

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE B: AIR POLLUTION

CHAPTER II: ENVIRONMENTAL PROTECTION AGENCY

PART 276

PROCEDURES TO BE FOLLOWED IN THE PERFORMANCE OF INSPECTIONS OF
MOTOR VEHICLE EMISSIONS

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AUTHORITY: Implementing and authorized by the Vehicle Emissions Inspection Law of 1995 [625 ILCS 5/Ch. 13B].

SOURCE: Adopted at 10 Ill. Reg. 13954, effective August 13, 1986; amended at 16 Ill. Reg. 10230, effective June 15, 1992; amended at 20 Ill. Reg. 8456, effective June 14, 1996; amended at 22 Ill. Reg. 18867, effective September 28, 1998.

NOTE: In this Part, unless the context clearly indicates otherwise, superscript numbers or letters are denoted by parentheses; subscript are denoted by brackets; "INT" means the integral symbol as used in mathematics, and "SUM" means the summation series or sigma function as used in mathematics.

SUBPART A: GENERAL PROVISIONS

Section 276.101	Purpose and Applicability
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- a) Purpose

This Part establishes specific procedures to be followed in the performance of inspections of motor vehicle emissions.

b) Applicability

The provisions of this Part necessary for the implementation of the Enhanced I/M testing program mandated by the Vehicle Emissions Inspection Law of 1995 shall be implemented upon initiation of the Enhanced I/M testing program, scheduled to begin December 1, 1998.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.102 Definitions

a) Except as hereinafter stated and unless a different meaning of a term is clear from its context, the definitions of terms used in this Part shall be the same as those used in the Environmental Protection Act [415 ILCS 5] and the Vehicle Emissions Inspection Law of 1995 [625 ILCS 5/Ch. 13B].

b) The following definitions apply to this Part:

"Accuracy" means the combination of bias and precision errors, technically defined as uncertainty, that quantifies the differences between a measured and true value.

"Adjusted loaded vehicle weight (ALVW)" means the vehicle curb weight plus the gross vehicle weight rating divided by two.

"Affected county" means any county or portion thereof, as defined in Section 13B-5 of the Vehicle Emissions Inspection Law of 1995.

"Assigned test month" means the month and year allocated by the Agency for testing a vehicle. The first day of the Assigned Test Month shall be 4 months prior to the sticker or certificate Expiration Date.

"Calibration gas" means a gas of known concentration used to establish the response curve of the exhaust gas analyzer.

"Corrected or interim emissions inspection sticker or certificate" means a sticker or certificate issued in accordance with Section 276.308 of this Part that contains a reassigned vehicle test month issued to the owner(s) of a vehicle subject to emissions inspection who has petitioned the Agency for a change in Assigned Test Month, and whose vehicle has previously been issued an Initial Emissions Inspection Sticker or Certificate with an Assigned Test Month.

"Drift" means the amount of change in analyzer reading over a period of time. Zero drift refers to the change of zero reading. Span drift refers to a change in the reading at a specified span gas calibration point.

“Economic hardship extension” means a time extension of one year that may be granted to the owner(s) of a vehicle in order for the owner(s) to comply with the requirements of the Vehicle Emissions Inspection Law of 1995.

"Emission control devices" means those components of a vehicle which were designed and are used to control vehicle exhaust and evaporative system emissions. For the purpose of this Part, this term refers to components with which the vehicle was originally equipped or direct replacements.

“Equivalent test weight” means the loaded vehicle weight for light duty vehicles and light duty trucks 1, and the adjusted loaded vehicle weight for light duty trucks 2 and heavy duty trucks.

"Evaporative system integrity test" means a test of the fuel cap portion of a vehicle's evaporative system, which consists of either a fuel cap leak flow test, a fuel cap pressure decay test, or a fuel cap visual functional test, as applicable.

"Exempt emissions inspection sticker or certificate" means a sticker or certificate issued in accordance with Section 276.305 of this Part to the owner(s) of a vehicle registered in an Affected County which is exempt from emissions inspection pursuant to Section 13B-15(f) or 13B-15(g) of the Vehicle Emissions Inspection Law of 1995, and the requirements of this Part.

"Exhaust gas analyzer" means a device that has the capability to identify unknown concentrations of particular constituents in motor vehicle exhaust gases by comparison with known concentrations of analytical gases.

"Expiration date" means the deadline for having a vehicle inspected and obtaining the appropriate sticker or certificate.

“Fleet inspection station” means a “Private Official Inspection Station”.

"Fleet inspection permit" means a permit issued to fleet self-testers in accordance with Subpart G.

"Fleet inventory" means those vehicles which have been registered with

the Agency for the purpose of fleet self-testing and which have been assigned a test month.

"Fleet vehicle" means any non-exempt vehicle registered with the Agency for the purpose of fleet self-testing.

"Fuel cap" means a device used to seal a vehicle's fuel inlet.

"Fuel cap leak flow test" means a test performed in accordance with this Part on a vehicle's fuel cap using a fuel cap leak flow tester to determine whether the vehicle complies with the evaporative system emission standards of 35 Ill. Adm. Code 240.

"Fuel cap leak flow tester (fuel cap tester)" means a device used to determine the leak flow integrity of a vehicle's fuel cap by comparing the measured leak flow of the fuel cap with an established fuel cap leak flow standard.

"Fuel cap pressure decay test" means the test performed in accordance with this Part on a vehicle's fuel cap using a fuel cap pressure decay tester to determine whether the vehicle complies with the evaporative system emission standards of 35 Ill. Adm. Code 240.

"Fuel cap pressure decay tester" means a device used to determine the pressure decay integrity of a vehicle's fuel cap by monitoring the pressure behind the fuel cap for a 10 second period and comparing the measured pressure decay of the fuel cap to an established fuel cap pressure decay standard.

"Fuel cap visual functional test" means the test performed in accordance with this Part on a vehicle's fuel cap using visual analysis to determine whether the vehicle complies with the evaporative system emission standards of 35 Ill. Adm. Code 240.

"Gross vehicle weight rating (GVWR)" means the value specified by the manufacturer as the maximum design loaded weight of a single vehicle.

"HC hangup" means hydrocarbons which cling to the surface of the analyzer gas sampling stream causing errors in hydrocarbon readings.

"Heavy duty vehicle (HDV)" means a motor vehicle rated at more than 8500 pounds GVWR or that has a vehicle curb weight of more than 6000 pounds or that has a basic vehicle frontal area in excess of 45 square feet.

"High idle" means a vehicle operating condition with engine disconnected from an external load (placed in either neutral or park) and operating at a

speed of 2500 ± 300 RPM.

"Household income" means the gross income of all household members, except wage or salary income earned by dependent minors under 18 years of age. A head of household and his or her spouse are not considered as minors. Gross income includes wages, interest, annuities, pensions, social security, retirement, disability, public aid, alimony, child support, unemployment benefits, workers' compensation, and any other indirect income such as utility allowances.

"Idle mode" means that portion of a vehicle emission test procedure conducted with the engine disconnected from an external load and operating at minimum throttle.

"Initial emissions inspection sticker or certificate" means a sticker or certificate issued in accordance with Section 276.304 of this Part to the owner(s) of a vehicle that has not been tested because such vehicle was not previously subject to inspection, but has become subject to inspection in accordance with the Vehicle Emissions Inspection Law of 1995.

"Initial idle mode" means the first of up to two idle mode sampling periods during a steady-state idle mode test, during which exhaust emission measurements are made with the vehicle in "as-received" condition.

"Interference" means those exhaust gas analyzer read-out errors caused by instrument response to non-interest gases typically occurring in vehicle exhaust.

"Light duty truck 1 (LDT1)" means a motor vehicle rated at 6,000 pounds maximum GVWR or less and which has a vehicle frontal area of 45 square feet or less, and which is designed primarily for purposes of transportation of property or is a derivation of such a vehicle, or is designed primarily for transportation of persons and has a capacity of more than 12 persons, or is available with special features enabling off-street or off-highway operation and use.

"Light duty truck 2 (LDT2)" means a motor vehicle rated between 6,001 and 8,500 pounds maximum GVWR and which has a vehicle frontal area of 45 square feet or less, and which is designed primarily for purposes of transportation of property or is a derivation of such a vehicle, or is designed primarily for transportation of persons and has a capacity of more than 12 persons, or is available with special features enabling off-street or off-highway operation and use.

"Light duty vehicle (LDV)" means a passenger car or passenger car

derivative capable of seating 12 passengers or fewer.

"Loaded vehicle weight" means the vehicle curb weight plus 300 pounds.

"Low income" means the household income during the preceding 12 month period was not more than 150 percent of the latest available poverty guidelines established by the U.S. Department of Health and Human Services for the contiguous United States and the District of Columbia.

"Malfunction indicator light (MIL)" means the light found on the dashboard of OBD-equipped vehicles that is required to be illuminated when the OBD system detects malfunctions.

"National Institute of Standards and Technology (NIST) gas" means a standard gas maintained or made available by the National Institute of Standards and Technology for the purpose of determining the accuracy of calibration gases.

"Non-exempt vehicle" means any vehicle subject to emission inspections, regardless of whether the vehicle is in a certified configuration, under the Vehicle Emissions Inspection Law of 1995.

"Non-fleet vehicle" means any non-exempt vehicle except for vehicles registered with the Agency for the purpose of fleet self-testing.

"Official inspection station" means a vehicle emission inspection facility operated by the Agency or the Agency's Contractor for the purpose of conducting emission inspections on non-fleet vehicles.

"On-board diagnostic (OBD) system" means equipment designed to monitor the performance of emission control equipment, fuel metering systems, ignition systems and other equipment and operating parameters for the purpose of detecting malfunctions or deterioration in performance that would be expected to cause the vehicle to exceed federal emission standards.

"On-board diagnostic test" means the scanning of stored trouble codes in the OBD system to determine if any emission related trouble codes are present and if the MIL is commanded to be on, which would indicate the existence of an emission related malfunction with the vehicle.

"On-road remote sensing test" means the observation, measurement, and recording of vehicle exhaust emission concentrations of hydrocarbons (HC), carbon monoxide (CO), and carbon dioxide (CO₂) present in each in-use vehicle while traveling on roadways or in specified areas by

equipment that is not connected to the vehicle.

"Preconditioning mode" means a period of steady-state loaded mode or high-idle operation conducted to ensure that the engine and emissions control system components are operating at normal operating temperatures, thus minimizing false failure caused by improper or insufficient warm-up.

"Private official inspection station" means a vehicle emission inspection facility operated by a registered owner or lessee of 15 or more non-exempt fleet vehicles.

"Recognized repair technician" means a person professionally engaged in vehicle repair, employed by a going concern whose purpose is vehicle repair, or processing nationally recognized certification for emission related diagnosis and repair.

"Renewal emissions inspection sticker or certificate" means a sticker or certificate issued in accordance with Section 276.306 of this Part to an owner of a vehicle which successfully passes a vehicle emissions test in accordance with the provisions of this Part.

"Second-chance idle mode" means the second of two idle mode sampling periods during a steady-state idle mode test, preceded by a preconditioning mode and utilized as a second chance to pass idle exhaust emission standards immediately following an initial idle mode failure.

