

ENCLOSURE B

Summary of Proposed Second 15-Day Changes to Proposed Regulation Order and Incorporated Test Procedures

Modifications to the Proposed Regulation Order.

§1961.2. Exhaust Emission Standards and Test Procedures - 2015 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

Subsection (a)(7)(B)

Footnote 1 to Table: It is necessary to modify this footnote to fix an incorrect reference.

Subsection (a)(7)(C)

Footnote 6 to Table: It is necessary to modify this footnote to fix incorrect references.

Subsection (b)(4)(B):

It is necessary to modify this footnote to fix incorrect references.

Summary of Proposed Second 15-Day Changes to “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles”

All second 15-day changes in this document except as otherwise noted:

The CFR sections incorporated by these subsections have been updated to the most current versions. These changes are needed to allow harmonization with federal regulations.

It is necessary to revise the titles of the incorporated CFR sections in those instances where they have been changed during the course of this rulemaking.

Part I. Subpart H

Subsection 4

Subsection 4.1

Subsection 4.1.2

A new subsection 4.1.2(a) has been added. It is necessary to add this new subsection to state that the incorporated CFR subparagraph applies to LEV III vehicles instead of federal Tier 3 vehicles.

It is necessary to re-letter the subsections following the addition of subsection 4.1.2(a) as subsections (b), (c), and (d).

Summary of Proposed Second 15-Day Changes to “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles”

Unless otherwise noted, all second 15-day changes in this document were made to update incorporated CFR sections in those instances where they have been changed during the course of this rulemaking.

Part III. Subpart G

Section 2: This change is needed to correct a CFR section reference to match how it is displayed in the CFR.

Subsection 2.1: This change is needed to correct a CFR section reference to match how it is displayed in the CFR.

Summary of Proposed Second 15-Day Changes to “California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles”

Unless otherwise noted, all second 15-day changes in this document were made to update incorporated CFR sections, in those instances where they have been changed during the course of this rulemaking.

Subpart S

Section I

Subsection I.B

Subsection I.B.3: This change is needed to correct a typographical error.

Subsection I.E

Subsection I.E.1.3: This change is needed to correct a typographical error.

Subpart B

Section II

Subsection II.B

Subsection II.B.4.4.3: This change is needed to fix an incorrectly referenced section.

Summary of Proposed Second 15-Day Changes to “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles”

All second 15-day changes in this document except as otherwise noted:

The CFR sections incorporated by these subsections have been updated to the most current versions. These changes are needed to allow harmonization with federal regulations.

Part II. Subpart H

1065.710

Section 2

Subsection (b)(2): It is necessary to modify the table to expand the allowable ethanol limit for California certification gasoline for heavy-duty Otto-cycle vehicles. This change is needed to align the allowable ethanol limit for California certification gasoline for heavy-duty Otto-

cycle vehicles with the allowable ethanol limit for California certification gasoline for LEV III vehicles.

Summary of Proposed Second 15-Day Changes to “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles”

All second 15-day changes in this document

The CFR sections incorporated by these subsections have been updated to the most current versions. These changes are needed to allow harmonization with federal regulations.

Summary of Proposed Second 15-Day Changes to “California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes”

Section B

Subsection B.1

“Default Mode”

A definition for “Default Mode” was added as a 45-day change. A second definition for “Default Mode” was added as a first 15-day change. These test procedures now contain two definitions for “Default Mode.” It is necessary to delete the definition that was part of the 45-day changes, since it is no longer needed.

It is necessary to replace “prefers” with “chooses to use” to clarify that selecting a driving mode is not necessarily a preference but a matter of choice.

“Grid-connected hybrid electric vehicle”

Plug-in hybrid electric vehicle or PHEV, which is synonymous with grid-connected hybrid electric vehicle, was added to the definition of grid-connected hybrid electric vehicle.

Section F

Introductory Paragraph 1: It is necessary to clarify that the 40 CFR part 1066 regulations referenced by this document are the dates identified in the “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” unless otherwise noted.

Introductory Paragraph 2: It is necessary to add a migration provision from 40 CFR Part 600 to 40 CFR Part 1066. This change is needed to allow harmonization with federal regulations.

Subsection F.1

It is necessary to clarify that electric dynamometers used for testing ZEVs and HEVs must meet the requirements of 40 CFR Part 1066 Subpart C.

