-use emission levels.

NGVA commented that the good engineering judgment demonstration should include evidence that a system will continue to maintain appropriate emissions and fueling control performance over its life.

RRCT commented on durability concerns by suggesting EPA include provisions to ensure that alternative fuel types are suitable for the engine(s) in the conversion test

group or engine family. The concern is that some engines being converted to alternative fuels may need to replace valves and valve seats with hardened components.

*Our response:*

EPA is finalizing the durability procedures as proposed. EPA disagrees with the Wallace comments stating that the durability procedures are too complicated and impractical. EPA believes that a durability demonstration or use of an assigned deterioration factor with accompanying supplemental information is essential to ensure that converted vehicles/engines remain as clean as the OEM configuration being replaced, for their full useful life. EPA also disagrees that I/M testing is suitable for ensuring that fuel conversions meet standards. Durability testing is conducted prior to a manufacturer's demonstration, not after a vehicle/engine is in customer care. Therefore I/M in-use tests are not an appropriate substitute for durability testing. In addition, I/M tests are designed to find gross emitters and vehicles with OBD trouble codes and an illuminated MIL. I/M testing uses much different and less accurate equipment and test procedures relative to 40 CFR part 86 and is therefore incapable of making an accurate pass/fail determination for compliance with 40 CFR part 86 standards.

EPA does not agree with the Chew comment that EPA should regularly test converted vehicles/engines to assess system durability. EPA retains authority to conduct such testing, and intends to use testing along with other compliance tools to monitor emissions performance of converted vehicles/engines in customer service.

EPA believes that the durability concerns raised by NGVA and RRCT will be addressed by the requirement for large volume converters to conduct durability demonstrations and small volume manufacturers and small volume test groups/engine families to provide technical information to supplement use of an assigned deterioration factors. The supplemental statement must describe and demonstrate the compatibility of the vehicle/engine with the alternative fuel type. If the information EPA receives is inadequate, EPA will request additional information to provide confidence that the aftermarket fuel conversion system is clean and durable. In addition, sections 206, 207 and 208 of the CAA authorize EPA to establish procedures to ensure that production vehicles and engines comply with emission standards when they are new and continue to comply with emission requirements after they are in customer service. EPA intends to test vehicles and engines in all age-based categories.

## 9. Year End Reporting

*What we proposed:*

EPA proposed to require conversion manufacturers to report annually to EPA the number of conversion systems they have sold in an end-of year submission.

*What commenters said:*

NGVA commented that EPA should require a summary report of total sales by alternative fuel type and possibly vehicle types (*i.e.*, compact, passenger car, light-duty truck, etc.) should be provided to help industry better assess market growth and impact of aftermarket conversions.

*Our response:*

EPA agrees with the comment and is finalizing a requirement that the end-of year summary report should include total sales by alternative fuel type and vehicle/engine types.

## 10. Technical Amendments

*What we proposed:*

We proposed several technical amendments to 40 CFR part 86, subpart S which are applicable to the exhaust and evaporative emission testing requirements for both OEM and converted vehicles using gaseous alternative fuels. The purpose of these amendments is to allow flexibility in determining compliance with EPA NMOG standards for vehicles, and also to allow statements of compliance in lieu of test data for meeting exhaust emission standards for formaldehyde (HCHO), and evaporative emissions. For purposes of this regulation, CNG, LNG, liquefied petroleum gas (LPG), and hydrogen fuels are eligible for the technical amendments described below.

We specifically sought comment on whether there are other test procedures in 40 CFR part 86 or part 1065 which should be updated to address concerns specific to certain alternative fuels.

*What commenters said:*

NPGA commented that they support the various technical amendments proposed by EPA.

*Our response:*

EPA will finalize the technical amendments as proposed.



## 11. Comments on Age-based Proposal

### 11.1 General Comments on age-based proposal

#### *What we proposed:*

EPA proposed to establish demonstration and notification protocols that would be based on the age of the vehicle or engine being converted: (1) “new and relatively-new” (referred to as “new” in the preamble and regulations), (2) no longer new but that still fall within EPA’s definition of full useful life, “intermediate age vehicles,” and (3) outside EPA’s definition of useful life. The proposed demonstration for new vehicles/engines was certification, much like previous practices. The proposed demonstration for intermediate-age vehicles/engines was compliance with applicable standards. EPA proposed and sought comment on three options for the outside useful life demonstration (see specific age-based discussions, below).

#### *What commenters said:*

EPA received numerous comments in support of the age-based proposal. Several commenters offered suggestions for modifications to specific elements of the programs.