"Span gas" means a gas of known concentrations which is used to check or adjust the analyzer response characteristics to those determined by the calibration gases.

"Steady-state idle test" means a vehicle emission test procedure consisting of an initial idle mode measurement of exhaust emissions followed, if necessary, by a loaded or high idle preconditioning mode and a second-chance idle mode.

"Temporary emissions inspection sticker or certificate" means a sticker or certificate issued in accordance with Section 276.307 of this Part to an owner of a vehicle subject to inspection which currently has a valid initial or renewal emission inspection sticker or certificate, and which has met the requirements of this Part.

"Test cycle" means the two-year period between a vehicle's Assigned Test Months.

"Vehicle curb weight" means the actual vehicle weight plus standard

equipment and a full fuel tank.

"Vehicle inspection report" means a report issued to the motorist indicating the results of an emission inspection or waiver determination.

"Visual functional test" means a visual examination of a vehicle's fuel cap for any readily apparent wear, tampering, or defects which would prevent the fuel cap from operating properly.

"Waiver" means a suspension of the requirement that a non-exempt vehicle comply with exhaust emission standards after two or more attempts to do so, as provided for in this Part.

"Waiver emissions inspection sticker or certificate" means a sticker or certificate issued in accordance with Section 276.309 of this Part to the owner(s) of a vehicle which has failed a vehicle emissions test and at least one retest, but successfully complies with the applicable waiver requirements of this Part.

"Waiver inspection" means an inspection conducted by a waiver inspector to determine waiver eligibility.

"Waiver inspector" means a person authorized by the Agency to conduct waiver inspections and to approve or disapprove applications for a waiver.

"Waiver inspection report" means a form containing waiver eligibility requirements which is completed by a waiver inspector to determine whether a vehicle is eligible for a waiver.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.103 Abbreviations

Abbreviations used in this Part include the following:

ALVW	adjusted loaded vehicle weight
cc/min	cubic centimeters per minute
C0	carbon monoxide
C0 ₂	carbon dioxide
CFV	critical flow venturi
CVS	constant volume sampler
gpm	grams per mile
GVWR	gross vehicle weight rating
HC	hydrocarbons, as hexane
HDV	heavy duty vehicle
hr	hour

I/M	inspection and maintenance
kw	kilowatt
LDT1	light duty truck 1
LDT2	light duty truck 2
LDV	light duty vehicle
LVW	loaded vehicle weight
mi	mile, miles
MIL	malfunction indicator light
NDIR	non-dispersive infrared
NIST	National Institute for Standards and Technology
NO	nitrogen oxide
NO _x	oxides of nitrogen
NO ₂	nitrogen dioxide
OBD	on-board diagnostics
ppm	parts per million by volume
ppmC	parts per million, carbon
psi	pounds per square inch
RPM	revolutions per minute
SDM	source detector module
SE	standard error of estimate
SSV	subsonic venturi

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.104 Incorporations by Reference

The following materials are incorporated by reference and include no later editions or amendments:

- a) United States Environmental Protection Agency (USEPA), "IM240 and Evaporative Test Guidance: 1998 Revised Technical Guidance," Report EPA-AA-RSPD-IM-98-1 (Draft), 2565 Plymouth Road, Ann Arbor MI 48105 (March 1998).

NOTE: Sections of this Guidance are referenced as though they are sections of 40 CFR 85.

- b) United States Environmental Protection Agency (USEPA), "High-Tech I/M Test Procedures, Emission Standards, Quality Control Requirements, and Equipment Specifications: IM240 and Functional Evaporative System Tests, Revised Technical Guidance," Report EPA-AA-RSPD-IM-96-1 (Draft), 2565 Plymouth Road, Ann Arbor MI 48105 (June 1996).

NOTE: Sections of this Guidance are referenced as though they are sections of 40 CFR 85.

- c) 40 CFR 85.221, 85.2223, and 85.2231 (63 FR 24429, 24433-24434 (May 28, 1998)).
- d) 40 CFR 51.353(c) and 51.358(c) (July 1, 1997).

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

SUBPART B: VEHICLE EMISSIONS INSPECTION PROCEDURES

Section 276.201 General Description of Vehicle Emissions Inspection Procedures

Compliance with vehicle exhaust, and evaporative emissions, on-board diagnostics, and on-road sensing standards shall be determined by use of test procedures and other requirements as applicable as set forth in this Part.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.202 Pollutants to be Tested - Exhaust Test

Vehicle exhaust emission inspections shall consist of sampling vehicle tailpipe emissions of HC, CO, CO₂, and NO_x (if applicable).

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.203 Dilution – Steady-State Idle Exhaust Test

To prevent excess dilution in a steady-state idle exhaust emissions test described in Section 276.204, the sample probe shall be inserted a minimum of 10 inches into the vehicle's tailpipe. Extension boots shall be utilized if it is impossible to insert the sample probe at least 10 inches into the tailpipe. A vehicle emission test shall be invalid if the applicable emission standards contained in 35 Ill. Adm. Code 240 are met but the sum of the CO and CO₂ concentrations in the exhaust gas does not exceed 6 percent during the sample averaging period(s).

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.204 Steady-State Idle Exhaust Emissions Test Procedures

a) Steady-State Idle Test

1) Test Description

The steady-state idle test with loaded preconditioning may be substituted for the transient loaded mode exhaust gas analysis for those vehicles identified in Section 13B-25(c) and (d) of the Vehicle Emissions Inspection Law of 1995. The steady-state idle test with loaded preconditioning consists of a first-chance idle mode test followed, if

necessary, by a second-chance test. The second-chance test consists of a loaded preconditioned mode using a dynamometer, or a high idle preconditioned mode while in neutral or park, followed immediately by an idle mode.

2) Engine Re-Start

In addition to the test procedures of this Section, 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 10 seconds and restarted prior to initiating the idle mode of the second-chance test. The probe shall be removed from the tailpipe or the sample pump turned off if necessary to reduce analyzer fouling during the restart procedure.

b) General Requirements

- 1) Initial tests (i.e., those occurring for the first time in a vehicle's scheduled test cycle) shall be performed without repair or adjustment at the inspection facility prior to the test.
- 2) Tests shall be performed with Agency-approved equipment that has been calibrated according to the quality procedures contained in Section 276.602 of this Part.
- 3) Vehicles with apparent leaks of fuel, oil, coolant, or exhaust shall not be tested.
- 4) Vehicles with missing tail pipe sections which would prohibit full insertion of an analyzer probe shall not be tested.
- 5) Vehicles shall be tested with their engines and emissions control systems at normal operating temperatures and not overheating (as indicated by gauge, temperature lamp, touch test on the radiator hose, and/or boiling radiator).
- 6) Vehicles shall be tested without any accessories in operation.
- 7) Vehicles must be operated during each mode of the test with the gear selector in the position described as follows:
 - A) in drive for automatic transmissions and in second (or third if more appropriate) for manual transmissions for the loaded preconditioning mode; and
 - B) in neutral or park for the idle mode test and the high idle preconditioning mode.

- 8) For vehicles with multiple tailpipes, separate test results from each tailpipe shall be numerically averaged for each pollutant sampled unless equipment capable of simultaneously sampling multiple tailpipes is utilized.
 - 9) Vehicles subject to loaded mode preconditioning under subsection (e)(2)(B)(i) of this Section shall be rejected from testing if drive axle tires:
 - A) exhibit visible cords, belts, bubbles, cuts, or other damage, or
 - B) are space-saver spare tires, or
 - C) are not reasonably sized.
 - 10) Vehicles subject to loaded mode preconditioning under subsection (e)(2)(B)(i) of this Section shall have their drive axle tires inspected for proper inflation. If the air pressure of one or more of these tires appears low, it shall be inflated to approximately 30 psi, or to tire sidewall pressure, or manufacturer's recommendations.
- c) Procedures
- 1) The analysis of exhaust gas concentrations must begin 10 seconds after the applicable test mode begins.
 - 2) Exhaust gas concentrations must be analyzed at a minimum rate of once every 0.75 second.
 - 3) The measured value for the pass/fail determination shall be a simple running average of the measurements taken over 5 seconds.
 - 4) When used for loaded mode preconditioning, the dynamometer must be warmed up, in stabilized operating condition, adjusted, and calibrated in accordance with the procedures contained in Section 276.603 of this Part. Prior to each test, variable-curve dynamometers must be checked for proper setting of the road-load indicator or road-load controller.
 - 5) With the exception of those vehicles specified in subsections (c)(6) and (c)(7) of this Section, the tachometer must be attached to the vehicle in accordance with the analyzer manufacturer's instructions.
 - 6) Vehicles that cannot continuously meet the engine speed requirements of subsection (e)(1)(B) of this Section within 30 seconds after initiation of the first-chance test shall be rejected upon verification of the proper operation and placement of the tachometer. If it is determined that the

operation or placement of the tachometer is faulty, immediate corrective action shall be taken and the vehicle shall be retested in accordance with subsection (e) of this section.

- 7) For 1996 and newer model year LDVs, LDT1s, and LDT2s, the OBD data link connector shall be used to monitor RPM. In the event that an OBD data link connector is not available or that an RPM signal is not available over the data link connector, a tachometer shall be used instead.
- 8) If the engine or vehicle speed, as applicable, falls outside the limits specified in subsections (e)(1)(B), (e)(2)(B)(i), (e)(2)(B)(ii) or (e)(2)(C) of this Section, as applicable, for more than 5 seconds in any excursion, or 15 seconds over all excursions within a test mode, the mode timer shall be reset to zero and the mode restarted.
- 9) For vehicles whose design prevents the monitoring of the engine rpm rate with a tachometer, the engine speed requirements of subsections (e)(1)(B), (e)(2)(B), and (e)(2)(C) of this Section shall not apply. The preconditioning mode of a second-chance idle test shall consist of accelerating the vehicle's engine to an estimated rate of 2500 rpm for a period of 30 seconds prior to initiating a second-chance idle mode test.
- 10) The sample probe must be inserted into the vehicle's tailpipe to a minimum depth of 10 inches. If the vehicle's exhaust system prevents insertion to this depth, a tailpipe extension must be used.
- 11) The measure concentration of CO plus CO[2] must be greater than or equal to 6 percent or the vehicle will be rejected.
- 12) If a vehicle's engine stalls at any time during the test sequence, the test shall be aborted and restarted. If after 3 attempts the test cannot be completed, the vehicle shall be rejected.

d) Pass/Fail Determination

A pass or fail determination is made for each applicable test mode based on a comparison of the test standards contained in 35 Ill. Adm. Code 240.152 with the measured value for HC and CO as described in subsection (c) of this Section. A vehicle passes the test mode if any pair of simultaneous measured values for HC and CO are below or equal to the applicable test standards. A vehicle fails the test mode if the values for either HC or CO, or both, in all simultaneous pairs of values are above applicable standards.

e) Test Sequence

The steady-state idle test consists of a first-chance test and a second-chance test.

The first-chance test consists only of an idle mode. The second-chance test consists of a preconditioning mode followed immediately by an idle mode, and is performed only if the vehicle fails the first-chance test.

