fail analysis begins after an elapsed time of ten seconds (mt=10). A pass or fail determination is made for the vehicle and the mode is terminated in accordance with paragraphs (d)(2)(iv)(A) and (B) of this section.

(A) The vehicle passes the high-speed mode and the mode is terminated at the end of an elapsed time of 180 seconds (mt=180) if any measured values are less than or equal to the applicable short test standards as determined by the procedure described in paragraph (a)(2) of this section.

(B) The vehicle fails the high-speed mode and the mode is terminated if paragraph (d)(2)(iv)(A) of this section is not satisfied by an elapsed time of 180 seconds (mt=180).

(3) *Second-chance preconditioning mode.* The mode timer starts (mt=0) when engine speed is between 2200 and 2800 rpm. The mode continues for an elapsed time of 180 seconds (mt=180). If the engine speed falls below 2200 rpm or exceeds 2800 rpm for more than five seconds in any one excursion, or 15 seconds over all excursions, the mode timer resets to zero and resumes timing.

(4) *Second-chance idle mode*—(i) *Ford Motor Company and Honda vehicles.* The engines of 1981–1987 model year Ford Motor Company vehicles and 1984–1985 model year Honda Preludes must be shut off for not more than ten seconds and then restarted. The probe may be removed from the tailpipe or the sample pump turned off if necessary to reduce analyzer fouling during the restart procedure. This procedure may also be used for 1988–1989 model year Ford Motor Company vehicles but may not be used for other vehicles.

(ii) The mode timer starts (mt=0) when the vehicle engine speed is between 350 and 1100 rpm. If the engine speed exceeds 1100 rpm or falls below 350 rpm the mode timer resets to zero and resumes timing. The minimum second-chance idle mode length is determined as described in paragraph (d)(4)(iii) of this section. The maximum second-chance idle mode length is 90 seconds elapsed time (mt=90).

(iii) The pass/fail analysis begins after an elapsed time of ten seconds (mt=10). A pass or fail determination is made for the vehicle and the mode is terminated in accordance with paragraphs (d)(4)(iii) (A) through (D) of this section.

(A) The vehicle passes the second-chance idle mode and the test is immediately terminated if, prior to an elapsed time of 30 seconds (mt=30), measured values are less than or equal to 100 ppm HC and 0.5 percent CO.

(B) The vehicle passes the second-chance idle mode and the test is terminated at the end of an elapsed time of 30 seconds (mt=30) if, prior to that time, the criteria of paragraph (d)(4)(iii)(A) of this section are not satisfied, and the measured values are less than or equal to the applicable short test standards as determined by the procedure described in paragraph (a)(2) of this section.

(C) The vehicle passes the second-chance idle mode and the test is immediately terminated if, at any point between an elapsed time of 30 seconds (mt=30) and 90 seconds (mt=90), measured values are less than or equal to the applicable short test standards described in paragraph (a)(2) of this section.

(D) The vehicle fails the second-chance idle mode and the test is terminated if none of the provisions of paragraphs (d)(4)(iii) (A), (B), and (C) of this section is satisfied by an elapsed time of 90 seconds (mt=90).

[58 FR 58411, Nov. 1, 1993, as amended at 61 FR 40947, Aug. 6, 1996]

§ 85.2221 [Reserved]

§ 85.2222 On-board diagnostic test procedures.

The test sequence for the inspection of on-board diagnostic systems on 1996 and newer light-duty vehicles and light-duty trucks shall consist of the following steps:

(a) The on-board diagnostic inspection shall be conducted with key-on/engine-running (KOER).

(b) The inspector shall locate the vehicle connector and plug the test system into the connector.