APG comments supported the proposal to use a publicly available list to identify intermediate age and outside useful life conversion systems that have satisfied the demonstration and notification requirements.

The Auto Alliance commented that EPA should not change the options for conversion manufacturers to gain an exemption from the tampering prohibition and should apply the current certification requirement for all age categories.

Reed commented that the age-based categorization is not applicable to heavy-duty engines and should be abandoned.

NTEA commented that, while it is important that EPA ensure compliance of a vehicle throughout its useful life, it must balance the regulatory environment so that even cleaner conversions, especially of older vehicles, are not only possible but attractive. NTEA also stated that providing converters of older vehicles the option of submitting documentation of good engineering judgment or test data may strike such a balance.

#### *Our response:*

We disagree with the Auto Alliance comment that EPA should make no changes to the current options available to fuel converters to gain an exemption from the tampering prohibition. EPA undertook this rulemaking with the intent of providing compliance flexibilities appropriate for the conversions industry while maintaining appropriate environmental oversight. The Auto Alliance did not present evidence to support a conclusion that an across-the-board certification demonstration requirement is

necessary. EPA is finalizing an age-based program, as proposed. EPA believes an age-based program achieves a proper balance of requiring data and documentation to be presented to EPA to ensure that fuel converted vehicles and engines satisfy CAA conditions for exemption from the tampering prohibition.

EPA disagrees with Reed's comment that the age-based proposals are not applicable for heavy-duty engines. EPA understands that heavy-duty engines are frequently rebuilt and therefore are in-service well beyond their regulatory full useful life. The prohibitions against tampering do not expire at the end of the regulatory full useful life period, and therefore the policies in this final regulation for this category of fuel converted engines are necessary to provide a clear pathway for obtaining an exemption from tampering.

## 11.2 New (Certification)

### *What we proposed:*

EPA proposed to largely retain current certification requirements for manufacturers of conversion systems for new vehicles and engines, while providing some new flexibility in grouping such vehicles for certification purposes. The proposal defined "new and relatively-new" vehicle or engine clean alternative fuel conversions as those for which the date of conversion is in a calendar year that is not more than one year after the original model year of the vehicle or engine. We requested comment regarding whether EPA properly identified the vehicle and engine age range for which certification is appropriate and should be required for conversions. We further requested emissions or other data to support comments suggesting a different age range than the proposed two year period.

### *What commenters said:*

NGVA commented that the current proposal to define new vehicles as those that are less than two years old is unnecessarily restrictive. NGVA further stated that the definition of "new" vehicle should be scaled back to cover vehicles from the current model year and vehicles or engines that are one year old or less.

### *Our response:*

EPA is finalizing the "new" age category definition and compliance requirements as proposed. When developing the proposed and final rules, EPA considered many options with respect to how many years should fall into the new vehicle/engine category. EPA seeks to maintain a level playing field between OEMs and converters to avoid any perceived incentive that might otherwise exist for OEMs to convert a certified traditional configuration rather than to certify an alternative fuel configuration in the first place. A certificate of conformity is also appropriate because vehicles/engines in the new category were entered into commerce as the subject of a recently issued OEM certificate of conformity and such vehicles/engines typically have the majority of their useful life

remaining. In addition, most vehicles and engines that received conversion certificates under previous regulations were less than two years old.

EPA considered many options for the age threshold between the new and intermediate age programs. The decision to finalize a threshold of about two years reflects several factors. These include the interest described previously in maintaining consistency with OEM requirements; the need for an OEM-like demonstration when converting vehicles and engines that still resemble the technical condition of the original product; and the fact that most conversions under the previous subpart F regulations took place within the first two years of a vehicle's or engine's regulatory useful life. We chose two years as the cut-off point for the new program to cover the vehicles and engines which are most likely to be converted, and which, because most of their useful life still remains, should be subject to the most rigorous demonstration requirement. No commenters provided data or technical justification to support a different age threshold than the one EPA proposed. Absent substantive evidence to support a different approach, EPA is finalizing the certification age threshold in the definition of "new and relatively-new," as proposed.

### 11.3 Intermediate Age

#### *What we proposed:*

We proposed that converters of intermediate age vehicles and engines could qualify for an exemption from the tampering prohibition by obtaining a certificate of conformity, or by demonstrating through testing that the converted vehicle or engine will continue to meet applicable standards through its useful life. Intermediate age was defined in the proposal as being more than one year after the original model year of the vehicle or engine, but still within useful life.