1) First-Chance Test

- A) The test starts when the conditions specified in subsections (e)(1)(B) and (e)(1)(C) of this Section are met.
- B) The mode starts when the vehicle engine speed is between 350 and 1300 rpm. The minimum mode length is determined as described under subsection (e)(1)(C) of this Section.
- C) The pass/fail analysis begins after an elapsed time of 10 seconds. A pass or fail determination is made for the vehicle and the mode is terminated in accordance with subsections (e)(1)(C)(i) through (e)(1)(C)(iv) of this Section.
 - i) The vehicle passes the idle mode and the test terminates on or before an elapsed time of 30 seconds, if the measured values are less than or equal to the applicable test standards as described in subsection (d) of this Section.
 - ii) The pass/fail analysis shall continue beyond 30 seconds as long as emission readings are declining based upon comparison of the last 5 consecutive measured values. The vehicle passes the idle mode and the test is immediately terminated if, at any point between an elapsed time of 30 seconds and 90 seconds, the measured values are less than or equal to the applicable test standards described in subsection (d) of this Section.
 - iii) The vehicle fails the first-chance test if the provisions of subsection (e)(1)(A), (e)(1)(C)(i), or (e)(1)(C)(ii) of this Section are not met.
 - iv) The vehicle shall fail the first-chance test and the second-chance test shall be omitted if no measured values less than 1800 ppm HC are found by an elapsed time of 30 seconds.

2) Second-Chance Test

- A) If the vehicle fails the first-chance test, a second-chance test is performed except as described in subsection (e)(1)(C)(iv) of this Section.

B) Preconditioning Mode

At all Official Inspection Stations, and those Private Official Inspection Stations equipped with dynamometers, all LDVs, LDT1s, and LDT2s that require a second chance test shall be preconditioned in accordance with the loaded mode procedures specified in subsection (e)(2)(B)(i) of this Section. All LDVs, LDT1s, and LDT2s, and HDVs that, because of the vehicle design or configuration, cannot be preconditioned on the dynamometer, or are tested at Private Official Inspection Stations not equipped with dynamometers, shall be preconditioned using the high idle preconditioning procedures specified in subsection (e)(2)(B)(ii) of this Section.

i) Loaded Preconditioning Mode

The mode starts when the dynamometer speed is within the limits specified for the vehicle engine size in accordance with the following schedule. The mode continues for an elapsed time of 30 seconds.

Dynamometer Test Schedule

<u>Number Of Cylinders</u>	<u>Roll Speed Mph (km/hr)</u>	<u>Brake Horepower (kW)</u>
4 or less	22-25 (35-40)	2.8-4.1 (2.1-3.1)
5 to 6	29-32 (47-52)	6.8-8.4 (5.1-6.3)
7 or more	32-35 (52-56)	8.4-10.8 (6.3-8.1)

ii) High Idle Preconditioning Mode

The mode starts when the engine speed is between 2200 and 2800 rpm, or between 1650 and 1950 rpm on specified vehicles equipped with ZF 4-speed Automatic Transmissions. The mode continues for an elapsed time of 30 seconds.

C) Idle Mode

The mode starts 5 seconds after the dynamometer speed has

reached zero if loaded preconditioning has been used, or when the vehicle engine speed is between 350 and 1300 rpm if high idle preconditioning is used. The minimum idle mode length is determined as described in subsection (e)(2)(D) of this Section.

- D) The pass/fail analysis begins after an elapsed time of 10 seconds. A pass or fail determination is made for the vehicle and the idle mode is terminated in accordance with the following:
 - i) the vehicle passes the idle test and the test terminates on or before an elapsed time of 60 seconds if the measured values are less than or equal to the applicable test standards as determined by the procedure described in subsection (d) of this Section;
 - ii) the vehicle fails the idle test and the test terminates if the provisions of subsection (e)(2)(D)(i) are not met within an elapsed time of 60 seconds.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.205 Evaporative System Integrity Test Procedures

- a) Applicability

The evaporative system integrity test shall be performed in accordance with the fuel cap leak flow test procedures or fuel cap pressure decay test procedures, and fuel cap visual functional test procedures specified in subsections (b) and (c) of this Section.

- b) Test Procedures

- 1) Fuel Cap Leak Flow Test

The fuel cap shall be removed from the vehicle's fuel inlet and installed on the fuel cap leak flow tester, using an adapter if necessary. All fuel caps that require a key for removal from the vehicle's fuel inlet shall be tested with the key removed from the lock. At Official Inspection Stations, the lane computer shall provide the lane operator with information as to whether the fuel cap tester can be used to test the vehicle's fuel cap and which adapter, if any, is required, based on one or more of the following items: VIN, make, model, and model year. If the fuel cap can be tested, then the following task shall be performed:

- A) the fuel cap leak flow tester shall be pressurized to 30 ± 1 inches of water. The inspector shall initiate the test. The fuel cap leak flow

tester shall measure the fuel cap leak flow rate and simultaneously compare this flow rate with the flow rate through the calibrated orifice;

- B) within 15 seconds after the depression of the start-test button, the fuel cap leak flow tester shall make a pass/fail determination. Pass/fail analysis shall be determined according to the procedures in subsection (c) of this Section;
- C) fuel caps which have failed an initial integrity test under subsection (c)(4) of this Section shall immediately receive a second-chance fuel cap leak flow test after first ensuring that the fuel cap has been installed on the fuel cap leak flow tester correctly. The procedure contained in subsections (b)(1)(A) and (b)(1)(B) of this Section shall be repeated; and
- D) at the conclusion of all fuel cap leak flow tests, the fuel cap shall be removed from the fuel cap leak flow tester and replaced on the filler neck, ensuring that it is properly tightened.

2) Fuel Cap Pressure Decay Test

The fuel cap shall be removed from the vehicle's fuel inlet and installed on the fuel cap pressure decay tester, using an adapter if necessary. All fuel caps that require a key for removal from the vehicle's fuel inlet shall be tested with the key removed from the lock. At Official Inspection Stations, the lane computer shall provide the lane operator with information as to whether the pressure decay tester can be used to test the vehicle's fuel cap and which adapter, if any, is required, based on one or more of the following items: VIN, make, model, and model year. If the fuel cap can be tested, then the following task shall be performed:

- A) the pressure decay tester shall be pressurized to 28 ± 1 inches of water. The inspector shall initiate the test. The pressure decay tester shall monitor the pressure behind the fuel cap and look for pressure decay;
- B) the pressure decay shall be monitored for 10 seconds after stability is achieved for 10 seconds. Pass/fail analysis shall be determined according to the procedures in subsection(c)of this Section;
- C) fuel caps that have failed an initial integrity test under subsection (c)(4) of this Section shall immediately receive a second-chance fuel cap pressure decay test after first ensuring that the fuel cap has been installed on the pressure decay tester correctly. The procedure contained in subsections (b)(2)(A) and (b)(2)(B) of this

Section shall be repeated; and

D) at the conclusion of all fuel cap pressure decay tests, the fuel cap shall be removed from the pressure decay tester and replaced on the filler neck, ensuring that it is properly tightened.

3) Visual Functional Test

If the vehicle has a fuel cap, but the fuel cap cannot be tested using the leak flow or pressure decay test procedures, then a visual functional test of the fuel cap shall be performed.

c) Pass/Fail Determination

- 1) Vehicles which are presented for testing with missing, inaccessible, incorrect, non-removable, illegal, or otherwise non-testable fuel caps shall fail the evaporative system integrity test.
- 2) If the vehicle's fuel cap is present and can be tested using either the fuel cap leak flow test or the fuel cap pressure decay test under subsection (b)(1) or (b)(2) of this Section and, if tested, the test result does not exceed either the fuel cap leak flow rate standard contained in 35 Ill. Adm. Code 240.172(b) or the fuel cap pressure decay standard contained in 35 Ill. Adm. Code 240.172(a), then the vehicle shall pass the evaporative system integrity test.
- 3) If the vehicle's fuel cap is present and is tested under the provisions of subsection (b)(3) of this Section, and the test result does not exceed the visual functional test standard contained in 35 Ill. Adm. Code 240.172(c), then the vehicle shall pass the evaporative system integrity test.
- 4) If the vehicle's fuel cap is tested using either the fuel cap leak flow test or the fuel cap pressure decay test under the provisions of subsection (b)(1) or (b)(2) of this Section and does not meet the applicable standards contained in 35 Ill. Adm. Code 240.172, the vehicle shall fail the evaporative system integrity test.

(AGENCY NOTE: No vehicle will be failed under subsection (c) until applicable standards have been adopted at 35 Ill. Adm. Code 240 and are effective.)

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.206 Engine and Fuel Type Modifications

In the inspection process, vehicles that have been altered from their original certified configuration are to be tested in the same manner as other subject vehicles. Specific procedures

to be used are as follows:

- a) Vehicles with engines other than the engine originally installed by the manufacturer or an identical replacement of such engine shall be subject to the test procedures and standards for the chassis type and model year of the vehicle.
- b) Vehicles that have been switched from an engine of one fuel type to another fuel type that is subject to the program shall be subject to the test procedures and standards for the current fuel type, and to the requirements of subsection (a) of this Section.
- c) Vehicles that are switched to a fuel type for which there is no certified configuration shall be tested according to the most stringent emission standards established for that vehicle type and model year.

(Source: Section repealed, new Section added at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.207 Transient Loaded Mode Exhaust Emissions Test Procedures

- a) General Requirements
 - 1) The test shall consist of up to 240 seconds of mass emission measurement using a constant volume sampler while the vehicle is driven through a computer-monitored driving cycle on a dynamometer with inertia weight settings appropriate for the weight of the vehicle. The driving cycle shall include acceleration, deceleration, and idle operating modes as specified in subsection (e)(1) of this Section. The 240-second sequence may be ended earlier using fast pass algorithm.
 - 2) The emission standards and dynamometer inertia and power absorption settings shall be automatically selected for the vehicle being tested based upon the identification and validation of the following, as needed:
 - A) Vehicle type: LDV, LDT1,LDT2, and others as needed;
 - B) GVWR;
 - C) Chassis model year;
 - D) Make;
 - E) Model;
 - F) Number of cylinders;

- G) Transmission type;
- H) LVW or ALVW; and
- I) Engine displacement.

Alternative computerized methods of selecting dynamometer test conditions, such as VIN decoding, may be used.

- 3) The ambient temperature, absolute humidity, and barometric pressure shall be recorded continuously during the transient test, or as a single set of readings if taken less than 4 minutes prior to the transient driving cycle.
- 4) If the vehicle is shut off, the vehicle shall be restarted as soon as possible before the test and shall be running for at least 30 seconds prior to the transient driving cycle begins.
- 5) If a vehicle stalls during a transient test, the test shall be aborted and restarted. If after 3 attempts the test cannot be completed, the vehicle shall be rejected.

b) Pre-inspection and Preparation

- 1) Initial tests (i.e., those occurring for the first time in a vehicle's scheduled test cycle) shall be performed without repair or adjustment at the inspection facility prior to the test.
- 2) A test, once initiated, shall be performed in its entirety regardless of intermediate outcomes, except in the case of invalid test conditions or unsafe conditions.
- 3) Tests involving measurement shall be performed with Agency-approved equipment that is operated in accordance with the procedures contained in 40 CFR 85.2234 (Draft), incorporated by reference in Section 276.104(a) of this Part.
- 4) All accessories (air conditioning, heat, defogger, radio, automatic traction control if switchable, etc.) shall be turned off (if necessary, by the inspector).
- 5) The vehicle shall be inspected for exhaust leaks. Audio assessment while blocking exhaust flow or gas measurement of CO₂ or other gases shall be acceptable. Vehicles with leaking exhaust systems shall be rejected from testing.
- 6) Vehicles with missing tailpipe sections that prohibit placement of the

exhaust collection system to capture the entire exhaust stream shall be rejected from testing.

