

**Note:** Due to limited time, we were unable to review all subparts, hence these comments focus on key areas.

**Part I – D:** (Repeat comment) No NMOG equation for fuels between E0 & E10, recommend following 1066.635 equation

**Subpart H:** E0 fuel reference in 2 places, don't reference 1065.710(c), instead part 86.113...

**F.10:** For HEV (F), 20°F testing, the worst case language needs to mimic the 50°F testing language like "...as determined...". Also (repeat comment) 20°F testing, the worst case being different (CO), may require 2 - 75°F worst case tests (burden). Suggest making WC criteria NMOG + NOx for 20°F as well or GEJ

**G.6:** HWY EAER Test needs a J1711 3.9 allowance for expanded EOT tolerance, like CD UDDS test.

**G.5.4.5:** (Repeat comment) AER/EAER 0.98 ratio too tight. Make 0.95 like originally proposed

**G.5.2.8:** Typos, G.5.4.2 (ii) and G.5.4.2 (iv) should be G.5.4.5 (ii) & G.5.4.5 (iv)

**G.5.5.1:** CD test mass calculations, what is included in CD hot start cycles (up until CS?). "n" was removed, not sure where the guidance is? May be ok, just covered elsewhere?

**G.8:** 20°F testing, the worst case language needs to mimic the 50°F testing language like "...as determined...". Also for 20°F testing, the worst case being different (CO), may require 2 - 75°F worst case tests (burden). Suggest making WC criteria NMOG + NOx for 20°F as well or GEJ

**General Comments:**

- Guidance on CD testing regarding no sampling during AER modes? 1066.501(c) deleted. May be covered elsewhere like in the 45 day notice?
- (Repeat comment) should be no setting of SOC after UDDS prep and using J1711 appendix C. Likewise for multiple prep cycles. May be ok, language appears to limit this setting of SOC and multiple cycles only for meeting F.9 & G.10.
- CI testing. In reviewing the detailed test procedures, it appears that some vehicle architectures may not achieve the intended CI operation. Some suggested test procedure changes attached (draft).

**G.5.4.5:** The word "or" should be replaced by "and" in the sentence ".....may demonstrate compliance with applicable exhaust emission standards using this section G.5.4.5 in lieu of sections G.5.3 ~~or~~ and G.5.4.2."

**G.5.4.5:** Is it really necessary to add the complication and restriction of "Rounding the calculated AER/EAER ratio up to 0.98 is prohibited"? Industry already feels that the 0.98 ratio may be too restrictive, and now it is more restrictive with the elimination of rounding.

**G.5.4.5 (iv):** Language is somewhat conflicting with language in the 4th paragraph of section G.5. Section G.5. language states "For example, a charge-increasing driver-selectable mode is not compatible

with a charge-depleting test”. The title of the alternative test in section G.5.4.5 (iv) indicates it’s a “Charge-Depleting” test, but the procedure invokes charge-increasing modes/operation. We understand the intent and the procedure in G.5.4.5 (iv) is viable, it’s just that the language conflicts (charge-increasing operation on a charge-depleting test).

**General Suggestions:**

- ARB should include graphics to help explain the modes of operation (CS, CI, CD).
- Products today could have two CS operating conditions. One “normal” CS, and another CS operation that occurs at the end of a CI operation. Throughout the PHEV procedures there is only a reference to CS (so “which one?”).