The proposed program for intermediate age vehicles and engines maintained many of the existing certification test procedures, but departed from the existing subpart F requirements in several notable areas. The demonstration of compliance with applicable standards would use the same procedures required of certified conversion manufacturers for exhaust and evaporative emissions testing. However, instead of conducting OBD demonstration testing as required for certification, intermediate age converters would attest that the OBD system is fully functional. The notification process would also be significantly different for intermediate age vehicles and engines. Conversion manufacturers would still submit test data, attestations, and other required information to EPA; however the notification process would be streamlined.

#### *What commenters said:*

The Auto Alliance commented that certification should be required for all age categories and that there is no need for an intermediate age program.

Reed commented that the proposal is not clear if emissions testing required for intermediate age vehicles applies to each conversion or if the testing can be done on a representative vehicle.

RRTC commented that vehicle and engine fuel conversion systems certified under the new vehicle program should immediately qualify to be listed under EPA's intermediate age program without generating new OBD demonstration data or paying certification fees. RRTC also commented that EPA could eliminate the intermediate age category and make certification permanent, or transfer certified vehicles and engines into the intermediate age program after they are one year old instead of two.

Roush supported the proposed intermediate age program but recommended a different evaporative emissions demonstration for bi- or dual-fuel conversions, and outlined details for EPA to consider adding to both intermediate age and outside useful life demonstrations. Roush suggested requiring a detailed description of component parts and one or more FTP tests to demonstrate proper canister purge. The components description would include information such as materials specifications and permeation rates to show that the converter used good engineering judgment in designing the evaporative emissions system.

CSI commented that the intermediate age and outside useful life programs should only be open to companies that have already obtained a certificate or otherwise worked in calibration. Otherwise, companies who have never certified with EPA would be allowed into the market, penalizing those who have invested extensive time and money following EPA's past provisions.

Flex Fuel US commented that fuel converters should first certify under EPA's new vehicle program before being allowed participate in the intermediate or outside useful life programs.

Wallace commented that he supported the public hearing testimony of IMPCO that a shorter intermediate age range would be better for alternative fuel fleet growth.

AAF commented that they do not support the inclusion of the proposed intermediate age life category and it must be removed from changes to the regulations. AAF stated that removing the current EPA requirement that a system undergo testing to ensure that it meets minimum standards and works with the OEM OBDII system would allow uncertified and untested systems into the marketplace with no control.

*Our response:*

EPA is finalizing the intermediate age requirements largely as proposed. EPA disagrees with the Auto Alliance and AAF that all vehicles and engines must be certified to gain exemption from the tampering prohibition. EPA believes the flexibilities that characterize the intermediate age program offer the right balance between assurance of environmental compliance and testing burden. EPA believes that a reduced OBD

demonstration requirement is appropriate for intermediate age conversions. See section 5.6 for more details about the intermediate age OBD demonstration.

The preamble and regulations describe in detail evaporative emissions statements of compliance and attestation that converters must submit in their notification to EPA for intermediate age vehicle and engine conversions. The conversion manufacturer must have sufficient basis to prove the statements are valid. The Roush comments suggesting FTP testing to demonstrate canister purge offer an example of one way a converter might support the canister purge statement of attestation set forth in 40 CFR 85.515(b)(10)(iii)(D) and 85.520(b)(6)(iii)(D). Similarly, the components description Roush suggested might be used to support the statement of compliance for vehicles operated on CNG, LNG, LPG, or hydrogen fuels found in 40 CFR 86.1829-01(b)(2)(i).

In response to Reed's comment, the regulations require testing to be conducted on a worst case test EDV for both new and intermediate age programs. See section 5.4 for further discussion.

EPA does not think it is necessary to limit entry into the intermediate age or outside useful life program to those conversion manufacturers who have previously certified. The demonstration requirement for exemption from tampering under the intermediate age program is submission of emissions data that show that the converted vehicle/engine meets applicable emission standards. The demonstration requirement for exemption from tampering under the outside useful life program is submission of technical information that shows that emissions from the converted vehicle/engine will maintain or improve upon emissions from the OEM vehicle/engine being converted. EPA believes these demonstrations are sufficiently protective for intermediate age and outside useful life conversions to qualify for exemption from the tampering prohibition.

## 11.4 Outside Useful Life

### *What we proposed:*

The proposal offered for comment three approaches through which manufacturers of clean alternative fuel conversion systems for outside useful life vehicles and engines might qualify for an exemption from the tampering prohibition. The proposal stated that EPA would finalize only one of the options.