- 7) The vehicle temperature gauge, if equipped and operating, shall be checked to assess temperature. If the temperature gauge indicates that the engine is well below normal operating temperature, the vehicle shall receive a second-chance emission test if it fails the initial test for HC or CO. Vehicles in overheated condition shall be rejected from testing.
 - 8) Vehicles shall be rejected from testing if drive axle tires:
 - A) exhibit visible cords, belts, bubbles, cuts, or other damage, or
 - B) are space-saver spare tires, or
 - C) are not reasonably sized tires.
 - 9) Vehicles' drive axle tires shall be inspected for proper inflation. If one or more of these tires appears low, it shall be inflated to approximately 30 psi, or to tire sidewall pressure, or manufacturer's recommendation.
 - 10) Drive axle tires of vehicles subject to additional testing for the purpose of program evaluation under 40 CFR 51.353, incorporated by reference in Section 276.104(d) of this Part, shall have their tires inflated to tire sidewall pressure.
 - 11) Background concentrations of HC, CO, NO_x, and CO₂ shall be sampled as specified in 40 CFR 85.2226(b)(2)(iv) (Draft), incorporated by reference in Section 276.104(a) of this Part, to determine background concentration of dilution air. The sample shall be taken for a minimum of 15 seconds within 120 seconds after the start of the transient driving cycle, using the same analyzers used to measure tailpipe emissions. Average readings over the 15 seconds for each gas shall be recorded in the test record. Testing shall be prevented until the average ambient background levels are less than 20 ppmC HC, 35 ppm CO, and 2 ppm NO_x (when applicable), or outside ambient air levels (not influenced by station exhaust), whichever are greater.
 - 12) While a lane is in operation, the CVS shall continuously purge the CVS hose between tests. The blower may be turned off if the CVS is not in operation, but the system shall be purged for 2 minutes prior to the start of a test if the blower has been turned off. The off time shall be computer monitored and recorded to a history file for quality assurance.
- c) Equipment Positioning and Settings

Vehicle positioning and settings shall be conducted according to the method specified in 40 CFR 85.2221(c) (Draft), incorporated by reference in Section 276.104(a) of this Part, with the following exceptions:

- 1) the cooling fan need only be activated when the ambient temperature exceeds 72°F;
- 2) the parking brake should only be activated on front wheel drive vehicles when possible; and
- 3) the hood will not be opened for cooling purposes.

d) Vehicle Conditioning

1) Queuing Time

When the measured wait time exceeds 20 minutes, the vehicle shall receive a second-chance emission test if the following conditions apply:

- A) fails the test; and
- B) measured values for HC, CO, and NO_x (if applicable) are at or below 1.5 times the applicable standards of 35 Ill. Adm. Code 240.

2) Program Evaluation

Vehicles selected for additional testing for the purpose of program evaluation under 40 CFR 51.353, incorporated by reference in Section 276.104(d) of this Part, shall receive two full transient emission tests of 240 seconds each. Results from both tests and the test order shall be separately recorded in the test record. Emission results shall be provided to the motorist according to the following criteria:

- A) If the vehicle passes both tests, then the first test result shall be provided.
- B) If the vehicle passes one test and fails the other test, then the test results from the passing test shall be provided.
- C) If the vehicle fails both tests, then the test results from the second test shall be provided.

e) Vehicle Emission Test Sequence

1) Transient Driving Cycle

The vehicle shall be driven over the driving cycle contained in Section 276. Table A of this Part.

2) Driving Trace

The inspector shall follow an electronic, visual depiction of the time/speed relationship of the transient driving cycle (hereinafter, the trace). The visual depiction of the trace shall be of sufficient magnification and adequate detail to allow accurate tracking by the driver and shall permit the driver to anticipate upcoming speed changes. The trace shall also clearly indicate gear shifts as specified in subsection (e)(3) of this Section.

3) Shift Schedule

For vehicles with manual transmissions, inspectors shall shift gears according to the following shift schedule:

Shift Sequence <u>Gear</u>	Approximate Speed <u>Miles per hour</u>	Nominal Cycle Time <u>Seconds</u>
1-2	15	9.3
2-3	25	47.0
De-clutch	15	87.9
1-2	15	101.6
2-3	25	105.5
3-2	17	119.0
2-3	25	145.8
3-4	40	163.6
4-5	45	167.0
5-6	50	180.0
De-clutch	15	234.5

Gear shifts shall occur at the points in the driving cycle where the specified speeds are obtained. For vehicles with fewer than 6 forward gears the same schedule shall be followed with shifts above the highest gear disregarded.

4) Speed excursion limits shall apply as follows:

- A) The upper limit is 2 mph higher than the highest point on the trace within 1 second of the given time.
- B) The lower limit is 2 mph lower than the lowest point on the trace within 1 second of the given time.

- C) Speed variations greater than the tolerances (such as may occur during gear changes) are acceptable provided that they occur for no more than 2 seconds on any occasion.
- D) Speeds lower than those prescribed during accelerations are acceptable provided the vehicle is operating at maximum available power during such accelerations until the vehicle speed is within the excursion limits.
- E) Exceedences of the limits in subsections (e)(4)(A) through (e)(4)(C) of this Section shall automatically result in a void test. Station supervisory personnel can override the automatic void of a test if it is determined that the conditions specified in subsection (e)(4)(D) of this Section occurred. These conditions shall be verified by repeating seconds 0 through 16 of the transient driving cycle as specified in subsection (e) of this Section.
- F) The test shall be aborted and immediately restarted if speed excursion limits are exceeded, except as described in subsection (e)(4)(D) of this Section.

5) Speed Variation Limits

The speed variation limits shall be determined by one of the following methods:

- A) Linear Regression Method
 - i) A linear regression of feedback value on reference value shall be performed on each transient driving cycle for each speed using the method of least squares, with the best fit equation having the form: $y = mx + b$, where:
 - y = The feedback (actual) value of speed
 - m = The slope of the regression line
 - x = The reference value
 - b = The y-intercept of the regression line
 - ii) The SE of y on x shall be calculated for each regression line. A transient driving cycle lasting the full 240 seconds that exceeds the following criteria shall be void and the test shall be repeated:
 - SE = 2.0 mph maximum
 - m = 0.96 - 1.01
 - r(2) = 0.97 minimum
 - b = 2.0 mph

- iii) A transient driving cycle that ends before the full 240 seconds that exceeds the following criteria shall be void and the test shall be repeated:
 SE = (Reserved)
 m = (Reserved)
 r(2) = (Reserved)
 b = (Reserved)

B) Positive Kinetic Energy (PKE) Method

- i) The speed variation limits shall be determined by the following equation for Positive Kinetic Energy (PKE):

$$E = \sum_{t=0}^N \frac{PP[t]}{0} / \int x \, dx$$

where: PP[t] = V(2)[t] – V(2)[(t-1)] mi(2)/hr(2) for V[t] > V[(t-1)]
 PP[t] = 0 for V[t] <= 0
 x = distance (miles)
 PP[t] = Positive Specific Power at time t
 V[t] = Velocity at time t
 V[(t-1)] = Velocity at time t-1

- ii) A transient driving cycle lasting the full 240 seconds with a PKE value that is below the lower PKE limit for passing vehicles or above the upper limit for failing vehicles shall be void and the test shall be repeated:

Upper Limit: PKE > 3456 mi/hr(2)
 Lower Limit: PKE < 3082 mi/hr(2)

- iii) A transient driving cycle that ends before the full 240 seconds with a PKE value that is below the lower second-by-second PKE limit for passing vehicles or above the upper second-by-second PKE limit for failing vehicles shall be void and the test shall be repeated. The second-by-second upper and lower PKE limits are specified in Section 276. Table B.
- iv) PKE values shall not be used to make early pass/fail determination.

- 6) The actual distance traveled for the transient driving cycle shall be measured. If the absolute difference between the measured

distance and the theoretical distance for the actual test exceeds 0.05 miles, the test shall be void.

- 7) The vehicle shall be rejected if, during the course of the transient loaded mode test, station supervisory personnel verify that the test cannot be completed due to the mechanical condition of the vehicle.

- 8) Inertia Weight Selection

Operation of the inertia weight selected for the vehicle shall be verified as specified in Section 276.506(a) of this Part. For systems employing electrical inertia simulation, an algorithm identifying the actual inertia force applied during the transient driving cycle shall be used to determine proper inertia simulation.

- 9) The CVS operation shall be verified for each test for a CFV-type CVS by measuring either the absolute pressure difference across the venturi or measuring the blower vacuum behind the venturi for minimum levels needed to maintain choke flow for the venturi design. The operation of a SSV-type CVS shall be verified throughout the test by monitoring the difference in pressure between upstream and throat pressure. The minimum values shall be determined from system calibrations. Monitored pressure differences below the minimum values shall void the test.

- 10) Fuel Economy

For each test, the quality of the overall analysis system shall be evaluated by checking a test vehicle's fuel economy for reasonableness, relative to upper and lower limits, representing the range of fuel economy values normally encountered for the test inertia and horsepower selected. For each inertia selection, the upper fuel economy limit shall be determined using the lowest horsepower setting typically selected for the inertia weight, along with statistical data, test experience, and engineering judgment. A similar process for the lower fuel economy limit shall be used with the highest horsepower setting typically selected for the inertia weight. For test inertia selections where the range of horsepower settings is greater than 5 horsepower, at least two sets of upper and lower fuel economy limits shall be determined and appropriately used for the selected test inertia. Tests with fuel economy results in excess of 1.5 times the upper limit shall result in a void test.

- 11) System Lockout

If a void occurs as described in subsections (e)(6), (e)(9), or (e)(10) of this Section, then a test lane system lockout shall be initiated. No further testing shall be done until the problem is corrected by station supervisory personnel. At Official Inspection Stations, the vehicle involved shall be immediately retested in a properly operating lane.

f) Transient Loaded Mode Exhaust Gas Test Score Calculations

The transient loaded mode exhaust gas test score shall be determined according to the method specified in 40 CFR 85.2205(b) (Draft), incorporated by reference in Section 276.104(a) of this Part, with the following exceptions:

- 1) The Phase 2 scores for the test shall be determined by dividing the sum of the mass of each pollutant obtained in each second of the Phase 2 test by the number of miles driven in the Phase 2 test. The first data point is the sample taken from t=94 to t=95. The Phase 2 test score shall be determined by the following equation:

$$\text{Phase 2 gpm} = \frac{\sum_{t=94}^s \text{grams of emissions}}{\sum_{t=94}^s \text{miles traveled}}$$

Where s = duration of test in seconds for fast pass, or s = 239 seconds for complete transient loaded mode exhaust gas test.

