(4) “Lean-on-cruise” calibration strategies. (i) In the Application for Certification, the manufacturer shall state whether any “lean-on-cruise” strategies are incorporated into the vehicle design. A “lean-on-cruise” air-fuel calibration strategy is defined as the use of an air-fuel ratio significantly greater than stoichiometry, during non-deceleration conditions at speeds above 40 mph. “Lean-on-cruise” air-fuel calibration strategies shall not be employed during vehicle operation in normal driving conditions, including A/C usage, unless at least one of the following conditions is met:

(A) Such strategies are substantially employed during the FTP or SFTP;

(B) Such strategies are demonstrated not to significantly reduce vehicle NMHC+NO\textsubscript{X} emission control effectiveness over the operating conditions in which they are employed;

(C) Such strategies are demonstrated to be necessary to protect the vehicle occupants, engine, or emission control hardware.

(ii) If the manufacturer proposes to use a “lean-on-cruise” calibration strategy, the manufacturer shall specify the circumstances under which such a calibration would be used, and the reason or reasons for the proposed use of such a calibration.

(iii) The provisions of this paragraph (e)(4) shall not apply to vehicles powered by “lean-burn” engines or diesel-cycle engines. A “lean-burn” engine is defined as an Otto-cycle engine designed to run at an air-fuel ratio significantly greater than stoichiometry during the large majority of its operation.

(5) Applicability to alternative fuel vehicles. These SFTP standards do not apply to vehicles certified on fuels other than gasoline and diesel fuel, but the standards do apply to the gasoline and diesel fuel operation of flexible-fuel vehicles and dual-fuel vehicles.

(6) Single-roll electric dynamometer requirement. For all vehicles certified to the SFTP standards, a single-roll electric dynamometer or a dynamometer which produces equivalent results, as set forth in §86.108, must be used for all types of emission testing to determine compliance with the associated emission standards.


(a) Fleet average NMOG standards and compliance. (1) Each manufacturer shall certify light-duty vehicles or light light-duty trucks to meet the exhaust emission standards in this subpart for TLEVs, LEVs, ULEVs, or ZEVs, or the exhaust emission standards of §86.096–8(a)(1)(i) and subsequent model year provisions or §86.097–9(a)(1)(i) and subsequent model year provisions, such that, using the applicable intermediate useful life standards, the manufacturer’s fleet average NMOG values for light-duty vehicles and light light-duty trucks sold in the applicable region according to the specifications of Tables R99–15 and R99–16 are less than or equal to the standards in Tables R99–15 and R99–16 in the rows designated with the applicable vehicle type, loaded vehicle weight, and model year, as follows:

<table>
<thead>
<tr>
<th>Vehicle type</th>
<th>Loaded vehicle weight</th>
<th>Model year</th>
<th>Fleet average NMOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light light-duty vehicles</td>
<td>All</td>
<td>1999</td>
<td>0.148</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000</td>
<td>0.095</td>
</tr>
<tr>
<td>and</td>
<td>0–3750</td>
<td>1999</td>
<td>0.190</td>
</tr>
<tr>
<td>Light light-duty trucks</td>
<td>3751–5750</td>
<td>1999</td>
<td>0.124</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000</td>
<td></td>
</tr>
</tbody>
</table>
(2)(i) For the purpose of calculating the HEV contribution factor for the fleet average NM0G value, a manufacturer may use adjusted values to estimate the contributions of hybrid electric vehicles (or “HEVs”) based on the range of the HEV without the use of the engine. See §86.1702 for definitions of HEV types for purposes of calculating adjusted NM0G emissions.

(ii) For the purpose of calculating fleet average NM0G values, vehicles that have no tailpipe emissions but use fuel-fired heaters and that are not certified as ZEVs shall be treated as Type A HEV ULEVs.

(3)(i) Each manufacturer’s applicable fleet average NM0G value for all light-duty trucks from 0–3750 lbs. loaded vehicle weight and light-duty vehicles sold in the applicable region according to Tables R99–15 and R99–16 shall be calculated in units of g/mi according to the following equation, where the term “Sold” means vehicles certified to the Federal Tier 1 Exhaust Emission Standards and Sold excluding HEVs and HEVs without tailpipe emissions:

\[ \text{Fleet average NM0G} = \frac{(\text{Total No. of Vehicles Sold} \times (0.25)) + (\text{No. of TLEVs Sold}) \times (0.125)) + (\text{No. of Type A HEV TLEVs Sold}) \times (0.100)) + (\text{No. of Type B HEV TLEVs Sold}) \times (0.113)) + (\text{No. of Type C HEV TLEVs Sold}) \times (0.125)) + (\text{No. of Type A HEV LEVs Sold}) \times (0.057)) + (\text{No. of Type B HEV LEVs Sold}) \times (0.066)) + (\text{No. of Type C HEV LEVs Sold}) \times (0.075)) + (\text{No. of Type A HEV ULEVs Sold}) \times (0.020)) + (\text{No. of Type B HEV ULEVs Sold}) \times (0.030)) + (\text{No. of Type C HEV ULEVs Sold}) \times (0.040))}{\text{Total No. of Vehicles Sold}} \]