Option 1 would require manufacturers of conversion systems for outside useful life vehicles and engines to satisfy the demonstration requirement by submitting to EPA a detailed description of the conversion system. The submission would need to provide a level of technical detail sufficient for EPA to confirm the conversion system's ability to sustain acceptable emission levels in the intended vehicle or engine.

Option 2 would require manufacturers to satisfy the demonstration requirement by submitting FTP data showing that the converted vehicle/engine meets the useful life

standard, or data from back-to-back tests showing that emissions do not increase after conversion.

Option 3 would require manufacturers to submit a technical description as in Option 1, along with a demonstration that the OBD system is functioning properly. The OBD demonstration would involve using an OBD scan tool and submitting the report to EPA.

We proposed that, while the demonstration requirement would differ among the three options, all other elements of the outside useful life program would be the same, including the notification process and the public listing of conversion systems qualifying for EPA-compliant status. We also proposed that the same requirements and criteria for test groups, engine families, and evaporative refueling family designations for intermediate age vehicles and engine would also apply to outside useful life vehicles and engines.

We requested comment on all aspects of the outside useful life demonstration options and especially on the relative advantages and disadvantages of each of the options with regard to clarity of what would be required, ability of conversion manufacturers to satisfy the demonstration requirement, quality of information EPA would receive to evaluate emissions performance and durability, and enforceability.

*What commenters said:*

*General Comments:*

Roush commented that the outside useful life exhaust demonstration should entail a comparison of FTP data from testing the vehicle on the original fuel and the converted fuel. Roush further commented that EPA should streamline the evaporative demonstration process relative to certification, and provided specific suggestions for how to do that. Their suggestions included EPA approval by design and approval based on data demonstrating that canister purge function is identical when operating on the fuel used by the OEM at the time of the original certification, and when the vehicle is operated on the alternative fuel.

RRCT commented that they did not support any of the outside useful life options because all three had limitations. They further commented that EPA should not allow untested aftermarket systems be installed on outside useful life vehicles.

Reed commented that their experience in the other countries has shown that a lack of emission testing requirements has resulted in inferior CNG conversion products being sold and has therefore slowed the adoption of CNG engine technology.

Caterpillar commented that they agree with EPA's proposal to use the same test procedures as the intermediate age program for the outside useful life compliance demonstration.

Wallace questioned whether EPA would ever use data submitted under Option 2 or Option 3 as the basis for an enforcement action.

*Comments on Option 1:*

APG comments generally supported the Option 1 technical description demonstration requirement and stated that it is appropriate to include emissions data in the submission.

Diesel 2 Gas commented that they believe Option 1 is appropriate for outside useful life vehicles.

Wallace commented that he supports Option 1 and that EPA should rely on existing periodic state emissions testing.

Florida DEP commented that they support Option 1 and agree that it is appropriate to require manufacturers to submit a sufficiently detailed description to show that the conversion technology is technically sound and is applied according to principles of good engineering judgment.

*Comments on Option 2:*

APG commented that they agree with the proposed requirements to submit two sets of exhaust emission test data, with the first conducted before conversion and the second submitted after conversion under Option 2. However APG also commented that EPA should offer less burdensome alternatives to engine-dynamometer testing.

CVEF commented in support of Option 2 with modifications. The comments stated that OBD scan tool procedures are not adequate and that EPA should require full OBD system testing in addition to an engineering judgment statement.

TCEQ commented in support of Option 2.

NGVA supported both options 2 and 3. NGVA stated that the final rule could allow two separate pathways for beyond useful life vehicles and engines even though EPA indicated that only one option would be finalized. NGVA also commented that it is not appropriate to select only one option if other options truly have merit and that therefore both options 2 and 3 should be retained in the final rule.

Reed commented that “pre-testing,” meaning conducting a baseline emission test before an outside useful life vehicle is fuel converted, is unnecessary and even improper. Reed expressed concern that the baseline test may be conducted on an unrepresentative vehicle, thereby making the results obtained on the fuel converted vehicle questionable. Reed stated that such comparisons could result in an EPA approval that results in

building poorly designed conversion systems for vehicles/engines in the outside useful life program.

*Comments on Option 3:*

Utah commented in support of Option 3 as it would provide states and EPA with the highest assurance that the OBD system is intact. Utah further suggested allowing Option 1 for vehicles that do not have an OBD system.

NGVA commented that EPA should adopt both Options 2 and 3 since both options have merit.

Chew commented that he supports Option 3 because it includes the submission of demonstration data as well as validation that the OBD system is functioning properly. Chew also stated that under most state I/M programs, each OBD test costs only about \$30.