- 2) NO_{xe} = Nitrogen oxide concentration of the dilute exhaust sample as measured in ppm and multiplied by 1.03.
- 3) NO_{xd} = Background nitrogen oxide concentration of the dilution air, sampled as described in 40 CFR 85.2221(b)(5) (Draft), incorporated by reference in Section 276.104(a) of this Part, as measured in ppm and multiplied by 1.03.

g) Pass/Fail Determination

Compliance with the transient loaded mode exhaust emission test shall be made in accordance with the standards contained in 35 Ill. Adm. Code 240, Subpart E.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

a) Applicability

On-road remote sensing tests shall be scheduled to occur at least once a year by the Agency or its designee in each affected county, distributed throughout the inspection areas in proportion to the number of subject vehicles registered in these areas, and performed in accordance with the procedures specified in subsections (b) through (e) of this Section.

b) On-Road Remote Sensing Test Procedure

The on-road remote sensing test shall consist of measuring the concentration of HC, CO, and CO₂, and automatically recording the speed, acceleration, and license plate of each in-use vehicle. Compliance is determined by comparing the measured emission concentration of each pollutant to the on-road remote sensing emission standards contained in 35 Ill. Adm. Code 240.182.

c) Test Site Location Criteria

Test locations for on-road remote sensing tests shall be sited such that:

- 1) cold start vehicle operation conditions are avoided;
- 2) areas where vehicles are generally accelerating or driving at a steady speed uphill are favored;
- 3) areas where vehicles are generally decelerating are avoided;
- 4) areas that could produce high load conditions are avoided;
- 5) traffic is contained to a single lane;
- 6) traffic is high in volume;
- 7) test equipment is unobtrusive to vehicle operation; and,
- 8) adequate median space is provided for safe operation of test equipment.

d) Data Collection

- 1) The following items shall be collected for each vehicle receiving an on-road remote sensing test:
 - A) vehicle license plate number;
 - B) date and time of test;

- C) test site reference number;
 - D) emission levels for HC, CO, and CO[2]; and,
 - E) speed and acceleration of vehicle.
- 2) The following items shall be collected for each on-road remote sensing test site:
- A) test site reference number;
 - B) description of test site location; and,
 - C) slope of test site in degrees.
- e) Pass/Fail Determination

The owner of any non-exempt vehicle that has previously been through an in-cycle emissions test and passed the final retest, or is determined to be out of compliance, which is found with an exceedance of the on-road remote sensing emission standards, shall be notified of such exceedance. If a second exceedance occurs prior to the next scheduled in-cycle emissions test, the Agency will reassign the vehicle and notify the owner of a required out-of-cycle exhaust emissions test.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.209 On-Board Diagnostic Test Procedures

a) Test Procedures

The OBD test procedure shall be conducted according to the method specified in 40 CFR 85.2222(a), (b), and (c), incorporated by reference in Section 276.104(c) of this Part.

c) Pass/Fail Determination

The pass/fail determination for OBD testing shall be conducted according to the method specified in 40 CFR 85.2222(d), incorporated by reference in Section 276.104(c) of this Part.

d) OBD Test Report

The OBD test report shall be prepared according to the method specified in 40 CFR 85.2223, incorporated by reference in Section 276.104(c) of this Part, with

the exception that the following statement shall be added to the report for all OBD tests conducted prior to January 1, 2001:

"At the present time, passing the OBD test is not a requirement for passing the Enhanced I/M test. Therefore, this information is being provided strictly as an aid in diagnosing emission-related problems."

(AGENCY NOTE: No vehicle shall fail the I/M test on the basis of the OBD test until January 1, 2001.)

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

SUBPART C: STICKER OR CERTIFICATE ISSUANCE, DISPLAY, AND POSSESSION

Section 276.301 General Requirements

- a) The owners of all vehicles subject to inspection shall obtain and display on the vehicle a valid unexpired vehicle emissions inspection sticker, or carry within the vehicle a valid unexpired vehicle emissions inspection certificate, whichever is required by the Agency and issued in the manner described in this Section.
- b) The owner of every vehicle which receives an emissions inspection sticker or certificate shall be required to have the vehicle inspected prior to the expiration date of the sticker or certificate, and shall be requested to have the vehicle inspected prior to the end of the Assigned Test Month.
- c) Failure to comply with applicable provisions of the Vehicle Emissions Inspection Law [625 ILCS 5/Ch. 13A] or the Vehicle Emissions Inspection Law of 1995 [625 ILCS 5/Ch. 13B] (shall subject the owner(s) of the vehicle to the enforcement provisions thereof.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.302 Determination of Affected Counties

- a) The Agency shall make its determination of the geographic extent of an affected county based upon the "UNITED STATES POSTAL SERVICE ZIP + 4 National Directory File".
- b) To the extent practicable, the Agency shall make its determination of residency in an affected county so as to assure that:
 - 1) irrespective of Zip Code, the affected counties correspond to the geographic areas prescribed in the Vehicle Emissions Inspection Law, and

- 2) the affected counties are composed of contiguous geographic areas within each of the counties.

Section 276.303 Emissions Inspection Sticker or Certificate Design and Content

All emissions inspection stickers or certificates required under this Section shall, at a minimum, include the following information in a clear and recognizable fashion:

- a) the month and year the sticker or compliance certificate expires;
- b) the month and year in which the vehicle is scheduled for testing; and,
- c) a unique sticker or compliance certificate number.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.304 Initial Emissions Inspection Stickers or Certificates

The Initial Emissions Inspection Sticker or Certificate enables a vehicle not previously subject to inspection to display a valid sticker or possess a valid certificate within the vehicle to demonstrate compliance with the Vehicle Emissions Inspection Law or the Vehicle Emissions Inspection Law of 1995 pending such vehicle receiving an initial emissions inspection. Such sticker or certificate shall be issued as follows:

- a) The Agency or its designee shall send Initial Emissions Inspection Stickers or Certificates to owners of all vehicles initially subject to inspection no less than fifteen days prior to the first day of the month in which the vehicle is scheduled for its initial inspection. Each Initial Emissions Inspection Sticker or Certificate shall expire on the last day of the third month following the month assigned by the Agency for the initial inspection.
- b) Each Initial Emissions Inspection Sticker or Certificate shall include a notice of the assigned month of the initial emissions inspection and shall be accompanied by a clear statement from the Agency that, based on vehicle records, the vehicle is subject to applicable emissions inspection requirements of the Vehicle Emissions Inspection Law and the Vehicle Emissions Inspection Law of 1995, as applicable. A form accompanying the sticker or certificate will be provided to the vehicle owner to allow for correction of any information relied upon by the Agency.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.305 Exempt Emissions Inspection Stickers or Certificates

- a) An Exempt Emissions Inspection Sticker or Certificate may be issued by the Agency or its designee for each vehicle registered in an Affected County that either:

- 1) is exempt from emissions inspection pursuant to Section 13B-15f of the Vehicle Emissions Inspection Law of 1995; or
 - 2) is exempt from emissions inspection pursuant to Section 13B-15(g) of the Vehicle Emissions Inspection Law of 1995, provided however, that in order to receive an exemption under Section 13B-15(g), the owner of the vehicle must provide sufficient proof to the Agency that the vehicle is not located and primarily operated within an Affected County.
- b) Each Exempt Emissions Inspection Sticker or Certificate shall, at a minimum, include the following information in a clear and recognizable fashion:
- 1) A unique sticker or certificate number;
 - 2) the word "EXEMPT"; and
 - 3) the month and year the sticker or certificate expires, if applicable.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.306 Renewal Emissions Inspection Stickers or Certificates

A Renewal Emissions Inspection Sticker or Certificate will be issued by the Agency or its designee to the owner of each vehicle which successfully passes a vehicle emissions test. Each Renewal Emissions Inspection Sticker or Certificate will contain the information indicated in Section 276.303 and the word "PASS".

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.307 Temporary Emissions Inspection Stickers or Certificates

- a) The Agency or its designee may issue a Temporary Emissions Inspection Sticker or Certificate for any vehicle subject to inspection which currently has a valid Renewal or Initial Emissions Inspection Sticker or Certificate, and for which an Initial Emissions Inspection Sticker or Certificate has already been issued.
- b) A Temporary Emissions Inspection Sticker or Certificate may only be issued if the vehicle's owner informs the Agency that the vehicle will be tested by the end of the seventh month after the vehicle's Assigned Test Month, and one or more of the following conditions exist:
 - 1) the vehicle is located and being primarily operated in an area not currently subject to inspection under the Vehicle Emissions Inspection Law;
 - 2) the vehicle is inoperative or has failed a vehicle emissions inspection and

is awaiting necessary repairs to enable the vehicle to comply; or

- 3) the vehicle has not received necessary repairs or adjustments for which it is eligible under any emissions performance warranty provided pursuant to Section 207 of the Clean Air Act.
- c) A Temporary Emissions Inspection Sticker or Certificate shall be issued and contain a sticker or certificate expiration date which is the end of the seventh complete month after the Assigned Test Month.
- d) A Temporary Emissions Inspection Sticker or Certificate may only be issued to the owner of a vehicle once in the vehicle's test cycle.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.308 Corrected or Interim Emissions Inspection Stickers or Certificates

Vehicles subject to emissions inspection which have previously been issued an Initial Emissions Inspection Sticker or Certificate and which have an Assigned Test Month may be reassigned to a later Assigned Test Month. Whenever such reassignment is approved by the Agency, the Agency or its designee shall issue a Corrected or Interim Emissions Inspection Sticker or Certificate to the owner of the vehicle.

- a) The Agency shall issue a Corrected or Interim Emissions Inspection Sticker or Certificate for a vehicle if one or more of the following conditions exist:
 - 1) the Agency is notified by the Secretary of State that the vehicle has been registered by a new owner and the Agency assigns a test month for the vehicle that is later than the currently Assigned Test Month in order for the registered owner of the vehicle to receive proper notice to have the vehicle tested;
 - 2) the Agency finds it necessary to reassign vehicles to a later Assigned Test Month and year in order to implement the Vehicle Emissions Inspection Law of 1995; or
 - 3) the vehicle is assigned a new test month and year as a result of the granting of a petition pursuant to Section 276.311.
- b) All Corrected or Interim Emissions Inspection Stickers or Certificates shall expire at the end of the third month following the Assigned Test Month.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.309 Waiver Emissions Inspection Stickers or Certificates

A Waiver Emissions Inspection Sticker or Certificate shall be issued by the Agency to the owner of any vehicle which fails a vehicle emissions test and at least one retest but successfully complies with the applicable waiver requirements of Section 276.401. Each Waiver Emissions Inspection Sticker or Certificate will contain the information indicated in Section 276.303 and the word "WAIVER".