It is necessary to delete “48-inch single-roll” to clarify that electric dynamometers used for testing ZEVs and HEVs are not required to be exclusively a 48-inch single-roll type.

It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Subsection F.3

Subsection F.3.1

Subsection F.3.1.1

Subsection F.3.1.1(b): The CFR section incorporated by this subsection has been updated to the most current version. This change is needed to allow harmonization with federal regulations.

Subsection F.3.1.1(c): It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Subsection F.3.1.1(d)

It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

It is necessary to remove the text “as applicable,” since only one section of the CFR is incorporated.

Subsection F.3.2

Subsection F.3.2.1

Subsection F.3.2.1(c): It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Subsection F.3.2.1(d)

It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

It is necessary to remove the text “as applicable,” since only one section in the CFR of incorporated.

Subsection F.3.5: The CFR sections incorporated by this subsection have been updated to the most current version. This change is needed to allow harmonization with federal regulations.

Subsection F.6

Introductory Paragraph 2

It is necessary to add “one or” and delete “than one” as well as change the singular “mode” to “modes” so a vehicle with only one driver-selectable mode is included in the requirement to determine worst case testing.

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

Subsection F.6.1

Introductory Paragraph 1: It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Subsection F.6.2

Subsection F.6.2.4

It is necessary to clarify state-of-charge (SOC) by changing the word “battery” to “initial” to indicate that the SOC is the initial SOC setting and not the battery SOC.

It is necessary to increase flexibility when setting the initial SOC by allowing an additional distance to be driven on the chassis dynamometer and not be restricted to driving solely additional UDDS cycles.

It is necessary to clarify that the $\pm 1\%$ SOC Net Energy Change Tolerance is being applied and not the alternative $\pm 5\%$ SOC Net Energy Change Tolerance.

It is necessary to add a restriction that setting the initial SOC is not permitted when using the alternative End-of-Test Criterion provided in section F.6.3.18.

Subsection F.6.2.6

It is necessary to clarify state-of-charge (SOC) by changing the word “battery” to “initial” to indicate that the SOC is the initial SOC setting and not the battery SOC.

It is necessary to clarify that the $\pm 1\%$ SOC Net Energy Change Tolerance is being applied and not the alternative $\pm 5\%$ SOC Net Energy Change Tolerance.

It is necessary to add a restriction that setting the initial SOC is not permitted when using the alternative End-of-Test Criterion provided in section F.6.3.18.

Subsection F.6.3

Introductory Paragraph 1: It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Subsection F.6.3.1:

It is necessary to add an “a” to clarify that only one hot-start UDDS cycle follows a cold-start UDDS cycle for the Urban Emission Test.

It is necessary to clarify how to test driver-selectable modes to determine worst-case emissions for the Urban Emission Test.

Subsection F.6.3.2: The CFR sections incorporated by this subsection has been updated to the most current version. This change is needed to allow harmonization with federal regulations.

Subsection F.6.3.17

It is necessary to add the title “End-of-Test Criteria” to section F.6.3.17 to clarify that this section defines the end-of-test criteria for the Urban Emission Test.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

Subsection F.6.3.18

It is necessary to simplify the language for the additional end-of-test criterion of $\pm 5\%$ SOC Net Energy Change Tolerance in Appendix C of SAE J1711 by deleting the CFR reference and stating the J1711 reference directly.

It is necessary to clarify that Executive Officer approval is required to use the Additional End-of-Test Criterion.

It is necessary to clarify that the $\pm 5\%$ SOC Net Energy Change Tolerance in Appendix C of SAE J1711 may not be used to correct measured values for criteria pollutant emissions.

Subsection F.6.3.18.1: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.6.3.18.2: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.6.3.18.3: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.6.3.18.4: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.7

Introductory Paragraph 1: It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Introductory Paragraph 2

It is necessary to add “shown to yield equivalent results and if” to correct this omission of this condition to qualify for alternative procedures.

Introductory Paragraph 3

It is necessary to add “one or” and delete “than one” as well as change the singular “mode” to “modes” so a vehicle with only one driver-selectable mode is included in the requirement to determine worst case testing.

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

Subsection F.7.1

Introductory Paragraph 1: It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Subsection F.7.1.2

It is necessary to add the phrase “End-of-Test Criteria” to clarify that the subsequent sentence defines the end-of-test criteria for the Highway Emission Test.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

Subsection F.7.1.4

It is necessary to simplify the language for the additional end-of-test criterion of $\pm 5\%$ SOC Net Energy Change Tolerance in Appendix C of SAE J1711 by deleting the CFR reference and stating the J1711 reference directly.