(A) For model years 1997 through 2000, “Vehicles” means all light-duty trucks from 0–3750 lbs loaded vehicle weight and light-duty vehicles certified to the Federal Tier 1 Exhaust Emission Standards and Sold excluding HEVs and HEVs without tailpipe emissions.

(B) For model years 2001 and later, “Vehicles” shall include California-certified vehicles unless they are also certified under the National LEV program.

(B) The fleet average NM0G value for a manufacturer electing under paragraph (a)(3)(ii)(A) of this section not to calculate a fleet average NM0G value shall be deemed to be the applicable fleet average NM0G standard specified in Table R99–15 or R99–16 for the applicable model year.

(C) A manufacturer making the election under paragraph (a)(3)(ii)(A) of this section may not generate credits for that model year for light-duty

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### TABLE R99–16—FLEET AVERAGE NON-METHANE ORGANIC GAS STANDARDS (g/MI) FOR LIGHT-DUTY VEHICLES AND LIGHT LIGHT-DUTY TRUCKS SOLD IN THE ALL STATES TRADING REGION

<table>
<thead>
<tr>
<th>Vehicle type</th>
<th>Loaded vehicle weight</th>
<th>Model year</th>
<th>Fleet average NM0G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light-duty vehicles</td>
<td>All</td>
<td>2001 and later</td>
<td>0.075</td>
</tr>
<tr>
<td>Light light-duty trucks</td>
<td>0–3750</td>
<td>2001 and later</td>
<td>0.100</td>
</tr>
<tr>
<td>Light light-duty trucks</td>
<td>3751–5750</td>
<td>2001 and later</td>
<td>0.075</td>
</tr>
</tbody>
</table>
trucks from 0–3750 lbs LVW and light-duty vehicles.

(4)(i) Each manufacturer’s applicable fleet average NMOG value for all light-duty trucks from 3751–5750 lbs loaded vehicle weight sold in the applicable region according to Tables R99–15 and R99–16 shall be calculated in units of g/mi NMOG according to the following equation, where the term “Sold” means sold in the applicable region according to Tables R97–15 and R97–16, and the term “Vehicles” means light-duty trucks from 3751–5750 lbs loaded vehicle weight: (((No. of Vehicles Certified to the Federal Tier 1 Exhaust Emission Standards and Sold)×(0.32))+((No. of TLEV’s Sold excluding HEVs)×(0.160))+ ((No. of LEVs Sold excluding HEVs)×(0.100)) + (No. of ULEV’s Sold excluding HEVs)×(0.050))+HEV Contribution factor) / (Total No. of Vehicles Sold, including ZEVs and HEVs).

(A) For model years 1997 through 2000, “Vehicles” in the preceding equation shall include California-certified vehicles, including vehicles certified to California Tier 1 standards.

(B) For model years 2001 and later, “Vehicles” in the preceding equation shall not include California-certified vehicles unless they are also certified under the National LEV program.

(ii)(A) ‘‘HEV contribution factor’’ shall mean the NMOG emission contribution of HEVs to the fleet average NMOG. The HEV contribution factor shall be calculated in units of g/mi as follows, where the term “Sold” means sold in the applicable region according to tables R99–15 and R99–16.

\[
\text{HEV contribution factor} = ((\text{No. of Type A HEV TLEV’s Sold}) \times (0.130)) + ((\text{No. of Type B HEV TLEV’s Sold}) \times (0.145)) + ((\text{No. of Type C HEV TLEV’s Sold}) \times (0.160)) + ((\text{No. of Type A HEV LEVs Sold}) \times (0.075)) + ((\text{No. of Type B HEV LEVs Sold}) \times (0.087)) + ((\text{No. of Type C HEV LEVs Sold}) \times (0.100)) + ((\text{No. of Type A HEV ULEV’s Sold}) \times (0.025)) + ((\text{No. of Type B HEV ULEV’s Sold}) \times (0.037)) + ((\text{No. of Type C HEV ULEV’s Sold}) \times (0.050)).
\]

(iii)(A) For any model year in which a manufacturer certifies its entire fleet of light-duty trucks from 3751–5750 lbs LVW to intermediate useful life NMOG emission standards specified in §86.1709 that are less than or equal to the applicable fleet average NMOG requirements specified in Tables R99–15 and R99–16, the manufacturer may elect not to calculate a fleet average NMOG value for such vehicles for that model year.