*Our response:*

EPA is finalizing the outside useful life demonstration described in the proposal as Option 3. EPA believes that the combination of a detailed technical description and an OBD scan tool test report will provide sufficient information to determine whether a conversion system merits exemption from the tampering prohibition by maintaining or improving upon emissions from the original configuration vehicle or engine. EPA further believes that the burden associated with satisfying this demonstration requirement is reasonable for outside useful life converters.

EPA received comments in support of all the outside useful life options presented in the proposal. However, the comments favoring Option 2 did not provide data or other substantive evidence to support a conclusion that the additional cost and burden associated with two sets of FTP tests would be justified for outside useful life vehicles and engines. EPA believes that the good engineering judgment demonstration requirement will provide a sufficient basis for assessing the technical viability of conversion systems intended for outside useful life vehicles and engines. In addition, the OBD scan tool procedure will demonstrate that the OBD system is functional after conversion.

EPA thoroughly evaluated all three options for the outside useful life demonstration requirement. Ultimately the decision to finalize Option 3 resulted from balancing concerns about a sufficiently robust environmental demonstration with careful consideration of the cost concerns of the conversion industry about Option 2, particularly for situations in which back-to-back FTP testing would be necessary. EPA recognizes that the cost and practical burden of back-to-back FTP testing could inadvertently limit participation of converters with well-engineered and potentially environmentally beneficial conversions from the outside useful life program.



Options 1 and 3 include technically rigorous but potentially less costly demonstration requirements. EPA estimated the cost for most converters to complete an Option 1 or Option 3 demonstration would be far less than Option 2, since Option 2 could require two sets of tests. The only difference between Options 1 and 3 is the addition in Option 3 of an OBD scan tool report to the good engineering judgment demonstration. EPA is finalizing Option 3 over Option 1 because, for very little additional cost, it provides a strong measure of assurance that the OBD system functions properly and that emissions from the converted vehicle/engine do not exceed OBD thresholds.

The Option 3 good engineering judgment demonstration can include test data. Thus EPA may request that the manufacturer submit emissions results from back-to-back FTP testing if EPA believes such data is necessary to fully evaluate a system's viability. Similarly, converters may voluntarily use test procedures outlined in Option 2 to support their good engineering judgment demonstration.

The Roush proposals for alternative paths for dual-fuel conversions to demonstrate outside useful life compliance with exhaust and evaporative emission are similar to the proposed Option 2. As described above, EPA believes that the good engineering judgment demonstration requirement, which could include testing, in combination with the OBD scan tool report, will provide a sufficient basis for assessing the technical viability and emission control system integrity of conversion systems intended for older vehicles/engines. Converters may submit results from FTP testing on the original fuel and FTP testing on the new alternative fuel to support their good engineering judgment demonstration in conjunction with data showing that the evaporative emission system purges hydrocarbon in an identical manner when operating on the OEM base fuel and on the alternative fuel. Please see section 11.3 for a response to Roush's comments about an evaporative emission demonstration for dual-fuel and mixed-fuel vehicles.

EPA disagrees with Reed's comment that before and after testing is inappropriate for vehicles/engines in the outside useful life program. Outside useful life converters must submit a detailed technical description of the conversion system, including emission test data if requested, to allow EPA to evaluate the emission performance and durability of the conversion system. If this information is satisfactory, including a satisfactory OBD scan tool report if the vehicle/engine is OBD equipped, EPA is confident that the conversion system in question meets the criteria for an exemption from tampering. Reed's concern that a baseline test could be conducted on an unrepresentative vehicle, thereby making the results obtained on the fuel converted vehicle questionable is addressed in the requirement that the EDV/EDE must be a worst case vehicle/engine that adequately represents the test group/engine family. An unrepresentative vehicle does not satisfy the good engineering judgment criteria for a qualified worst case EDV/EDE.

In response to Caterpillar's support for applying the intermediate age program to outside useful life vehicles/engines, EPA will consider an intermediate age demonstration as an acceptable demonstration of outside useful life compliance. However, since the full useful life standards are no longer applicable to vehicles/engines outside useful life, EPA

does not agree that this is the only pathway for conversion of vehicles and engines outside useful life. Therefore EPA is finalizing both the ability to use the intermediate age program as well as the outside useful life program called Option 3 in the proposal.

EPA fully intends to use the information provided in conversion manufacturer demonstration and notification submissions to fulfill its compliance oversight responsibilities, including undertaking enforcement action when necessary.