It is necessary to clarify that the $\pm 5\%$ SOC Net Energy Change Tolerance in Appendix C of SAE J1711 may not be used to correct measured values for criteria pollutant emissions.

Subsection F.7.1.4.1: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.7.1.4.2: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.7.1.4.3: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.7.1.4.4: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.8

Introductory Paragraph 2

It is necessary to add “one or” and delete “than one” as well as change the singular “mode” to “modes” so a vehicle with only one driver-selectable mode is included in the requirement to determine worst case testing.

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

Subsection F.8.1

Introductory Paragraph 1: It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Subsection F.8.1.10

It is necessary to add the phrase “End-of-Test Criteria” to clarify that the subsequent sentence defines the end-of-test criteria for the US06 Emission Test.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

Subsection F.8.1.12

It is necessary to simplify the language for the additional end-of-test criterion of $\pm 5\%$ SOC Net Energy Change Tolerance in Appendix C of SAE J1711 by deleting the CFR reference and stating the J1711 reference directly.

It is necessary to clarify that the $\pm 5\%$ SOC Net Energy Change Tolerance in Appendix C of SAE J1711 may not be used to correct measured values for criteria pollutant emissions.

Subsection F.8.1.12.1: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.8.1.12.2: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.8.1.12.3: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.8.1.12.4: This section was deleted since the CFR subparagraph that this section was revising was deleted.

Subsection F.8.2

Introductory Paragraph 1: It is no longer necessary to identify the date of the CFR reference since the introductory paragraph in Section F clarifies the effective dates of the CFR references.

Subsection F.8.2.3: It is necessary to correct the reference from “(d)(1)” to “(d).”

Subsection F.8.2.4: It is necessary to clarify how to operate the vehicle on the test cycle once the vehicle is started, how to test any driver-selectable modes, and when to follow the SC03 driving schedule.

Subsection F.8.2.5

It is necessary to correct the numbering from F.8.2.4 to F.8.2.5.

It is necessary to relocate the language defining a valid test by deleting it from the beginning of the section and placing it after the phrase “End-of-Test Criteria” to improve clarity.

It is necessary to add the phrase “End-of-Test Criteria” to clarify that the subsequent sentence defines the end-of-test criteria for the SC03 Emission Test.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

Subsection F.8.2.6: It is necessary to correct the numbering from F.8.2.5 to F.8.2.6.

Subsection F.8.2.7

It is necessary to correct the numbering from F.8.2.6 to F.8.2.7.

It is necessary to simplify the language for the additional end-of-test criterion of $\pm 5\%$ SOC Net Energy Change Tolerance in Appendix C of SAE J1711 by deleting the CFR reference and stating the J1711 reference directly.

It is necessary to clarify that the $\pm 5\%$ SOC Net Energy Change Tolerance in Appendix C of SAE J1711 may not be used to correct measured values for criteria pollutant emissions.

Subsection F.8.2.6.1: It is necessary to delete this section since the CFR subparagraph that this section was revising was deleted.

Subsection F.8.2.6.2: It is necessary to delete this section since the CFR subparagraph that this section was revising was deleted.

Subsection F.8.2.6.3: It is necessary to delete this section since the CFR subparagraph that this section was revising was deleted.

Subsection F.8.2.6.4: It is necessary to delete this section since the CFR subparagraph that this section was revising was deleted.

Subsection F.9

It is necessary to add “Charge” to the title of this section to clarify that this section applies to Off-Vehicle Charge Capable Hybrid Electric Vehicles.

Subsection F.9.2: It is necessary to clarify that the stored capacitor voltage has a maximum and a minimum tolerance.

Subsection F.10

Introductory Paragraphs 1 and 2

It is necessary to add hyphens to the terms “light-duty” and “medium-duty” because these terms are hyphenated in the name of the document referenced.

Section G

Subsection G.1

It is necessary to clarify that electric dynamometers used for testing off-vehicle charge capable HEVs must meet the requirements of 40 CFR Part 1066 Subpart C.

It is necessary to delete “48-inch single-roll” to clarify that electric dynamometers used for testing off-vehicle charge capable HEVs are not required to be exclusively a 48-inch single-roll type.

It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

It is necessary to remove the text “as applicable,” since only one section in the CFR is incorporated.