(B) The fleet average NMOG value for a manufacturer electing under paragraph (a)(4)(ii)(A) of this section not to calculate a fleet average NMOG value shall be deemed to be the applicable fleet average NMOG standard specified in Table R99–15 or R99–16 for the applicable model year.

(5)(i) The calculation of the fleet average NMOG value pursuant to paragraphs (a)(3) and (a)(4) of this section shall exclude ATVs, as defined in §86.1702, purchased in the NTR by state governments. In determining the quantity of vehicles to be excluded from the NMOG calculations, a manufacturer shall only be required to exclude vehicles that are reported by the purchasing government in a timely manner, containing adequate information, directed to the representative of the manufacturer listed in the manufacturer’s application for certification. Such letter shall be considered timely only if it is received no later than February 1 of the calendar year following the model year of the purchased vehicles.

(ii) Adequate information includes the number of vehicles purchased, vehicle makes and models, and the associated engine families. A copy of the letter should be sent to: Director, Vehicle Programs and Compliance Division, U.S. Environmental Protection Agency, 2565 Plymouth Road, Ann Arbor, Michigan, 48105.

(6) For any model year prior to model year 2001 for which a manufacturer meets the definition of “low volume manufacturer” in §86.1702, it shall be exempt from the requirements in paragraph (a)(1) of this section. The requirements in paragraph (a)(1) of this section applicable to the 2001 and later model years shall apply to low volume manufacturers.

(b) Fleet average NMOG credit and debit calculations. (1) For each averaging set, as defined in §86.1702, manufacturers that achieve fleet average
NMOG values lower than the fleet average NMOG standard for the corresponding model year may generate credits.

(2) For each averaging set, manufacturers that obtain applicable fleet average NMOG values exceeding the fleet average NMOG standard for the corresponding model year shall generate credits.

(3) For each averaging set, credits and debits are to be calculated according to the following equation and rounded, in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications, which is incorporated by reference (see §86.1), to the nearest whole number (intermediate calculations will not be rounded): Number of Credits/Debits = (((Applicable Fleet Average NMOG Standard) – (Manufacturer’s Applicable Fleet Average NMOG Value)) × (Applicable Production)).

(4) For each applicable region and model year, a manufacturer’s available credits or level of debits shall be the sum of credits or debits derived from the respective class A and class B averaging sets for that region and model year. Paragraph (d)(2)(ii)(C) of this section contains a special provision for manufacturers that end model year 2000 with a debit balance in the NTR.

(c) Intermediate in-use emission standards. (1) Only credits generated in the NTR may be used to offset NMOG debits incurred in the NTR. Manufacturers may use in the ASTR credits generated in the NTR.

(2) Only after credits are earned may they be used, traded, or carried over to another model year. Before trading or carrying over credits to the next model year, a manufacturer must apply available credits to offset any of its debits from the same region, where the deadline to offset such debits has not yet passed.

(3) Credits earned in any given model year shall retain full value through the subsequent model year.

(4) Unused credits that are available at the end of the second, third, and fourth model years after the model year in which the credits were generated shall be discounted to 50%, 25%, and 0% of the original value of the credits, respectively. The discounting of credits also applies to credits transferred to other parties.

(5) Credits may not be used to remedy any nonconformities determined by a Selective Enforcement Audit, recall testing, or testing performed with respect to Title 13, Chapter 2, Articles 1 and 2 of the California Code of Regulations.

(6) Prior to model year 2001, low volume manufacturers may earn credits in the NTR to transfer to other motor vehicle manufacturers for use in the NTR or the ASTR, or to bank for their own use in the ASTR. Such credits will be calculated as set forth in paragraphs (a) and (b) of this section, except that the applicable fleet average NMOG standard shall be 0.25 g/mi NMOG for the averaging set for light light-duty trucks from 0–3750 lbs LVW and light-duty vehicles or 0.32 g/mi NMOG for the averaging set for light light-duty trucks from 3751–5750 lbs LVW. Credits shall be discounted in accordance with the provisions of paragraph (c)(4) of this section.

(7) Prior to model year 2001, manufacturers may earn credits in the ASTR states that are not in the NTR and may bank those credits for use in the ASTR. Such credits will be calculated as set forth in paragraphs (a) and (b) of this section, except that the applicable fleet average NMOG standard shall be 0.25 g/mi NMOG for the averaging set for light light-duty trucks from 0–3750 lbs LVW and light-duty vehicles or 0.32 g/mi NMOG for the averaging set for light light-duty trucks from 3751–5750 lbs LVW, and “sold” shall mean sold in the ASTR states that are not in the NTR.

