ATTACHMENT A

PROPOSED SECOND 15-DAY MODIFIED REGULATION ORDER

This attachment shows the modifications to the originally proposed regulatory language. The originally proposed regulatory language that was made available by the 45-day notice on September 25, 2018 is shown in single underline to indicate additions and ~~single strikeout~~ to indicate deletions. The proposed modifications to the regulatory language that were made available by the first 15-day notice on June 4, 2019 are shown in double underline to indicate additions and ~~double strikeout~~ to indicate deletions. The additional proposed modifications made available by the second 15-day notice on July 19, 2019, are shown in ***bold italic double underline*** to indicate additions and ~~***bold italic double strikeout***~~ to indicate deletions. Various portions of the regulations that are not modified by the proposed amendments are omitted from the text shown and indicated by " * * * * * ".

Amend section 1971.1, title 13**,** California Code of Regulations, to read as follows:

§1971.1. On-Board Diagnostic System Requirements--2010 and Subsequent Model-Year Heavy-Duty Engines

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(c) *Definitions*.

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"Auxiliary Emission Control Device (AECD)" refers to any approved AECD (as defined by 40 Code of Federal Regulations (CFR) 86.082-2 and 86.094-2 as ~~***it***~~ ***they*** existed on January 25, 2018 ***and incorporated by reference herein***).

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"Engine family" means a grouping of vehicles or engines in a manufacturer's product line determined in accordance with 40 CFR ~~86.098-24~~86.096-24 as it existed on January 25, 2018 ***and incorporated by reference herein***.

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"Federal Test Procedure (FTP) test" refers to an exhaust emission test conducted according to the test procedures incorporated by reference in title 13, CCR section 1956.8(b) and (d) that is used to determine compliance with the FTP standard to which an engine is certified.

"FTP cycle". For engines certified on an engine dynamometer, FTP cycle refers to the engine dynamometer schedule in 40 CFR appendix 1 of part 86, section (f)(1), entitled, "EPA Engine Dynamometer Schedule for Heavy-Duty Otto-Cycle Engines," or section (f)(2), entitled, "EPA Engine Dynamometer Schedule for Heavy-Duty Diesel Engines~~.~~," as those sections existed on January 25, 2018 ***and incorporated by reference herein***.

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"Not-To-Exceed (NTE) control area" refers to the bounded region of the engine's torque and speed map, as defined in 40 CFR 86.1370~~-2007~~ as it existed on January

25, 2018 ***and incorporated by reference herein***, where emissions must not exceed a specific emission cap for a given pollutant under the NTE requirement.

"Manufacturer-specific NOx NTE carve-out area" refers to regions within the NTE control area for NOx where the manufacturer has limited NTE testing as allowed by 40 CFR 86.1370-~~2007~~(b)(7) as it existed on January 25, 2018 ***and incorporated by reference herein***.

"Manufacturer-specific PM NTE carve-out area" refers to regions within the NTE control area for PM where the manufacturer has limited NTE testing as allowed by 40 CFR 86.1370-~~2007~~(b)(7) as it existed on January 25, 2018 ***and incorporated by reference herein***.

"NTE deficiency" refers to regions or conditions within the NTE control area for NOx or PM where the manufacturer has received a deficiency as allowed by 40 CFR 86.007-11(a)(4)(iv) as it existed on January 25, 2018 ***and incorporated by reference herein***.

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"Supplemental Emission Test (SET) cycle" refers to the driving schedule defined as the "supplemental ~~steady state~~ emission test" in 40 CFR 86.1360-~~2007~~ as it existed on January 25, 2018 ***and incorporated by reference herein***.

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(j) Certification Documentation.

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(2) The following information shall be submitted as part of the certification application. Except as provided below for demonstration data, the Executive Officer will not issue an Executive Order certifying the covered engines without the information having been provided. The information must include:

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(2.6) For diesel engines subject to the monitoring requirements of section (e)(2.2.2), data supporting the misfire monitor, including:

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(2.6.2) Data identifying all disablement of misfire monitoring that occurs during the EPA Urban Dynamometer Driving Schedule for Heavy-Duty Vehicles specified in 40 CFR Part 86, Appendix I (d) as it existed on July 1, 2012 ***and incorporated by reference herein***. For every disablement that occurs during the cycle, the data shall identify: when the disablement occurred relative to the driver's trace, the number of engine revolutions that each disablement was present for, and which disable condition documented in the certification application caused the disablement. The number of 1000-revolution intervals completed and the number of 1000-revoluation intervals in which the misfire threshold was exceeded shall also be identified. The data shall be submitted in the standardized format detailed in Attachment A: Misfire Disablement and Detection Chart of ARB Mail-Out #MSC 09-22. For manufacturers certifying an OBD certification documentation group in accordance with section (j)(1.1), the manufacturer shall provide these data in section (j)(2.6.2) for the representative engine(s).

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(2.26) For 2022 and subsequent model year diesel engines, data showing the instantaneous NOx mass emission rate determined using the test facility's instrumentation and the instantaneous NOx mass emission rate determined by the electronic control unit that is responsible for NOx tracking (as required in section (h)(5.3)) during ~~one hot-start~~ an FTP emissions test as described below. The manufacturer shall use an engine with no malfunctions on the system (engine, engine emission controls, aftertreatment). Data from the electronic control unit must include both engine-out and system-out (i.e., tailpipe) NOx mass emission rates and engine output energy. Data from the test facility must include the engine speed, torque, net brake work, and system-out NOx mass emission rate. The test facility's NOx mass emission rate data must not include a humidity correction. The ~~hot-start~~ FTP test must be immediately preceded by a~~n~~ hot or cold-start FTP cycle (i.e., a preparatory FTP cycle) without cycling the ignition in between the two cycles to warm up the engine and ensure that all sensors are reporting NOx data throughout the entire FTP test. All data must be provided over ~~this~~ the preparatory FTP cycle and ~~hot-start~~ the FTP test~~,~~ at a frequency of at least 1 Hertz in a CSV file~~, and summed to show the total NOx mass and total engine output energy over the cycle~~. The FTP test data (not the preparatory FTP cycle data) must be summed to show the total values determined by the electronic control unit (engine-out NOx mass, system-out NOx mass, and engine output energy) and the total values determined by the test facility (system-out NOx mass and net brake work). The electronic control unit system-out NOx mass and test facility system-out NOx mass emission rate data must be plotted together in a graph versus time over the preparatory FTP cycle and the FTP test. A manufacturer may alternatively provide these data with vehicle-based testing using the EPA Urban Dynamometer Driving Schedule (UDDS) for Heavy-Duty Vehicles specified in 40 CFR Part 86, Appendix I ***(d)*** as it existed on July 1, 2012 ***and incorporated by reference herein***. For this option, the requirements and procedures described above for the engine-dynamometer testing option apply (e.g., the UDDS cycle must be preceded by another UDDS cycle without cycling the ignition in between) with the exception that engine speed, torque, and net brake work data from the test facility may be omitted (the net brake work shall be calculated using OBD system parameters).

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