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.310 Emissions Inspection Sticker and Certificate Display and Possession

- a) If an emissions inspection sticker required by this Part is issued by the Agency or its designee to the owner of a vehicle, it shall be affixed to the lower left hand side of the vehicle's windshield as viewed by the driver facing toward the front of the vehicle. Such sticker shall be affixed so as not to obscure the Vehicle Identification Number (VIN) of the vehicle when viewed from the outside. No more than one emission inspection sticker shall be displayed at any time. If an emissions inspection certificate required by this Part is issued by the Agency or its designee, it shall be carried inside the vehicle for which it is issued.
- b) Any sticker or certificate issued and required to be affixed to or possessed within a vehicle subject to inspection under the Vehicle Emissions Inspection Law, whether expired or unexpired, shall not be removed by any person for any reason. If the sticker or certificate is damaged or destroyed a duplicate sticker or certificate shall be requested from the Agency or its designee and issued to the owner of the vehicle.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.311 Change of Assigned Test Month

Any person who is unable to have his or her vehicle tested in the month assigned by the Agency may request a permanent change of the Vehicle's Assigned Test Month. The Agency may grant the request, reassign the Vehicle's Assigned Test Month, and issue a Corrected Emissions Inspection Sticker or Certificate as follows:

- a) if a vehicle is unable to be tested by the end of the seventh month after its Assigned Test Month, and is not eligible for an exemption under Section 276.305 nor covered by reciprocity provisions of Subpart J, a new test month will be assigned based on the month the vehicle will return to an Affected County; and
- b) if the vehicle is in storage during the month of October, November, December, January, February or March, the vehicle will be assigned a test month of the following April, May, or June if the request is received prior to the sticker or certificate expiration date.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.312 Economic Hardship Extension Stickers or Certificates

An Economic Hardship Extension Sticker or Certificate shall be issued by the Agency to the owner(s) of any vehicle which fails a vehicle emissions test but successfully complies with the applicable economic hardship extension requirements of Section 276.404 of this Part. Each Economic Harship Extension Emissions Inspection Sticker or Certificate will contain the information indicated in Section 276.303 and the word "ECONOMIC HARDSHIP EXTENSION".

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998.)

SUBPART D: WAIVER REQUIREMENTS

Section 276.401 Waiver Requirements

All vehicles subject to inspection under the Vehicle Emissions Inspection Law of 1995 [625 ILCS 5/Ch. 13B] shall be eligible for a waiver from meeting the applicable vehicle emission standards contained in 35 Ill. Adm. Code 240 upon submission of proof to a Waiver Inspector of compliance with all of the following:

- a) after failing a retest, the vehicle has failed to comply with the applicable vehicle emission standards;
- b) a minimum expenditure of at least \$450 in emission-related repairs exclusive of tampering-related repairs have been made;
- c) the vehicle has received all repairs and adjustments for which it is eligible under any emission performance warranty provisions pursuant to Section 207 of the Clean Air Act (42 USC 7541);
- d) the repairs have resulted in an improvement in vehicle emissions as determined by comparison of initial and final retest results;
- e) the Agency determines by normal inspection procedures that the emission control devices are present and appear to be properly connected and operating;
- f) repairs for vehicles of model year 1981 and later are conducted by a recognized repair technician; and
- g) evidence of repair is presented consisting of either signed and dated receipts identifying the vehicle and describing the work performed and amount charged for eligible emission-related repairs, or an affidavit executed by the person performing the eligible emission related repairs.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.402 Low Emissions Tuneups

a) Minimum Requirements

- 1) All low emissions tuneups shall include inspection of the following vehicle components or systems:
 - A) air cleaners elements;
 - B) all other intake restrictions;
 - C) choke mechanism;
 - D) idle speed, ignition dwell, and timing;
 - E) air-fuel mixture;
 - F) sensors and vacuum hoses;
 - G) positive crankcase ventilation (PCV) system;
 - H) exhaust gas recirculation (EGR) system;
 - I) spark plugs and spark plug wires;
 - J) electronic fuel metering and feedback control system; and
 - K) air pump.
- 2) Any of the above components or systems which are found to be operating improperly shall be adjusted, repaired, or replaced, as appropriate.
- 3) A low emissions tuneup shall not require a major engine overhaul, including all repairs which require access to the combustion chamber (except for spark plug or fuel injection equipment replacement, as applicable).

b) Proof of Low Emissions Tuneups

Proof of low emissions tuneups necessary to satisfy the requirements in Section 276.401(b) shall consist of the following:

- 1) a repair order or receipt(s) provided by the person performing the repairs; the date of the repairs; an itemization of all diagnoses, repairs, adjustments, and part replacements; a statement of cost; and the signature

of the person who performed the repairs;

- 2) if necessary, a visual inspection of the vehicle to determine if the repairs have actually been performed; and
- 3) all information requested on the reverse side of the Vehicle Inspection Report must be completed.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.403 Denial or Issuance of Waiver

- a) If the Agency determines that an applicant for a waiver has not complied with all applicable waiver criteria set forth in Section 276.401 of this Part, the waiver request shall be denied. The Agency shall provide to the applicant a written statement containing the reasons for the denial.
- b) If the Agency determines that an applicant for a waiver has complied with all waiver criteria set forth in Section 276.401 of this Part, the waiver shall be issued. The Agency shall provide to the applicant a certificate of waiver containing a description of the vehicle, including the manufacturer's vehicle identification number; the issuance date of the waiver; and the expiration date of the waiver.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.404 Economic Hardship Extension Requirements

a) Requirements

A one year economic hardship extension sticker or certificate shall be granted by the Agency to the owner(s) of a vehicle upon application if the following criteria are met:

- 1) when tested, the subject vehicle failed to meet applicable emission standards contained in 35 Ill. Adm. Code 240, except that the economic hardship extension sticker or certificate will not be granted if only the applicable fuel cap emissions test standard contained in 35 Ill. Adm. 240 is failed;
- 2) the registered owner(s) of the subject vehicle certifies that his or her, or their household income qualifies as "low income" as defined in this Part. In the case of multiple registered owners who are not part of the same household, the registered owners must certify that the sum of each registered owner's household income qualifies as "low income" as defined in Section 276.102 of this Part;

- 3) the current or former owner(s) of a subject vehicle has not previously received an economic hardship extension sticker or certificate for the subject vehicle, or, if an economic hardship extension has previously been issued, the vehicle passed all required emissions tests prior to issuance of another economic hardship extension sticker or certificate;
 - 4) the registered owner(s) of the subject vehicle present(s) either of the following, which shall not include any costs associated with any motor vehicle emission related recall that has been, or is to be, paid by a manufacturer or dealer:
 - A) a written estimate prepared by a recognized repair technician for emission related vehicle repairs, parts or services, including diagnostic fees, related to the failure in the amount of 50 percent or greater of the current waiver repair minimum amount contained in Section 276.402(a)(3) of this Part; or,
 - B) if the registered owner(s) intend(s) to perform the necessary services or repairs, the written estimate shall include only the cost of emission related parts.
 - 5) the registered owner(s) of the vehicle grant(s) authorization to the Agency or its representatives to make legitimate inquiries as necessary, including to all relevant state departments or agencies, including but not limited to the Office of the Secretary of State, and the Department of Human Services, to verify ownership and income information.
- b) An economic hardship extension sticker or certificate is not transferrable to one or more subsequent owners.
 - c) An economic hardship extension sticker or certificate may be revoked by the Agency if the Agency determines that the applicant(s) made false statements on the economic hardship extension application.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

SUBPART E: TEST EQUIPMENT SPECIFICATIONS

Section 276.501 General Requirements

Compliance with Illinois vehicle exhaust and evaporative emissions standards shall be determined by sampling vehicle exhaust and evaporative emissions with the following:

- a) Steady-state idle test equipment meeting the specifications set forth in Sections 276.502 and 276.503 of this Part;

- b) Evaporative system test equipment meeting the specifications set forth in Section 276.504 of this Part;
- c) Transient loaded mode test equipment meeting the specifications set forth in Sections 276.505 and 276.506 of this Part;
- d) On-road remote sensing test equipment meeting the specifications set forth in Section 276.507 of this Part; and
- e) OBD test equipment meeting the specifications set forth in Section 276.508 of this Part.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.502 Steady-State Idle Exhaust Test Analysis Systems Functional Requirements

The steady-state idle test exhaust analysis system shall meet the functional requirements specified in 40 CFR 85.2225(b) (Draft), incorporated by reference in Section 276.104(a) of this Part with the following exception: the sampling system shall have both a tachometer and a dynamometer. Additionally, all exhaust gas analyzers used at Official Inspection Stations shall be capable of:

- a) providing reliable, continuous service under high throughput (i.e., 25 tests per hour minimum) conditions;
- b) making an automatic selection of the proper emission standard for each vehicle tested;
- c) making automatic pass/fail determinations for each vehicle tested;
- d) recording test data in machine-readable (computer) form for subsequent data processing and analysis;
- e) making an instantaneous printing of duplicate copies of test results; and
- f) meeting the following equipment calibration requirements;
 - 1) automatic HC hangup check with purging to begin upon completion of each test;
 - 2) automatic zero and span check to be conducted prior to each test;
 - 3) automatic leak check within 4 hours prior to the test; and
 - 4) automatic 2-point gas calibration within 4 hours prior to the test;

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.503 Steady-State Idle Test Exhaust Analysis Systems Performance Criteria

The steady-state idle test exhaust analysis system shall meet the performance criteria specified in 40 CFR 85.2225(c) (Draft), incorporated by reference in Section 276.104(a) of this Part.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.504 Evaporative System Integrity Test Functional Requirements and Performance Criteria

a) Requirements

Both fuel cap leak flow testers and fuel cap pressure decay testers used for evaporative system integrity testing shall be:

- 1) easily connected to fuel caps, including those tethered to the vehicle;
- 2) compatible with at least 95 percent of all vehicles required to receive a fuel cap test;
- 3) adaptable as required to test future model year vehicles as they enter the eligible fleet;
- 4) capable of performing the following additional functions (if used at Official Inspection Stations):
 - A) provide reliable, continuous service under high throughput (i.e., 25 tests per hour minimum) conditions;
 - B) provide for the automatic selection of the proper fuel cap test equipment (if applicable) for each vehicle tested;
 - C) provide for an automatic pass/fail determination for each vehicle tested;
- 5) unaffected by atmospheric variation (i.e., barometric pressure, humidity, temperature, etc.). Test accuracy shall be within 2 percent of stated values from 0 F. to 120 F.;
- 6) pressurized using air, Nitrogen (N₂), or an equivalent non-toxic, non-greenhouse, inert gas;

- 7) capable of controlling the supply pressure and prevent over pressurization;
 - 8) tamper resistant; and,
 - 9) designed to avoid damage to the vehicle during installation, testing and removal.
- b) Fuel cap pressure decay tester

The fuel cap pressure decay tester used for evaporative system integrity testing shall be equipped with a pressure gauge with a minimum range of 0 to 50 inches of water and an accuracy of 0.3 inches of water or 2 percent of point, whichever is greater.