## 11.5 Outside Useful Life Subcategories

### *What we proposed:*

We requested comment on whether to establish a subcategory of outside useful life vehicles and engines that reach the mileage threshold for outside useful life status before they reach the age threshold in years. EPA also requested comment as to whether manufacturers of conversion systems for this subcategory of vehicles and engines should be required to satisfy a different demonstration requirement than would be required for conversion of vehicles/engines in the “old by year” outside useful life subcategory.

### *What commenters said:*

TCEQ recommended that the criteria for categorizing the outside useful life program be based solely on vehicle age without consideration for mileage accumulation, thereby negating the need to establish a subcategory of ‘younger’ outside useful life vehicles that may have exceeded their useful in mileage, but not in age.

Wallace commented that EPA should not make two outside useful life subcategories. He commented that we should expect consumers to be able to understand the years or mileage threshold concept.

Caterpillar commented that the category of engines/vehicles outside the emissions useful life should be based on the established definitions of either mileage or years, whichever occurs first, rather than be based on only years.

NGVA commented that they have not developed a position on whether vehicles or engines that are outside of their useful life only because of mileage should only have the option of pursuing Option 2.

APG commented that EPA should define outside useful life associated with vehicle mileage or operational time rather than age in years because engine wear is a direct function of usage and maintenance. APG also stated that exhaust system aftertreatment degradation occurs during engine/vehicle operation, and age (without operation) in a properly maintained engine and vehicle does little to degrade the engine function.

*Our response:*

EPA is finalizing a single outside useful life category that maintains the age-or-mileage threshold, whichever comes first. EPA agrees with the Caterpillar and Wallace comments stating that the statutory definition of useful life, which is reached by either age or mileage (or hours, if applicable), is the appropriate threshold for the outside useful life clean alternative fuel conversion program. Creating a separate subcategory of outside useful life vehicles would create unnecessary confusion and would not provide an environmental benefit. EPA disagrees with TCEQ's comment that the criteria for the outside useful life program should be based solely on vehicle age. EPA's emissions durability program is based on years of experience using accelerated aging cycles, such as rapid mileage accumulation on test tracks or bench aging of emission control components on a laboratory engine dynamometer. EPA believes the durability of key emission control components such as the catalyst is generally a function of the quantity of exhaust gas which passes through it, not simply the age of the catalyst. Therefore, EPA believes that vehicle mileage/engine hours of use are at least as important if not more significant in predicting emission system deterioration than vehicle/engine age in years.

## 12. Other Comments Related to this Rulemaking

### 12.1 Averaging, Banking, and Trading (ABT)

*What we proposed:*

We did not propose any ABT provisions for clean alternative fuel conversions.

*What commenters said:*

Caterpillar commented that fuel converters should be permitted to use ABT provisions.

*Our response:*

ABT provisions are appropriate for the original equipment vehicle or engine certificate holder. However, ABT programs, like fleet average standards, are not generally appropriate for clean alternative fuel conversion manufacturers because the fleet of vehicles/engines to which a conversion system may be applied has already been accounted for under the OEM's ABT program and fleet average. An OEM credit-generating vehicle that is subsequently fuel converted would create duplicative credits if fuel converters were to participate in ABT programs. The OEM fleet average is generally derived from the production- or sales-weighted average of individual test group/engine family certification levels in a given model year. Under the clean alternative fuel conversion program, conversion manufacturers will comply with the certification standard applicable to OEM vehicles or engines, if the vehicle/engine is within its useful life, or will demonstrate that emissions are not degraded after conversion, if the converted vehicle/engine is outside useful life. Accordingly, clean alternative fuel conversions will

be consistent with the applicable OEM standard and will not affect the OEM fleet average. Therefore it is not necessary to require compliance with an additional clean alternative fuel conversion fleet average. There are no provisions allowing fuel converters to participate in ABT, and EPA is not making any changes with respect to ABT options at this time.

## 12.2 California Regulations

### *What we proposed:*

We proposed to streamline the compliance process for clean alternative fuel conversion manufacturers pursuant to our CAA authority. California maintains its own mobile source emissions program, which is implemented by CARB. EPA's proposal did not address the CARB program for alternative fuel conversions.

### *What commenters said:*

IMPCO stated that EPA should clarify that EPA approved retrofit systems may be used in states that have not specifically adopted CARB retrofit standards. The Collaborative and NGVA stated that EPA should provide guidance regarding the legality of converting vehicles in states that have adopted CARB regulations.