Subsection G.3

Subsection G.3.3: The CFR sections incorporated by this subsection has been updated to the most current version. This change is needed to allow harmonization with federal regulations.

Subsection G.5

Introductory Paragraph 3

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

Introductory Paragraph 4

It is necessary to add “one or” and delete “than one” as well as change the singular “mode” to “modes” so a vehicle with only one driver-selectable mode is included in the requirement to determine worst case testing.

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

It is necessary to move “NMOG + NOx” prior to “emissions” to be consistent with other such occurrences of “NMOG + NOx emissions” in the language.

Introductory Paragraph 8

It is necessary to add this paragraph to clarify the testing procedures that will be utilized for confirmatory and in-use compliance testing regarding the Urban Charge-Depleting Emission Test. Specifically, a second hot-start UDDS cycle will always be performed to ensure the vehicle was fully warmed up for the hot-start portion of the test.

It is necessary to clarify how to meet the alternative end-of-test criteria in accordance with sections G.5.4.3.1 and G.5.4.3.2.

It is necessary to clarify that the Alternative Urban Charge-Depleting Emission Test is unaffected by this test provision, and that only one hot-start UDDS cycle would be performed during confirmatory testing and in-use compliance testing.

Subsection G.5.1

Introductory Paragraph 1: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Subsection G.5.2

Subsection G.5.2.1

It is necessary to clarify that for vehicle preconditioning, the required charge-sustaining operation must be in default or normal mode.

It is necessary to delete the requirement to activate a driver-selectable mode for the preconditioning drive to ensure proper SOC levels for testing.

Subsection G.5.2.5

It is necessary to clarify that the specific charge-depleting emission test and charge-sustaining emission test are the Urban Charge-Depleting Emission Test and Urban Charge-Sustaining Emission Test, respectively.

It is necessary to add exceptions to setting the initial SOC to address certain testing conditions for the Urban Charge-Sustaining Emission Test.

It is necessary to increase flexibility when setting the initial SOC by allowing an additional distance to be driven on the chassis dynamometer and not be restricted to driving solely additional UDDS cycles.

It is necessary to clarify that the $\pm 1\%$ SOC Net Energy Change Tolerance is being applied and not the alternative $\pm 5\%$ SOC Net Energy Change Tolerance.

Subsection G.5.2.8

It is necessary to delete references to the Highway Charge Depleting Range Test and the optional Cold Start US06 Range Test since this subsection describes tests that use urban cycles and not highway or US06 cycles.

It is necessary to add exceptions to setting the initial SOC to address certain testing conditions for the Urban Charge-Sustaining Emission Test.

It is necessary to clarify that the $\pm 1\%$ SOC Net Energy Change Tolerance is being applied and not the alternative $\pm 5\%$ SOC Net Energy Change Tolerance.

It is necessary to correct the reference G.5.4.2 (ii) to G.5.4.5 (ii).

It is necessary to delete “charge depleting” from “urban charge-depleting emissions” since the emissions may not necessarily be from a charge-depleting test.

It is necessary to correct the reference G.5.4.2 (iv) to G.5.4.5 (iv).

Subsection G.5.2.8.1: It is necessary to add this subsection to prohibit setting the initial SOC after the preconditioning cycle or during the soak period if the alternative End-of-Test Criterion in section G.5.3.18 is used.

Subsection G.5.2.8.2: It is necessary to add this subsection to prohibit setting the initial SOC after the preconditioning cycle or during the soak period if the vehicle will be tested in charge-increasing driver-selectable mode.

Subsection G.5.2.8.3: It is necessary to add this subsection to clarify the initial SOC setting when testing a vehicle in charge-increasing operation on the Charge-Sustaining Emission Test.

Subsection G.5.3

Introductory Paragraph 1: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Subsection G.5.3.1

It is necessary to add an “a” to clarify that only one hot-start UDDS cycle follows a cold-start UDDS cycle for the Urban Charge-Sustaining Emission Test.

It is necessary to clarify how to test driver-selectable modes to determine worst-case emissions for the Urban Charge-Sustaining Emission Test.

It is necessary to clarify how to set SOC when testing a vehicle with a driver-selectable, charge-increasing mode.

Subsection G.5.3.2: The CFR sections incorporated by this subsection has been updated to the most current version. This change is needed to allow harmonization with federal regulations.

