ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9, 59, 60, 85, 86, 88, 89, 90, 91, 92, 94, 1027, 1033, 1036, 1037, 1039, 1042, 1043, 1045, 1048, 1051, 1054, 1060, 1065, 1066, 1068, and 1074

[EPA–HQ–OAR–2019–0307; FRL–10018–52–OAR]

RIN 2060–AU62

Improvements for Heavy-Duty Engine and Vehicle Test Procedures, and Other Technical Amendments

Corrections

In rule document 2021–05306, appearing on pages 34308–34590, in the issue of Tuesday, June 29, 2021, make the following corrections:

§ 1036.301 [Corrected]

■ 1. On page 34380, in the first column, in the sixth line above Table 1, ''Mreduction'' should read ''$M_{\text{reduction}}$''.

§ 1036.540 [Corrected]

■ 2. On page 34396, in the first column, at the top of the page, before (i) insert:

''(3) Run GEM for each simulated vehicle configuration as follows:''

§ 1037.528 [Corrected]

■ 3. On page 34474, in the third column, after amendatory instruction 152, the section heading should read:

§ 1037.528 Coastdown procedures for calculating drag area (C_dA).

§ 1037.540 [Corrected]

■ 4. On page 34477, in the second column, in the tenth line below Eq. 1037.540–2, ''$\bar{p}_{\text{circuit-2}}$'' should read ''$p_{\text{circuit-2}}$''

§ 1037.550 [Corrected]

■ 5. On page 34479, in the third column in paragraph (f)(4), ''$k\alpha_B = 4.0$'' should read ''$k_{a\text{B}} = 4.0$''.

■ 6. On page 34481, in Table 1 of § 1037.550, in the first column, in the first line, ''Slope, $a;_1$'' should read ''Slope, a_1''.

§ 1037.560 [Corrected]

■ 7. On page 34485, in the first column, paragraph (f) introductory text should read:

(f) Calculate the mean power loss, $\overline{P}_{\text{loss}}$, at each test point as follows:

■ 8. On the same page, in the second column, (f)(2) should read:

(2) Calculate $\overline{P}_{\text{loss}}$ as the mean power loss from all measurements at a given test point.

■ 9. On the same page, in the third column (f)(3) should read:

(3) The following example illustrates a calculation of $\overline{P}_{\text{loss}}$:

* * * * *

■ 10. On the same page, in the first column paragraph (g) introductory text should read:

(g) Create a table with the mean power loss, $\overline{P}_{\text{loss}}$, corresponding to each test point for input into GEM. Express wheel angular speed in r/min to one decimal place; express output torque in N·m to two decimal places; express power loss in kW to four decimal places.

■ 11. On the same page, in the third column, (h)(3) should read:

(3) Determine $\overline{P}_{\text{loss}}$ of untested axles for each speed and torque setpoint based on a linear relationship between your declared power loss and axle ratio as follows:

* * * * *

■ 12. On page 34486, in the first column, (h)(4) should read:

(4) Select declared values of $\overline{P}_{\text{loss}}$ for untested configurations that are at or above the values you determined in paragraph (h)(3) of this section.

§ 1037.565 [Corrected]

■ 13. On page 34487, in the first column, paragraph (f) introductory text should read:

(f) Calculate the mean power loss, $\overline{P}_{\text{loss}}$, at each operating condition as follows:

* * * * *

■ 14. On the same page, in the second column, the definition for $\bar{f}_{\text{nout}}$ and paragraph (f)(2) introductory text should read as follows:

$\bar{f}_{\text{nout}}$ = mean output shaft speed from paragraph (e)(6) of this section in rad/s. Let $\bar{f}_{\text{nout}} = 0$ for all tests with the transmission in neutral. See paragraph (f)(2) of this section for calculating $\bar{f}_{\text{nout}}$ as a function of $\bar{f}_{\text{nin}}$ instead of measuring f_{nout}.

(2) For transmissions that are configured to not allow slip, you may calculate $\bar{f}_{\text{nout}}$ based on the gear ratio using the following equation:

* * * * *

■ 15. On the same page, in the third column, paragraph (f)(3), paragraph (f)(4) introductory text, and the eighth line after paragraph (f)(4) introductory text should read as follows:

(3) Calculate $\overline{P}_{\text{loss}}$ as the mean power loss from all measurements at a given operating condition.

(4) The following example illustrates a calculation of $\overline{P}_{\text{loss}}$:

* * * * *

$\overline{P}_{\text{loss},3} = 4292 \text{ W} = 4.292 \text{ kW}$

* * * * *

■ 16. On page 34488, in the first column, lines 1–3 from the top of the page should read:

(g) Create a table with the mean power loss, $\overline{P}_{\text{loss}}$, corresponding to each operating condition for input into GEM.