### *Our response:*

EPA's final rule does not address this issue. Questions regarding California's retrofit regulations are beyond the scope of this rule. California's regulations pertaining to alternative fuel conversions for light-duty vehicles are located in title 13 California Code of Regulations sections 2030 and 2031, and those for heavy-duty are located in section 1956.9. Manufacturers introducing conversion kits into commerce in California states that adopt California standards will need to address these requirements. Questions regarding California's program should be directed to CARB.

## 12.3 Associated Costs of this Rulemaking

### *What we proposed:*

The proposal presented an estimate of costs associated with satisfying the proposed demonstration requirements for conversion manufacturers seeking an exemption from the tampering prohibition.

### *What commenters said:*

Reed commented that there were basic flaws in EPA's estimate of costs for heavy-duty engine conversions. Reed further commented that, while EPA in general

accurately estimated the cost of a single emissions test for a heavy-duty engine, new engines rarely pass on the first test and therefore EPA had underestimated the costs.

IMPCO stated that conversion manufacturers must undergo rigorous, costly, and time-consuming certification testing and diagnostic validation that adds significant time and expense to the cost of every test group, usually for only a couple hundred units of sales per test group. IMPCO also commented that the proposed new label content would create a proliferation of labels and result in increased label printing costs that would recur each year when certificates are renewed.

*Our response:*

EPA's cost analysis estimated the cost reduction resulting from the proposed regulatory changes. The estimate did not include the costs converters might incur for technology research and development because they are not expected to change as a result of this rulemaking.

EPA does not agree with the comment suggesting that the new label content will create a proliferation of labels that conversion manufacturers need to print, thereby increasing costs. Each certificate or notification represents a unique combination of fuel conversion test group/engine family and evaporative/refueling family. A conversion test group/engine family may represent more than one OEM test group or evaporative/refueling family, and the label may contain all applicable OEM test groups and evaporative/refueling family combinations to which the conversion system is applicable. The revised label content must now list the OEM test group(s) for which the conversion system is appropriate. However, EPA expects that any potential costs associated with satisfying this requirement will be offset by other features of the new regulations. In particular, it will now be possible for conversion manufacturers to combine more OEM test groups under a single fuel conversion test group. EPA also notes that conversion manufacturers will no longer need to renew certificates annually to retain their tampering exemption, and will therefore not need to print new labels each year.

## 12.4 Zero Emission Components

*What we proposed:*

We did not propose any provisions for zero emission components.

*What commenters said:*

ConVerdant commented that "zero emission" components that do not modify or adversely affect the engine and emission control system should be excluded from the proposed and existing sections of the part 85 conversions regulations.

*Our response:*

EPA is finalizing coverage of all conversion components under 40 CFR part 85 as proposed because EPA believes it is important to provide a clear regulatory pathway for all converters seeking an exemption from the tampering prohibition. Even components that are assumed to have no emissions impact because they do not directly modify or affect the engine and emission control system may adversely affect exhaust and/or evaporative emissions. An example is the conversion of an OEM certified hybrid electric vehicle (HEV) to a plug-in hybrid electric vehicle (PHEV). The addition of PHEV technology to the OEM certified HEV may affect the number and frequency of “cold starts” over EPA defined test cycles. Effective exhaust emission control requires that the catalyst maintain a threshold operating temperature. An increase in “cold starts” over the test cycles may adversely affect exhaust emission compliance by reducing the catalyst operating temperature following a period of engine shutdown. Similarly, reducing the amount of the evaporative emission canister purge due to reduced engine operation may adversely affect compliance with evaporative emission standards.

## 12.5 Engine versus Vehicle Certification

*What we proposed:*

EPA proposed that conversion manufacturers demonstrating compliance with applicable emission standards to qualify for a tampering exemption would do so according to the same standards and test procedures in place for the OEM. There are some differences in the way the vehicle and engine regulations apply.

*What commenters said:*

ALTe questioned whether certification is based on the engine or the underlying vehicle.

*Our response:*

EPA clarifies that our approach is a legacy approach; that is, a conversion manufacturer must demonstrate compliance using the same standards and test procedures in place for the OEM.

## 12.6 Certificate Expiration

*What we proposed:*

We proposed that conversions of new vehicles and engines would need to be covered by a certificate of conformity to qualify for an exemption from the tampering prohibition. We also proposed to allow, but not require, conversions of intermediate age vehicles and engines to qualify for an exemption from the tampering prohibition by

obtaining a certificate of conformity. The proposal stated that a certificate is valid until December 31<sup>st</sup> of the model year on the certificate.<sup>25</sup>

*What commenters said:*

EPA received numerous comments regarding certificate eligibility and expiration.