Subsection G.5.3.10: It is necessary to clarify that the Urban Charge-Sustaining Emission Test be initiated in the driver-selectable mode to be tested.

Subsection G.5.3.13: It is necessary to add “(d)” to correct the reference to Subparagraph (d)(2).

Subsection G.5.3.14: It is necessary to add “(d)” to correct the reference to Subparagraph (d)(2)(i).

Subsection G.5.3.15: It is necessary to add “(d)” to correct the reference to Subparagraph (d)(2)(ii).

Subsection G.5.3.16: It is necessary to add “(d)” to correct the reference to Subparagraph (d)(2)(iii).

Subsection G.5.3.17

It is necessary to add “(d)” to correct the reference to Subparagraph (d)(3).

It is necessary to add the title “End-of-Test Criteria” to section G.5.3.17 to clarify that this section defines the end-of-test criteria for the Urban Charge-Sustaining Emission Test.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

It is necessary to delete and relocate the language that provides an alternative end-of-test option to section 5.3.18.2 to improve clarity.

It is necessary to delete and relocate the language regarding confirmatory testing and in-use compliance testing to subsection G.5, introductory paragraph 8.

Subsection 5.3.18

It is necessary to correct the word from “Criterion” to “Criteria” since there are more than one end-of-test conditions to validate a test.

It is necessary to clarify that Executive Officer approval is required to use the Additional End-of-Test Criterion.

It is necessary to clarify that the Urban Charge-Sustaining Emission Test may be considered valid if one of the Additional End-of-Test Criteria is satisfied.

It is necessary to clarify the language for the additional end-of-test criteria by deleting the CFR reference and stating the end-of-test criteria directly.

Subsection G.5.3.18.1

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.5.3.18.1 that references Appendix C of SAE J1711 as one of the alternative End-of-Test criterion.

Subsection G.5.3.18.2

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.5.3.18.2 that provides a second alternative End-of-Test criterion.

Subsection G.5.3.18.3: It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.5.3.18.4: It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.5.4

Subsection 5.4.1: It is necessary to clarify that the SOC must be record when the engine starts operating during the all-electric range test.

Subsection G.5.4.2: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Subsection G.5.4.2.1

It is necessary to clarify that testing appropriate driver-selectable mode(s) is performed to determine worst case emissions.

It is necessary to change the word “are” to “shall be” to improve the clarity of this requirement.

It is necessary to update the outdated term “auxiliary power unit” with “engine.”

It is necessary to clarify that emissions are not required to be sampled during each test cycle where emissions are not generated (i.e., the engine does not start or run during the cycle).

It is necessary to update the outdated term “auxiliary power unit” with “engine.”

It is necessary to clarify that if the vehicle does not achieve full warm-up conditions than a subsequent hot-start UDDS cycle would be performed as opposed to the engine being less than hot.

Subsection G.5.4.2.2: The CFR sections incorporated by this subsection have been updated to the most current version. This change is needed to allow harmonization with federal regulations.

Subsection G.5.4.2.10: It is necessary to clarify that the Urban Charge-Depleting Emission Test be tested in the appropriate driver-selectable mode.

Subsection G.5.4.2.13 It is necessary to modify this subsection to clarify that “Subparagraph (2)” means “Subparagraph (d)(2).”

Subsection G.5.4.2.14: It is necessary to modify this subsection to clarify that “Subparagraph (2)(i)” means “Subparagraph (d)(2)(i).”

Subsection G.5.4.2.15: It is necessary to modify this subsection to clarify that “Subparagraph (2)(ii)” means “Subparagraph (d)(2)(ii).”

Subsection G.5.4.2.16: It is necessary to modify this subsection to clarify that “Subparagraph (2)(iii)” means “Subparagraph (d)(2)(iii).”

Subsection G.5.4.2.17

It is necessary to modify this subsection to clarify that “Subparagraph (3)” means “Subparagraph (d)(3).”

It is necessary to add a title to this subparagraph to facilitate reference to it elsewhere in these test procedures.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

It is necessary to delete and relocate the language that provides an alternative end-of-test option to section G.5.4.3.2 to improve clarity.

It is necessary to delete and relocate the language regarding confirmatory testing and in-use compliance testing to subsection G.5, introductory paragraph 8.

Subsection G.5.4.3

It is necessary to clarify that Executive Officer approval is required to use the Additional End-of-Test Criterion.