- c) Fuel cap leak flow tester

The fuel cap leak flow tester used for evaporative system integrity testing shall be:

- 1) equipped with a serviceable air filter upstream of the flow comparison circuitry;
- 2) equipped with an automatic shutoff and a low-battery indicator if battery powered;
- 3) supplied with a NIST traceable reference passing fuel cap of nominal 52 to 56 cc/min for daily test verification;
- 4) supplied with a NIST traceable reference failing fuel cap of nominal 64 to 68 cc/min for daily test verification;
- 5) accurate to 3 cc/min at the 60 min flow standard; and
- 6) able to be modified, either by the manufacturer or an authorized service center, to test at a revised leakage (flow) rate from that originally shipped.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.505 Transient Loaded Mode Test Systems Functional Requirements

The transient loaded mode test system shall meet the functional requirements specified in 40 CFR 51.358(b), incorporated by reference in Section 276.104(d) of this Part.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.506 Transient Loaded Mode Test Systems Performance Criteria

- b) The Infrared SDM shall be of a design certified to meet the following accuracy requirements:

Pollutant	Range	Accuracy
HC	All	∇150 ppm or ∇15 percent of expected HC Concentration
CO	#3.0 percent >3.0 percent	∇10 percent or 0.25 percent (Whichever is greater) ∇15 percent

- c) The speed and acceleration measurement system shall be of a design certified to measure vehicle speed to within ∇0.5 miles per hour and vehicle acceleration to within ∇0.3 miles per hour per second at the moment exhaust is measured.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.508 On-Board Diagnostic Test Systems Functional Requirements and Performance Criteria

The OBD test system shall meet the functional requirements specified in 40 CFR 85.2231, incorporated by reference in Section 276.104(c) of this Part.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

SUBPART F: EQUIPMENT MAINTENANCE AND CALIBRATION

Section 276.601 Steady-State Idle Test Equipment Maintenance

All operators of exhaust gas analyzers shall conduct a preventive maintenance and quality control program consisting of the following elements:

- a) an HC hang-up check conducted prior to each test and after the last test of the day; HC hang-up shall not exceed 20 ppm HC prior to any test;
- b) visual inspection of all equipment prior to the first test of the day;
- c) performance of analyzer preventative maintenance, (e.g., filter replacement, inspection and cleaning of probes, sample lines, water traps, etc.) according to manufacturer's recommended schedules and as needed; and
- d) all calibration and operating procedures specified in Section 276.602.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.602 Steady-State Idle Test Equipment Calibration

All operators of steady-state idle test exhaust gas analyzers shall comply with the following calibration and operating procedures unless alternative procedures have been approved by the Agency:

- a) exhaust gas analyzers shall be warmed up prior to each vehicle inspection, zero check, span check, or calibration. Analyzers shall be considered to be in a warmed-up condition once stabilized zero readings (readings stabilize for one minute within $\pm 2\%$ of full scale, low range on all three channels) are obtained.
- b) The analyzer shall conduct an zero and span check prior to each test. The span check shall include the HC, CO and CO[2] channels, and the NO and O[2] channels, if present. If zero and/or span drift cause the signal levels to move beyond the adjustment range of the analyzer, it shall lock out from testing.
- c) The system shall lock out from testing if sample flow falls below three percent of full scale, or causes system response time to exceed 13 seconds to 90 percent of a step change in input, whichever is less.
- d) A system leak check shall be performed within four hours before the test, and may be performed in conjunction with the gas calibration described in subsection (e)(1) of this Section. If a leak check is not performed within four hours or if the analyzer fails the leak check, the analyzer shall lock out from testing. The leak check shall be a procedure demonstrated to effectively check the sample hose and probe for leaks and shall be performed in accordance with good engineering practices. An error of more than $\pm 2\%$ of the reading using low range span gas shall cause the analyzer to lock out from testing and shall require repair of leaks.
- e) Gas Calibration
 - 1) On each operating day, analyzers shall successfully pass a two-point gas calibration for HC, CO, and CO[2] and shall continually compensate for changes in barometric pressure. Calibration shall be checked within 4 hours before the test and the analyzer adjusted if the reading is more than 2% different from the span gas value. Gas calibration shall be accomplished by introducing span gas that meets the requirements of subsection (e)(3) of this Section into the analyzer through the calibration port. If the analyzer reads the span gas within the allowable tolerance range (i.e., the square root sum of the squares of the span gas tolerance described in subsection (e)(3) of this Section and the calibration tolerance, which shall be equal to 2%), no adjustment of the analyzer is necessary. The gas calibration procedure shall correct readings that exceed the allowable tolerance range to the center of the allowable tolerance range.

The pressure in the sample cell shall be the same with the calibration gas flowing during calibration as with the sample gas flowing during sampling. If the system is not calibrated, or the system fails the calibration check, the analyzer shall lock out from testing.

2) A two point gas calibration procedure shall be followed. The span shall be accomplished at one of the following pairs of span points:

A) Low
300--ppm propane (HC)
1.0--percent CO
6.0--percent CO[2]
1000--ppm nitric oxide (if equipped with NO)
High
1200--ppm propane (HC)
4.0--percent CO
12.0--percent CO[2]
3000-ppm nitric oxide (if equipped with NO)

B) Low
0-ppm propane (HC)
0.0--percent CO
0.0--percent CO[2]
0--ppm nitric oxide (if equipped with NO)
High
600--ppm propane (HC)
1.6--percent CO
11.0--percent CO[2]
1200--ppm nitric oxide (if equipped with NO)

1) The span gases used for the gas calibration shall be traceable to NIST standards within two percent and shall be within two percent of the span points specified in subsection (e)(2) of this Section.

f) Other Checks

In addition to the other periodic checks described in this Section, those described in subsections (f)(1) and (f)(2) of this Section shall also be used to verify system performance under the special circumstances described therein.

1) Gas Calibration

A) Each time the analyzer electronic or optical systems are repaired or replaced, a gas calibration shall be performed prior to returning the unit to service.

- B) Monthly multi-point calibrations shall be performed. The calibration curve is checked at 20 percent, 40 percent, 60 percent, and 80 percent of full scale, and must be adjusted or repaired if the specifications in Section 276.503 are not met.

2) Leak Checks

Each time the sample line integrity is broken, a leak check shall be performed prior to testing.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)
Section 276.603 Evaporative System Integrity Test Maintenance and Calibration

a) Applicability

Relevant parameters of the fuel cap pressure decay tester and leak flow testers shall be inspected according to the procedures contained in this Section

1) Pressure Decay Tester

- A) The fuel cap pressure decay tester shall be checked for integrity at the beginning of each operating day and after 5 hours of use each day. If, after the fuel cap attachment end of the pressure decay tester is capped and pressurized to between 14 and 28 inches of water, the pressure system changes more than 0.2 inches of water over 15 seconds, the pressure decay tester shall be removed from service.
- B) The pressure gauge for the pressure decay tester shall be checked on a weekly basis against a reference gauge. A pressure decay tester that has a deviation in the measured pressure exceeding 0.3 inches of water shall be removed from service.

2) Leak Flow Tester

- A) The accuracy of the leak flow tester shall be verified by testing and correctly identifying the passing and failing reference fuel caps at the beginning of each operating day. Reference fuel caps shall be stored in a dirt and dust free manner to prevent clogging and changes in flow rate. Reference fuel caps shall be stored at the same temperature as the leak flow fuel cap tester to provide accurate flow reference.
- B) Independent flow bench verification of the reference fuel caps and the internal flow standard orifice shall be conducted before initial usage and as recommended by the leak flow tester manufacturer or

as suggested by analysis of quality control data. The bench flow verification results shall be traceable to NIST.

- C) The upstream filter for the leak flow tester shall be maintained in accordance with manufacturer's specifications.
- b) Any fuel cap leak flow tester or pressure decay tester which fails an inspection shall be removed from service until repaired and its accuracy verified.
- c) The fuel cap adapters shall be checked for leaks or damage following the recommendations of the fuel cap tester manufacturer or the fuel cap adapter supplier.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.604 Record Keeping

All operators of emissions test equipment shall maintain written records of all maintenance and calibration performed on such equipment. Said records shall be kept on site for a period of two years and shall be made available to the Agency upon request.

(Source: Renumbered from Section 276.603 and amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.605 Transient Loaded Mode Test Equipment Maintenance and Calibration

- a) General Requirements

The transient loaded mode test equipment shall meet the general maintenance and calibration requirements specified in 40 CFR 85.2234(a) (Draft), incorporated by reference in Section 276.104(a) of this Part.

- b) Dynamometer

The dynamometer equipment shall meet the maintenance and calibration requirements specified in 40 CFR 85.2234(b) (Draft), incorporated by reference in Section 276.104(a) of this Part.

- c) Constant Volume Sampler

The constant volume sampler test equipment shall meet the maintenance and calibration requirements specified in 40 CFR 85.2234(c) (Draft), incorporated by reference in Section 276.104(a) of this Part, with one exception: The bag sample check described in 40 CFR 85.2234(c)(6) (Draft), incorporated by reference in Section 276.104(b) of this Part, shall be performed during initial acceptance testing.

d) Analysis System

The transient loaded mode test analysis system shall meet the maintenance and calibration requirements specified in 40 CFR 85.2234(d) (Draft), incorporated by reference in Section 276.104(a) of this Part, with the following exceptions:

- 1) the zero and up-scale span points shall be checked at 2 hour instead of 3 hour intervals following the daily mid-scale curve check;
- 2) the NO[x] converter check and the NO/NO[x] flow balance are not required;
- 3) the integrator check as specified in 40 CFR 85.2234(d)(9) (Draft), incorporated by reference in Section 276.104(b) of this Part, is required; and,
- 4) the interference check (laboratory testing) as specified in 40 CFR 85.2234(d)(11) (Draft) incorporated by reference in Section 276.104(b) of this Part is required to be performed instead of the interference check specified in 40 CFR 85.2234(d)(11) (Draft), incorporated by reference in Section 276.104(a) of this Part.

e) Gases

The transient loaded mode test analysis system gases shall meet the calibration requirements specified in 40 CFR 85.2234(e) (Draft), incorporated by reference in Section 276.104(a) of this Part.

f) Overall System Performance

The overall system performance for the transient loaded mode test shall meet the requirements specified in 40 CFR 85.2234(f) (Draft), incorporated by reference in Section 276.104(a) of this Part.

g) Control Charts

The transient loaded mode test analysis system control charts shall meet the requirements specified in 40 CFR 85.2234(g) (Draft), incorporated by reference in Section 276.104(a) of this Part, with the following exception: combined control charts for all facilities will be maintained.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

- a) All equipment utilized for on-road remote sensing emission measurement shall be maintained and calibrated according to the manufacturer's specifications.
- b) The accuracy of the Infrared SDM shall be verified by measuring the concentration of tri-blend (CO[2], HC, CO) calibration gas released from a specially modified vehicle. A two point gas calibration procedure shall be followed. The span shall be accomplished at the following pair of span points:
 - 300--ppm propane (HC)
 - 1.0-- percent CO
 - 6.0-- percent CO₂
 - 1200--ppm propane (HC)
 - 4.0-- percent CO
 - 12.0-- percent CO[2]The Infrared SDM shall measure the span gas within the allowable tolerance range specified in Section 276.507(b) of this Part.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.607 On-Board Diagnostic Test Systems Maintenance and Calibration

All equipment utilized for OBD test systems shall be maintained and calibrated according to the manufacturer's specifications.