(i) Emission credits earned in the ASTR states outside the NTR prior to model year 2001 shall be treated as generated in model year 2001.

(ii) In the 2001 model year, a one-time discount rate of 10 percent shall be applied to all credits earned under the provisions of this paragraph (c)(7).

(iii) These credits shall be discounted in accordance with the provisions in paragraph (c)(4) of this section.

(8) Manufacturers may earn and bank credits in the NTR for model years 1997 and 1998. In states without a Section
177 Program effective in model year 1997 or 1998, such credits will be calculated as set forth in paragraphs (a) and (b) of this section, except that the applicable fleet average NMOSG standard shall be 0.25 g/mi NMOSG for the averaging set for light light-duty trucks from 0–3750 lbs LVW and light-duty vehicles or 0.32 g/mi NMOSG for the averaging set for light light-duty trucks from 3751–5750 lbs LVW. In states that opt into National LEV and have a Section 177 Program effective in model year 1997 or 1998, such credits will equal the unused credits earned in those states.

(i) Emissions credits earned in the NTR prior to the 1999 model year shall be treated as generated in the 1999 model year.

(ii) In the 1999 model year, a one-time discount rate of 10 percent shall be applied to all credits earned under the provisions of this paragraph (c)(8).

(iii) These credits shall be discounted in accordance with the provisions in paragraph (c)(4) of this section.

There are no property rights associated with credits generated under the provisions of this section. Credits are a limited authorization to emit the designated amount of emissions. Nothing in the regulations or any other provision of law should be construed to limit EPA’s authority to terminate or limit this authorization through a rulemaking. If EPA were to terminate or limit the authorization to emit associated with emissions credits generated under the provisions of this section, this paragraph (c)(9) would have no effect on manufacturers’ ability to opt out of the National LEV program pursuant to §86.1707.

Fleet average NMOSG debits. (1) Manufacturers shall offset any debits for a given model year by the fleet average NMOSG reporting deadline for the model year following the model year in which the debits were generated. Manufacturers may offset debits by generating credits or acquiring credits generated by another manufacturer. Only credits generated in the NTR may be used to offset NMOSG debits generated in the NTR.

(2) The provisions of this paragraph (d)(2) apply only when a manufacturer has a debit balance in the NTR at the end of model year 2000. Manufacturers shall offset any debits incurred in the NTR for model year 2000 by the fleet average NMOSG reporting deadline for model year 2001.

(i) A manufacturer may offset debits generated in the NTR in model year 2000 either by generating credits in the NTR in model year 2001 or by applying NTR credits acquired under the provisions of this section.

(ii) If a manufacturer has a debit balance in the NTR at the end of model year 2000, then such manufacturer shall be required to calculate fleet average NMOSG values for both the NTR and the ASTR for model year 2001.

(A) The ASTR values shall be calculated according to paragraphs (a) and (b) of this section, with the fleet average NMOSG standards equal to the standards for model year 2001 in the ASTR.

(B) If such a manufacturer has a credit balance in the NTR for model year 2001, before trading or carrying over credits to the next model year, the manufacturer must apply available NTR credits to offset its debits in the NTR.

(C) Notwithstanding paragraph (b)(4) of this section, for the ASTR and model year 2001, such a manufacturer’s available credits or level of debits shall be the sum of credits or debits derived from the respective class A and class B averaging sets for the ASTR and model year 2001, minus any credits used pursuant to paragraph (d)(2)(ii)(B).

(iii) To transfer a credit as an NTR credit earned in model year 2001, a manufacturer must have credits generated in the NTR based on separate fleet average NMOSG values calculated for the NTR in model year 2001. In addition, the number of model year 2001 NTR credits available for a manufacturer to transfer cannot exceed the manufacturer’s available number of model year 2001 ASTR credits. Any transferred model year 2001 NTR credits shall be deducted from the manufacturer’s available model year 2001 ASTR credits.

(3)(i) Failure to meet the requirements of paragraphs (a) through (d) of this section within the required time frame for offsetting debits will be considered to be a failure to satisfy the
§ 86.1711–99 Limitations on sale of Tier 1 vehicles and TLEVs.

(a) In the 2001 and subsequent model years, manufacturers may sell Tier 1 vehicles and TLEVs in the NTR only if vehicles with the same engine families are certified and offered for sale in California in the same model year, except as provided under §86.1707(d)(4).