§ 1037.570 [Corrected]

■ 17. On page 34489, beginning in the second column, lines 17–20 from the top should read as follows:

(e) Calculate the mean torque ratio, $\overline{\mu}$, at each tested speed ratio, v, as follows:

(1) Calculate $\bar{\mu}$ at each tested speed ratio as follows:

■ 18. On the same page, in the same column, in the 6th through 10 lines after Eq. 1037.570–1, paragraphs (e)(2) and (3) introductory text should read as follows:

(2) Calculate $\overline{\mu}$ as the average of the two values of $\bar{\mu}$ at each tested speed ratio.

(3) The following example illustrates a calculation of $\overline{\mu}$:

* * * * *

■ 19. On the same page, in the third column, paragraphs (f) introductory text, (f)(1) introductory text, (f)(2), and (f)(3) introductory text should read as follows:

(f) Calculate the mean capacity factor, $\overline{K}$, at each tested speed ratio, v, as follows:

(1) Calculate $\overline{K}$ at each tested speed ratio as follows:

* * * * *

(2) Calculate $\overline{K}$ as the average of the two values of $\overline{K}$ at each tested speed ratio.

(3) The following example illustrates a calculation of $\overline{K}$:

* * * * *

■ 20. On the same page, in the first column, beginning in the 7th line from the bottom, paragraph (g) should read as follows:

(g) Create a table of GEM inputs showing $\overline{\mu}$ and $\overline{K}$ at each tested speed ratio, v. Express $\overline{\mu}$ to two decimal places; express $\overline{K}$ to one decimal place; express v to two decimal places.

§ 1037.805 [Corrected]

■ 21. On page 34493, in Table 2 to § 1037.805—Symbols for Quantities, in the first column,

■ a. line 7 should read: a_g

■ b. line 8 should read: a_0

■ c. line 9 should read: a_1

■ 22. On page 34494, in the second column, in Table 3 to § 1037.805—Superscripts, in the first column, the second and third lines should read:

Double overbar (such as $\overline{y}$)

§ 1065.307 [Corrected]

■ 23. On page 34538, in the first column, in (c)(13), the first sentence should read as follows:

(13) Use the arithmetic means, $\bar{y}_i$, and reference values, y_{refi}, to calculate least-squares linear regression parameters and statistical values to compare to the minimum performance criteria specified in Table 1 of this section.

■ 24. On page 34539, in the second column, in paragraph (e)(3), (v) and (vi) should read as follows:

(v) For linearity verification of a fuel flow rate meter, $\dot{m}_{max}$ is the manufacturer's specified maximum fuel rate of the lowest-power engine expected during testing.

(vi) For linearity verification of a DEF flow rate meter, $\dot{m}_{max}$ is 10% of the manufacturer's specified maximum fuel rate of the lowest-power DEF-using engine expected during testing.

§ 1065.530 [Corrected]

■ 25. On page 34547, in the first column, paragraph (g)(5) should read as follows:

(g) * * *

(5) If you perform carbon balance error verification, verify carbon balance error as specified in the standard-setting part and § 1065.543. Calculate and report the three carbon balance error quantities for each test interval; carbon mass absolute error for a test interval (ε_{aC}), carbon mass rate absolute error for a test interval (ε_{aCrate}), and carbon mass relative error for a test interval (ε_{rC}). For duty cycles with multiple test intervals, you may calculate and report the composite carbon mass relative error, ε_{rCcomp}, for the whole duty cycle. If you report ε_{rCcomp}, you must still calculate and report ε_{aC}, ε_{aCrate}, and ε_{rC} for each test interval.

* * * * *

§ 1065.543 [Corrected]

■ 26. On page 34547, in the second column, paragraph (b)(1) should read:

(b) * * *

(1) Calculate carbon balance error quantities as described in § 1065.643. The three quantities for individual test intervals are carbon mass absolute error, ε_{aC}, carbon mass rate absolute error, ε_{aCrate}, and carbon mass relative error, ε_{rC}. Determine ε_{aC}, ε_{aCrate}, and ε_{rC} for all test intervals. You may determine composite carbon mass relative error, ε_{rCcomp}, as a fourth quantity that optionally applies for duty cycles with multiple test intervals.