It is necessary to clarify that the Urban Charge-Depleting Emission Test may be considered valid if one of the Additional End-of-Test Criteria is satisfied.

It is necessary to clarify the language for the additional end-of-test criteria by deleting the CFR reference and stating the end-of-test criteria directly.

Subsection G.5.4.3.1

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.5.4.3.1 that references Section 3.9 and Section 3.9.1 of SAE J1711 as alternative End-of-Test criteria.

Subsection G.5.4.3.2

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.4.3.2 that provides a second alternative End-of-Test criterion.

Subsection G.5.4.3.3: It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.5.4.3.4: It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.5.4.5

Introductory Paragraph 1: It is necessary to replace the word “or” with “and” to indicate that the Alternative Urban Charge-Depleting Emission Test of section G.5.4.5 may replace the testing required in both sections G.5.3 and G.5.4.2.

Introductory Paragraph 2: It is necessary to delete “sub” from the word “subsection” to be consistent with the language used in this document that does not include the word “subsection” but only “section.”

Subsection G.5.4.5(iv)

It is necessary to delete “Charge Depleting” from the section title “Urban Charge-Depleting Emissions” since the emissions may not necessarily be from a charge-depleting test.

It is necessary to clarify that the normal operating SOC threshold during the UDDS cycle occurs when the vehicle is driving in default mode or normal mode.

It is necessary to clarify the steps to perform when testing a vehicle in a charge-increasing driver selectable mode.

It is necessary to clarify that all tests require that the engine starts at or before the first 45 seconds of the cold-start UDDS cycle to be valid.

It is necessary to delete a previous method of testing a vehicle in any driver-selectable charge-increasing mode.

Subsection G.5.6

Subsection G.5.6.1

Introductory Paragraph: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Subsection 5.6.2: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Subsection G.6

Introductory Paragraph 1: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Introductory Paragraph 2

It is necessary to add “shown to yield equivalent results and if” to correct this omission of this condition to qualify for alternative procedures.

Introductory Paragraph 4

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

Introductory Paragraph 5

It is necessary to add “one or” and delete “than one” as well as change the singular “mode” to “modes” so a vehicle with only one driver-selectable mode is included in the requirement to determine worst case testing.

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

Subsection G.6.1

Subsection G.6.1.1: It is necessary to clarify that the Highway Charge-Depleting Range Test is performed with the vehicle in default or normal mode.

Subsection G.6.1.2

Subsection G.6.1.2(i)

It is necessary to add the phrase “End-of-Test Criteria” to clarify that the subsequent sentence defines the end-of-test criteria for the Highway Emission Test.

It is necessary to provide the alternative End-of-Test Criteria from sections G.5.4.3.1 and G.5.4.3.2 for the Highway Charge-Depleting Range Test as allowed for the Urban All-Electric Range Test that is part of the Urban Charge-Depleting Emission Test for consistency.

It is necessary to clarify that emissions are not required to be sampled during each test cycle where emissions are not generated (i.e., the engine does not start or run during the cycle).

Subsection G.6.1.4

Introductory Paragraph: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Subsection G.6.1.4.1

It is necessary to make a correction that driver-selectable modes should not be activated for the UDDS preconditioning drive as opposed to being activated. In addition, the vehicle should be in default or normal mode during preconditioning drive.

Subsection G.6.1.4.2

It is necessary to add the phrase “End-of-Test Criteria” to clarify that the subsequent sentence defines the end-of-test criteria for the Highway Emission Test.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

It is necessary to delete and relocate the language that provides an alternative end-of-test option to section G.6.1.5.2 to improve clarity.

It is necessary to delete and relocate the language regarding confirmatory testing and in-use compliance testing to subsection G.5, introductory paragraph 8.

Subsection G.6.1.5

It is necessary to clarify that Executive Officer approval is required to use the Additional End-of-Test Criterion.

It is necessary to clarify that the Highway Emission Test may be considered valid if one of the Additional End-of-Test Criteria is satisfied.

It is necessary to clarify the language for the additional end-of-test criteria by deleting the CFR reference and stating the end-of-test criteria directly.

Subsection G.6.1.5.1

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.5.3.18.1 that references Appendix C of SAE J1711 as one of the alternative End-of-Test criterion.

Subsection G.6.1.5.2

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.6.1.5.2 that provides a second alternative End-of-Test criterion.