RRTC stated that EPA should issue certificates for intermediate age vehicle and engine conversions and that the certificates should not need to be renewed from year-to-year.

NPGA commented that certificates issued under the “new” vehicle and engine framework should not expire and should require no renewal. NPGA stated that non-expiring certificates would effectively eliminate the need for an intermediate age grouping and avoid potential funding problems that could arise for kit manufacturers who apply for grants from the Department of Energy that are dependent upon EPA certification.

IMPCO commented that certificates issued for conversion technologies should be valid indefinitely and should not expire

Chew commented that EPA should clarify the length of certificate validity and suggested that EPA add language to the certificate such as: “For the clean alternative fuel vehicle and engine conversions, each certificate is valid for that (i) specific model year, or (ii) prior model years than (i), if no substantial changes have occurred unless the CO has been superseded.”

NGVA commented that this rule only applies to existing vehicles, not new vehicles as defined by section 216 of the CAA, which covers vehicles for which the title has not been transferred to the ultimate purchaser. Therefore, EPA could establish a different definition of model year and different time frame for certificates issued to conversion manufacturers who manufacture systems intended for use on used vehicles or engines. NGVA recommended that the model year of the certificate should be the year in which certificate is granted and the certificate should not expire.

*Our response:*

EPA is maintaining the certification policy as proposed. Nonetheless EPA recognizes that converters wish to retain protection against a tampering violation and wish to maintain eligibility for tax credits and other programs that rely on a valid certificate.

EPA has determined that the exemption from tampering for qualifying vehicles and engines does not end with the expiration of the certificate as long as the conditions under which the certificate was issued remain unchanged. The final clean alternative fuel

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<sup>25</sup> 75 FR 29619 (May 26, 2010).

conversions rule provides pathways, including a certification pathway, by which converters may secure an exemption from the CAA tampering prohibition. It is EPA's position that once a conversion manufacturer has secured the exemption through certification, even though the certificate expires, the exemption does not expire and does not need to be renewed each year.

## 12.7 Changes Affecting the Economy

### *What commenters said:*

Petkov commented that EPA should not make changes that would harm the economy.

### *Our response:*

EPA projects that this rule will generally reduce the cost of compliance for conversion manufacturers and will therefore not have adverse economic effects.

## 12.8 Miscellaneous

### *What commenters said:*

An anonymous commenter stated that there is no current pathway to convert a gasoline powered vehicle to a diesel powered vehicle.

### *Our response:*

The clean alternative fuel conversion regulations could be used to demonstrate that the conversion of a gasoline to a diesel vehicle qualifies for an exemption from the tampering prohibition.

## 13. Other comments received

### 13.1 Comments Outside the Scope of this Rulemaking

#### *What commenters said:*

An anonymous comment stated that emissions or safety failures should not be indicated by a yellow "Check Engine" maintenance light because the light is assumed to pertain to the mechanical operation of the vehicle. The commenter suggested that a safety or emissions indicator should say something like "Failed Inspection" so that its purpose is not confused with a service reminder.



Caterpillar commented that fuel converters should be required to comply with EPA's service information requirements in 40 CFR part 86.

Reed questioned why the proposal prohibits any remanufacturer/converter from seeking EPA certification for remanufactured engines and does not include a pathway to apply for and receive EPA certification.

*Our response:*

Regarding the comment about the MIL, the scope of this rulemaking does not include making changes to the OBD malfunction indicator light (MIL). EPA took public comment on the design aspects of the MIL on September 24, 1991,<sup>26</sup> and finalized those requirements on February 19, 1993.<sup>27</sup>

Regarding the comment on service information availability, section 202(m)(5) of the CAA requires vehicle and engine manufacturers to make available to aftermarket service providers all information made available to their dealers that is needed for making emissions-related diagnoses and repairs. While EPA has generally considered these provisions to apply to manufacturers of new motor vehicles and engines, we have not thoroughly considered how the service information provisions should apply to alternative fuel converters. Because EPA did not propose or seek comment on applying the service information to alternative fuel converters, we believe it outside the scope of this rulemaking to require that alternative fuel converters comply with the service information provisions. Should EPA propose changes to the service information requirements in the future, we would consider how these provisions could apply to alternative fuel converters.

Regarding the comment on remanufacturers, remanufacture provisions are covered under 40 CFR 86.004-40, and do not fall within the scope of this rulemaking.

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<sup>26</sup> 56 FR 48272.

<sup>27</sup> 58 FR 9468.