■ 27. On the same page, in the same column, Eq. 1065.543–1 should read:

$$L_{\dot{o}aC} = c \cdot P_{max}$$

■ 28. On the same page, in the third column, Eq. 1065.543–2 should read:

$$L_{\dot{o}aCrate} = d \cdot P_{max}$$

■ 29. On the same page, in the same column, lines 12–17 should read:

$$L_{\dot{o}aCrate} = 0.31 \cdot 230.0 = 71.300 \text{ g/hr}$$

(iii) The carbon mass relative error limit, L_{erC}, is 0.020 for comparision to the absolute value of ε_{rC}, and optionally the absolute value of ε_{rCcomp}.

§ 1065.602 [Corrected]

■ 30. On page 34554, in the third column, in (l)(1)(ii), in the 8th line down, ''pumping, $\overline{P}$'' should read ''pumping, $\overline{P}_{frict}$.''

§ 1065.643 [Corrected]

■ 31. On page 34559, in the first column, Eq. 1065.643–7 should read:

$$\dot{o}_{aC} = m_{Cexh} - m_{Cfluid} - m_{Cair}$$

■ 32. On page the same page, in the third column, Eq. 1065.643–8 should read:

$$\dot{o}_{aCrate} = \frac{\dot{o}_{aC}}{t}$$

■ 33. On the same page, beginning in the same column, *Example:* for Eq. 1065.643–8 should read:

$\varepsilon_{aC} = -6.7$ g

$t = 1202.2$ s = 0.3339 hr

$$\dot{o}_{aCrate} = \frac{-6.7}{0.3339} = -20.065 \text{ g/hr}$$

■ 34. On the same page, in the second column, Eq. 1065.643–9 should read:

$$\dot{o}_{rC} = \frac{\dot{o}_{aC}}{m_{Cfluid} + m_{Cair}}$$

■ 35. On the same page, beginning in the first column, *Example:* for Eq. 1065.643–9 should read:

$\varepsilon_{aC} = -6.7$ g

$m_{Cfliud} = 975.3$ g

$m_{Cair} = 278.6$ g

$$\dot{o}_{rC} = \frac{-6.7}{975.3 + 278.6} = -0.0053$$

■ 36. On page 34560, at the top of the page, Eq. 1065.643–10 should read:

$$\dot{o}_{rCcomp} = \frac{\sum_{i=1}^{N} WF_i \cdot \frac{\left(m_{Cexhi} - m_{Cfluidi} - m_{Cairi}\right)}{t_i}}{\sum_{i=1}^{N} WF_i \cdot \frac{\left(m_{Cfluidi} + m_{Cairi}\right)}{t_i}}$$

■ 37. On the same page, in the first column, the formula before (iii) should read:

$$\dot{o}_{rCcomp} = \frac{\frac{1}{7} \cdot \frac{\left(1255.3 - 977.8 - 280.2\right)}{1} + \frac{6}{7} \cdot \frac{\left(1247.2 - 975.3 - 278.6\right)}{1}}{\frac{1}{7} \cdot \frac{\left(977.8 + 280.2\right)}{1} + \frac{6}{7} \cdot \frac{\left(975.3 + 278.6\right)}{1}} = -0.0049$$

■ 38. On the same page, in the same column, the formula before amendatory instruction 353 should read:

$$\dot{o}_{rCcomp} = \frac{0.85 \cdot \left(\frac{2.873 - 2.864 - 0.023}{123} \right) + 0.15 \cdot \left(\frac{0.125 - 0.095 - 0.024}{306} \right)}{0.85 \cdot \left(\frac{2.864 + 0.023}{123} \right) + 0.15 \cdot \left(\frac{0.095 + 0.024}{306} \right)} = -0.0047$$

§ 1065.650 [Corrected]

■ 39. On page 34561, in the third column, the fourth line after Eq. 1065.650–8 should read:

$\bar{n}_{dexh}$ = 57.692 mol/s

■ 40. On page 34563, in the first column, the ninth through eleventh lines after Eq. 1065.650–19 should read:

$\overline{P}$ = mean steady-state power over the test interval as described in paragraph (e) of this section.

§ 1065.655 [Corrected]

■ 41. On page the same page, in Table 1 of § 1065.655, delete column 1 and 2 headings and insert first entry to read as follows:

TABLE 1 OF § 1065.655—SYMBOLS AND SUBSCRIPTS FOR CHEMICAL BALANCE EQUATIONS

$X_{dil/exh}$	amount of dilution gas or excess air per mole of exhaust.

* * * * * * *

§ 1065.1005 [Corrected]

■ 42. On page 34576, in Table 1 of § 1065.1005, in the Symbol column, the first line should read ''α''.

§ 1066.1005 [Corrected]

■ 43. On page 34585, in Table 1 of § 1066.1005, in the Symbol column, the fifth line should read ''A_m''

[FR Doc. C2–2021–05306 Filed 10–25–22; 8:45 am]

BILLING CODE 0099–10–P