Subsection G.6.1.5.3: It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.6.1.5.4: It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.7

Introductory Paragraph 4

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

Introductory Paragraph 5

It is necessary to add “one or” and delete “than one” as well as change the singular “mode” to “modes” so a vehicle with only one driver-selectable mode is included in the requirement to determine worst case testing.

It is necessary to delete “of the engine” to clarify that the worst case emissions are not with regard to engine-out emissions but with regard to the emissions from the vehicle or what is emitted from the tailpipe of the vehicle.

It is necessary to move “NMOG + NOx” prior to “emissions” to be consistent with other such occurrences of “NMOG + NOx emissions” in the language.

Subsection G.7.1

Introductory Paragraph: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Subsection G.7.1.12

It is necessary to add the phrase “End-of-Test Criteria” to clarify that the subsequent sentence defines the end-of-test criteria for the US06 Emission Test.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

It is necessary to delete and relocate the language that provides an alternative end-of-test option to section G.7.1.14.2 to improve clarity.

It is necessary to delete and relocate the language regarding confirmatory testing and in-use compliance testing to subsection G.5, introductory paragraph 8.

Subsection G.7.1.14

It is necessary to clarify that Executive Officer approval is required to use the Additional End-of-Test Criterion.

It is necessary to clarify that the US06 Emission Test may be considered valid if one of the Additional End-of-Test Criteria is satisfied.

It is necessary to clarify the language for the additional end-of-test criteria by deleting the CFR reference and stating the end-of-test criteria directly.

Subsection G.7.1.14.1

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.7.1.14.1 that references Appendix C of SAE J1711 as one of the alternative End-of-Test criterion.

Subsection G.7.1.14.2

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.7.1.14.2 that provides a second alternative End-of-Test criterion.

Subsection G.7.1.14.3:

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.7.1.14.4:

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.7.2

Introductory Paragraph: It is not necessary to identify the date of the CFR reference since the introductory paragraph in Section G clarifies the effective dates of the CFR references.

Subsection G.7.2.5

It is necessary to add the phrase “End-of-Test Criteria” to clarify that the subsequent sentence defines the end-of-test criteria for the SC03 Emission Test.

It is necessary to clarify how to properly apply the SOC Net Energy Change Tolerances to validate a test.

It is necessary to delete and relocate the language that provides an alternative end-of-test option to section G.7.2.7.2 to improve clarity.

It is necessary to delete and relocate the language regarding confirmatory testing and in-use compliance testing to subsection G.5, introductory paragraph 8.

Subsection G.7.2.7

It is necessary to clarify that Executive Officer approval is required to use the Additional End-of-Test Criterion.

It is necessary to clarify that the SC03 Emission Test may be considered valid if one of the Additional End-of-Test Criteria is satisfied.

It is necessary to clarify the language for the additional end-of-test criteria by deleting the CFR reference and stating the end-of-test criteria directly.

Subsection G.7.2.7.1

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.7.2.7.1 that references Appendix C of SAE J1711 as one of the alternative End-of-Test criterion.

Subsection G.7.2.7.2

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

It is necessary to replace this subsection with a new subsection G.7.2.7.2 that provides a second alternative End-of-Test criterion.

Subsection G.7.2.7.3:

It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.7.2.7.4: It is necessary to delete this subsection because the CFR subparagraph being amended by this subsection was deleted.

Subsection G.8

Introductory Paragraphs 1 and 2

It is necessary to add hyphens to the terms “light-duty” and “medium-duty” because these terms are hyphenated in the name of the document referenced.

Subsection G.10

It is necessary to add “for Off-Vehicle Charge Capable Hybrid Electric Vehicles” to the title of this section to clarify that this section is for these type of vehicles.

Subsection G.10.1:

It is necessary to delete the allowance for an alternate SOC net energy change tolerance to meet an end-of-test condition due to the addition of several new options to meet a variety of end-of-test conditions.

Subsection G.10.2:

It is necessary to clarify that the stored capacitor voltage has a maximum and a minimum tolerance.

Subsection G.12:

It is necessary to correct the spelling of the word “greenhouse.”

Section I

It is necessary to clarify that the figures in section I are for illustrative purposes only.

It is necessary to clarify that if any differences between the language in the proceeding sections and the figures exist, the language would take precedence.

It is necessary to define the acronym "NEC," because it is used in the illustrative figures and is not defined elsewhere in these test procedures.

It is necessary to clarify the various exhaust tests by adding several illustrative figures.