ON-BOARD DIAGNOSTIC SYSTEM VEHICLE TAMPERING PREVENTION



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OBD INSPECTION REGULATION

- CCR 3340.42.2(c): Starting on or after January 1, 2013,
 OBD equipped vehicles shall fail the OBD inspection if any one of the following conditions occurs as applicable to the vehicle:
 - (1) The vehicle's MIL does not illuminate when the ignition is on and the engine is off (implemented prior to 2009)
 - (2) The vehicle's MIL illuminates continuously or flashes with the engine running (implemented prior to 2009)
 - (3) The vehicle's OBD system reports the MIL as commanded on (implemented prior to 2009)
 - (4) The vehicle's OBD system reports a Diagnostic Trouble Code (implemented prior to 2009)

OBD INSPECTION REGULATION (CONTINUED)

- (5) The vehicle's OBD system data indicates the system has not yet been sufficiently operated to determine the presence or absence of a DTC (implemented July 1, 2019)
- (6) The vehicle's OBD system does not communicate with the EIS or OIS (implemented CY 2000)
- (7) The vehicle's OBD system data is inappropriate for the vehicle being tested (implemented February 2017)
- (8) The vehicle's OBD system data does not match the OEM or a CARB exempted OBD software configuration (proposed July 2020)

OBD INSPECTION REGULATION (CONTINUED 2)

- (9) The vehicle's OBD system reports an incomplete readiness monitor(s) as specified below:
- (A) Gasoline-powered vehicles model-years 1996 through 1999 with more than one (1) incomplete monitor
- (B) Gasoline-powered vehicles model-years 2000 and newer with any incomplete monitors, excluding the evaporative system monitor
- (C) Diesel-powered vehicles model-years 1998 through 2006 with any incomplete monitors
- (D) Diesel-powered vehicles model-years 2007 and newer with any incomplete monitors, excluding the particulate filter system monitor

(implemented June 2015)

CVN AND CAL-ID

Calibration Verification Number (CVN): a number set by OEMs to verify the integrity of the vehicle software

Calibration Identification (Cal-ID): an ID for the software installed on the Electronic Control Unit (ECU)

- CVN and Cal-ID are currently used by Smog Check Referees to ensure correct vehicle computer programming in situations where modifications likely:
 - Engine changes
 - Law enforcement citations for modified vehicles
 - Referee directed vehicles with mismatched OBD data profiles

MANY MODIFIED VEHICLES NOT IDENTIFIED DURING SMOG CHECK

- While Referee inspections identify computer programming modifications, many other similarly modified vehicles are not identified
- Implementation of automated CVN/Cal-ID checks at Smog Check stations will identify and curb the use of illegal programming on vehicle computers

CONSIDERATIONS FOR IMPLEMENTATION OF CVN/CAL-ID

- Require the CVN and/or Cal-ID as priority data during inspections, where applicable
 - Inspections cannot be completed without retrieving data from vehicles capable of providing this information
- Direct egregiously modified vehicles to the Referee for verification
- Focus in initial phase of implementation on vehicles likely to be modified and vehicles where the allowed CVN and Cal-ID are clear and obvious
- Use Referee for contested inspections

PROPOSED IMPLEMENTATION PLAN

- Target implementation date: July 2020
- Develop on-line training module for inspectors
- Update BAR's OBD Reference document
- Industry outreach will include:
 - Industry Presentations
 - Electronic Transmission (ET) Blasts
 - Newsletter Article
 - Q&A on website
- Vehicle Inspection Report will indicate the cause of failure as the CVN and Cal-ID does not match a valid configuration

Future Work – Accommodate Legally Modified CVN/Cal-ID

- CARB Executive Order (EO) process legalizes some aftermarket modifications to CVN/Cal-ID
- Related information can be gleaned from:
 - Inspection record data
 - ➤EO numbers from inspection
 - ➤ Statistical analysis of outlier data crossed with other methods
 - Aftermarket equipment manufacturer-provided data
 - CARB EO application data

QUESTIONS AND COMMENTS

Submit questions and/or comments to:

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