

performed in accordance with paragraph (a)(7) of this section.

(4) The vehicle shall be placed, either by being driven or pushed, on a dynamometer and operated through one UDDS cycle.

(5) For those unusual circumstances where additional preconditioning is desired by the manufacturer, such preconditioning may be allowed with the advance approval of the Administrator.

(6) The Administrator may also choose to conduct additional preconditioning. The additional preconditioning shall consist of one or more driving cycles of the UDDS, as described in paragraph (a)(4) of this section.

(7) The manufacturer may, for certification testing, precondition vehicles at temperatures above 20 °F (-7 °C) and with temperature tolerances greater than those specified in §86.230(a) if the manufacturer has determined that such preconditioning does not decrease CO emissions during the testing specified in §86.237.

(b) Within five minutes of completion of preconditioning, the vehicle shall be shut off. During this five minute period, the vehicle shall not experience ambient temperatures less than 10 °F (-12 °C) nor more than 30 °F (-1 °C).

(c) One of the following two methods shall be utilized to stabilize the vehicle before the emissions test:

(1) *Storing at cold temperatures.* The vehicle shall be stored for not less than 12 hours nor for more than 36 hours prior to the cold start exhaust test. The ambient temperature (dry bulb) during this period shall be maintained at an average temperature of 20 °F±5 °F (-7 °C±2.8 °C) during each hour of this period and shall not be less than 10 °F (-12 °C) nor more than 30 °F (-1 °C). The ambient temperature reported shall be a simple average of the test cell temperature measured at constant intervals no more than one minute apart. In addition, the temperature may not exceed 25 °F (-4 °C) or fall below 15 °F (-9 °C) for more than three consecutive minutes.

(2) *Force-cooling or warming.* (i) The vehicle shall be stored for no more than 36 hours prior to cooling or warming for the cold start exhaust test. The vehicle shall not be stored at ambient

temperatures which exceed 86 °F (30 °C) during this period.

(ii) Vehicle cooling may be accomplished by either force-cooling or force-warming the vehicle to the test temperature. If cooling is augmented by fans, the fans shall be placed in a vertical position for maximum drive train and engine cooling, not primarily oil pan cooling. Fans shall not be placed under the vehicle.

(iii) The ambient temperature need only be stringently controlled after the vehicle has been cooled to 20 °F±3 °F (-7 °C±1.7 °C), as determined by a representative bulk oil temperature. A representative bulk oil temperature is the temperature of the oil measured near the middle of the oil, not at the surface or at the bottom of the oil pan. If two or more diverse locations in the oil are monitored, they must all meet the temperature requirements.

(iv) The vehicle must be stored for at least one hour after it has been cooled to 20 °F±3 °F (-7 °C±1.7 °C) prior to the cold start exhaust test. The ambient temperature (dry bulb) during this period shall average 20 °F±5 °F (-7 °C±2.8 °C) and shall not be less than 10 °F (-12 °C) nor more than 30 °F (-1 °C). In addition, the temperature may not exceed 25 °F (-4 °C) or fall below 15 °F (-9 °C) for more than three consecutive minutes.

(d) If the vehicle is stabilized at 20 °F (-7 °C) in a separate area and is moved through a warm area to the test cell, the vehicle must be restabilized in the test cell for at least six times the period the vehicle is exposed to warmer temperatures. The ambient temperature (dry bulb) during this period shall average 20 °F±5 °F (-7 °C±2.8 °C) and shall not be less than 10 °F (-12 °C) nor more than 30 °F (-1 °C). In addition, the temperature may not exceed 25 °F (-4 °C) or fall below 15 °F (-9 °C) for more than three consecutive minutes. The maximum time for moving a vehicle through a warm area shall be 10 minutes.

§§ 86.233-94—86.234-94 [Reserved]

§ 86.235-94 **Dynamometer procedure.**

(a) *Overview.* The emission sampling is completed over two test sequences, a "cold" start test after a minimum 12-