(c) The test system shall send a Mode $01, PID $01 request in accordance with SAE J1979 to determine the evaluation status of the vehicle's on-board diagnostic system. The test system shall determine what monitors are supported

by the on-board diagnostic system, and the readiness evaluation for applicable monitors in accordance with SAE J1979. The procedure shall be done in accordance with SAE J1979 "E/E Diagnostic Test Modes," (DEC91). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of SAE J1979 may be obtained from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096–0001. Copies may be inspected at the EPA Docket No. A–94–21 at EPA's Air Docket (LE–131), Room 1500 M, 1st Floor, Waterside Mall, 401 M Street SW, Washington, DC, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. Beginning January 1, 2001, if the readiness evaluation indicates that any on-board tests are not complete the customer shall be instructed to return after the vehicle has been run under conditions that allow completion of all applicable on-board tests. If the readiness evaluation again indicates that any on-board test is not complete the vehicle shall be failed.

(d) The test system shall evaluate the malfunction indicator light status bit and record status information in the vehicle test record.

(1) If the malfunction indicator status bit indicates that the malfunction indicator light has been commanded to be illuminated the test system shall send a Mode $03 request to determine the stored emission related power train trouble codes. The system shall repeat this cycle until the number of codes reported equals the number expected based on the Mode 1 response. If any of the codes listed in §85.2207(d) are present they shall be recorded in the vehicle test record and the vehicle shall fail the on-board diagnostic inspection.

(2) If the malfunction indicator light bit is not commanded to be illuminated the vehicle shall pass the on-board diagnostic inspection, even if codes listed at §85.2207(d) are present.

(3) If the malfunction indicator light bit is commanded to be illuminated, the inspector shall visually inspect the malfunction indicator light to determine if it is illuminated. If the malfunction indicator light is commanded to be illuminated but is not, the vehicle shall fail the on-board diagnostic inspection.

[61 FR 40947, Aug. 6, 1996, as amended at 63 FR 24433, May 4, 1998]

§ 85.2223 On-board diagnostic test report.

(a) Motorists whose vehicles fail the on-board diagnostic test described in §85.2222 shall be provided with the on-board diagnostic test results, including the codes retrieved (as listed in paragraph (b) of this section), the status of the MIL illumination command, and the customer alert statement (as stated in paragraph (c) of this section).

(b) If any of the following codes are retrieved the corresponding component shall be listed on the test report in the following way:

Code	Component
PX1XX	Fuel and Air Metering.
PX2XX	Fuel and Air Metering.
PX3XX	Ignition System or Misfire.
PX4XX	Auxiliary Emission Controls.
P0500	Vehicle Speed Sensor.
P0501	Vehicle Speed Sensor.
P0502	Vehicle Speed Sensor.
P0503	Vehicle Speed Sensor.
P0505	Idle Control System.
P0506	Idle Control System.
P0507	Idle Control System.
P0510	Closed Throttle Position Switch.
P0550	Power Steering Pressure Sensor Circuit.
P0551	Power Steering Pressure Sensor Circuit.
P0552	Power Steering Pressure Sensor Circuit.
P0553	Power Steering Pressure Sensor Circuit.
P0554	Power Steering Pressure Sensor Circuit.
P0560	System Voltage.
P0561	System Voltage.
P0562	System Voltage.
P0563	System Voltage.
PX6XX	Computer and Output Circuits.
P0703	Brake Switch.
P0705	Transmission Range Sensor Circuit.
P0706	Transmission Range Sensor Circuit.
P0707	Transmission Range Sensor Circuit.
P0708	Transmission Range Sensor Circuit.
P0709	Transmission Range Sensor Circuit.
P0719	Torque Converter/Brake Switch.
P0720	Output Speed Sensor.
P0721	Output Speed Sensor.
P0722	Output Speed Sensor.
P0723	Output Speed Sensor.
P0724	Torque Converter/Brake Switch.
P0725	Engine Speed Input Circuit.
P0726	Engine Speed Input Circuit.
P0727	Engine Speed Input Circuit.
P0728	Engine Speed Input Circuit.
P0740	Torque Converter Clutch System.
P0741	Torque Converter System.
P0742	Torque Converter Clutch System.
P0743	Torque Converter Clutch System.
P0744	Torque Converter Clutch System.