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

SUBPART G: FLEET SELF TESTING REQUIREMENTS

Section 276.701 General Requirements

- a) Any owner or lessee of a fleet of 15 or more vehicles subject to inspection may apply to the Agency for a permit to operate one or more Private Official Inspection (Stations Fleet Inspection Permit).
- b) Fleet inventory vehicles shall be required to receive the same emissions tests as other vehicles tested at an Official Inspection Station. However, for a period not to exceed 5 years after implementation of the Enhanced I/M testing program as described in Section 276.101(b) of this Part, fleet self-testers who have been issued and maintain a valid fleet inspection permit ("fleet inspection permittees") prior to implementation of the Enhanced I/M testing program shall be allowed to conduct steady-state idle exhaust tests only on vehicles required to receive such tests under Section 13B-25(c) of the Vehicle Emissions Inspection Law of 1995 using currently approved steady-state idle test equipment and steady-state idle equipment maintenance and calibration procedures. This authority shall terminate for each such fleet inspection permittee prior to the expiration of this 5 year

period if such mpermittee discontinues fleet self-testing. Beginning with the implementation of the Enhanced I/M testing program, fleet inspection permittees utilizing the authority of this subsection to conduct steady-state idle exhaust tests shall also conduct evaporative system integrity tests as described in Sections 276.205, 276.504 and 276.603 of this Part, and shall also conduct on-board diagnostic tests as described in Sections 276.209, 276.508, and 276.607 of this Part as applicable. Such fleet inspection permittees shall not substitute a steady-state idle exhaust test for the transient loaded mode exhaust test required to be performed on vehicles specified by Section 13B-25(b) of the Vehicle Emissions Inspection Law of 1995.

- c) If the Agency substantially amends emissions inspection standards, procedures, or other requirements, it may require emissions inspectors to be re-certified and fleet self-testers to be re-permitted.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.702 Fleet Inspection Permit

The Agency shall issue Fleet Inspection Permits to eligible applicants upon a showing of compliance with the following requirements:

- a) Equipment

All fleet inspections shall be conducted utilizing equipment that meets the same functional requirements, performance criteria, maintenance standards, and calibration requirements as equipment used in Official Inspection Stations.

- b) Training

Each fleet inspector shall be required to complete and pass a training course given by the Agency covering the following topics:

- 1) I/M rules and regulations;
- 2) testing procedures;
- 3) analyzer use;
- 4) analyzer calibration and quality control; and
- 5) data recording, record keeping and submittal.

- c) General Fleet Inspection Permit Requirements

- 1) Fleet Inspection Permits shall expire two years after the date of issuance.

- 2) Fleet Inspection Permits are not transferable.
 - 3) Any change in the name and/or address of any permittee or any fleet inspector(s) employed by the permittee shall be reported to the Agency in writing on forms provided by the Agency within 30 days after the change.
- d) Fleet Inspection Permit Suspension and Revocation

For the following reasons, the Agency may suspend for a period of up to two years or revoke, with the permittee being ineligible to reapply for two years, a Fleet Inspection Permit:

- 1) the permittee has violated any provision of this rule;
- 2) the permittee has provided false or misleading information in its application for a Fleet Inspection Permit;
- 3) the permittee has failed to keep proper records as required by the Agency in that:
 - i) the permittee has failed to notify the Agency of a vehicle's emissions test results within 45 days after the date of inspection;
 - ii) the permittee has failed to notify the Agency that a vehicle has been deleted from its vehicle inventory within 60 days after the vehicle's disposal; or
 - iii) 20 percent of the vehicles in the permittee's fleet have expired compliance stickers or certificates;
- 4) the permittee has misrepresented any information provided in fleet vehicle lists, vehicle inspection reports, and/or equipment maintenance and calibration reports;
- 5) the number of vehicles subject to inspection in the permittee's fleet becomes less than 15.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.703 Fleet Inspection Permittee Operating Requirements

- a) Vehicle Eligibility
 - 1) The permittee shall furnish the Agency with a list of all vehicles subject to inspection and for which fleet inspection is requested. The Agency shall

provide forms to the permittee for the purpose of establishing a fleet vehicle inventory and requesting vehicle inspection dates. The information shall be submitted to the Agency either on the forms supplied, or by electronic media in the format required by the Agency. When the Agency approves or denies the fleet vehicle inspection dates, it shall notify the fleet tester and, if approved, provide test forms to the fleet for submission to the Agency after testing.

- 2) The permittee shall notify the Agency in writing on forms provided by the Agency or by electronic media in the format required by the Agency in the event that any vehicles in the fleet inventory are sold or otherwise removed from fleet service. This notification shall be made within 30 days after the end of the month the vehicle is removed from fleet service.
- 3) Unless authorized by the Agency, vehicles contained in the fleet vehicle inventory pursuant to subsection (a) of this Section shall only be inspected at Private Official Inspection Stations. If authorization is given by the Agency for a vehicle contained in the fleet vehicle inventory to be tested or retested at an Official Inspection Station, any subsequent retests in that vehicle's testing cycle shall be conducted at an Official Inspection Station.

b) Inspection Frequency/Scheduling

All vehicles in the fleet inventory shall be inspected biennially.

Upon Agency approval, the Assigned Test Months and sticker or compliance certificate expiration dates become compliance deadlines for use in program enforcement. Agency approval shall be based on the availability of personnel to audit the performance of inspections and the ability of the fleet operators to meet the proposed schedule (this will be determined by the number of vehicles to be inspected and the number of inspectors available).

c) Inspection Reports and Stickers or Certificates

- 1) A Vehicle Inspection Report shall be submitted to the Agency for each vehicle that passes or fails an emissions inspection. Inspection results shall be reported on forms provided by the Agency. Inspection results shall be submitted to the Agency within 45 days after the date of inspection.
- 2) Following review and processing, the Agency shall validate inspection stickers or certificates for all vehicles complying with program requirements. If the Agency determines that a vehicle inspection report is deficient, a sticker or certificate will not be validated and it shall return the inspection report along with instructions to correct the identified deficiencies.

- 3) The permittee shall be responsible for the security and accountability of all vehicle inspection stickers or certificates issued to the permittee. In the event of lost or stolen stickers or certificates, the permittee shall notify the Agency in writing within 10 business days. Failure to report missing stickers or certificates shall be grounds for suspension or revocation of a Fleet Inspection Permit.
 - 4) Inspection stickers or certificates shall be displayed or possessed in accordance with Section 276.310.
 - 5) The permittee shall retain a legible copy of each completed Vehicle Inspection Report for a minimum of two years after the date of inspection. The reports shall be made available for Agency review upon request during normal business hours.
- d) Equipment, Maintenance and Calibration
- 1) All equipment used for emissions testing in Private Official Inspection Stations shall meet the functional requirements and performance criteria contained in Subparts E and F of this Part.
 - 2) The permittee shall keep records of all calibrations, leak checks, and other maintenance performed on emissions inspection equipment for two years. The records shall be retained at the fleet facility.

All records shall be kept on standardized forms provided by the Agency and shall be made available for Agency review upon request during normal business hours.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.704 Private Official Inspection Station Auditing and Surveillance

The Agency may, on an unscheduled and unannounced basis, during normal business hours, conduct an audit inspection of any Private Official Inspection Stations to determine if inspection equipment is properly operating and calibrated, to review vehicle inspection reports and maintenance records, and to check inspector proficiency. During the course of the audit inspection, the Agency representative may take one or more of the following actions:

- a) require that if any vehicle emissions test equipment calibration equipment, or related materials fails to perform as required, such item shall be removed from service until corrective action is taken;
- b) the fleet inspector may be required to perform an emissions inspection on a fleet vehicle. If no fleet vehicles are available, the fleet inspector may be required to

perform an emissions inspection on an Agency vehicle.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.705 Fleet Station Auditing and Surveillance (Renumbered)

(Source: Renumbered to Section 276.704 at 20 Ill. Reg. 8456, effective June 14, 1996)

SUBPART H: GRIEVANCE PROCEDURE

Section 276.801 General Requirements

Any person aggrieved by a decision regarding the failure of an emissions test or the denial of a waiver may petition the Agency which will thereupon investigate the matter. This grievance procedure is limited to filing a petition concerning a vehicle failing an emissions inspection or being denied a waiver; it shall not be used to grieve an action or decision of Agency or contractor personnel related to any activities other than a vehicle emissions test failure or waiver denial decision.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.802 Procedure for Filing Grievance

- a) Grievances shall be filed with the Agency within 30 days after the decision made by the Agency.
- b) Grievances shall be made in writing on forms provided by the Agency.
- c) Grievance forms and instructions shall be available at all Official Inspection Stations and by mail from the Agency.

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.803 Agency Investigation

- a) The Director of the Agency or the Director's designee shall appoint an Agency employee to investigate every grievance regarding the failure of an emissions test or the denial of a waiver submitted to the Agency in accordance with this Part.
- b) The Agency's investigation shall be concluded within 45 days after the receipt of the grievance form.
- c) Within the 45 day investigation period, the Agency shall issue written notification to the petitioner, and affected inspector or station indicating the Agency's determination as to the correctness or incorrectness of the decision which precipitated the grievance. In conducting the investigation, the Agency may

require the petitioner to present the vehicle for inspection by the Agency or its designated agent.

- d) The Agency's written notification shall include a statement of the facts relied upon and the legal and technical issues decided by the Agency in making its determinations.
- e) The Agency's written notification may also require that an employee of the Agency or its designee:
 - 1) issue an emissions inspection sticker or certificate;
 - 2) reinspect the vehicle;
 - 3) apply the standards that the Agency has determined to be applicable; or
 - 4) take any other action that the Agency deems to be appropriate.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.804 Review of Agency's Determination

The Agency's written determination shall be subject to review in the Circuit Court in accordance with the provisions of the Administrative Review Law [735 ILCS 5/Art. III].

(Source: Amended at 20 Ill. Reg. 8456, effective June 14, 1996)

SUBPART I: NOTICES

Section 276.901 General Requirements

The Agency shall send an Initial Emissions Inspection Notice and, when appropriate, a Warning Notice to owners of vehicles subject to inspection which shall state the Assigned Test Month of the initial emissions inspection and be accompanied by a clear statement from the Agency that, based on vehicle records, the vehicle is subject to inspection under the Vehicle Emissions Inspection Law of 1995. A form accompanying the explanation will be provided to the vehicle owner to allow for correction of any information relied upon by the Agency.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.902 Initial Emissions Inspection Notice

At least 15 days prior to the beginning of the Assigned Test Month, the Agency shall send an Initial Emissions Inspection Notice to the registered owner the vehicle requesting that the vehicle be tested during the Assigned Test Month. This Initial Emissions Inspection Notice shall include

the following information:

- a) an Initial Emissions Inspection Sticker or Certificate, or a Corrected or Interim Emissions Inspection Sticker or Certificate, if required;
- b) addresses and operating hours of Official Inspection Stations;
- c) a form or card to be returned to the Agency indicating the reasons the owner believes that the vehicle should not be subject to inspection pursuant to the Vehicle Emissions Inspection Law of 1995, or cannot comply by the expiration date;
- d) brief explanation of program; and
- e) instructions for vehicle inspections.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.903 Warning Notice

If a vehicle has not complied with the provisions of the Vehicle Emissions Inspection Law of 1995 within two months before the sticker or certificate expiration date, the Agency shall send a Warning Notice to the vehicle's owner at the registration address currently on file with the Agency. The Warning Notice shall include the following information:

- a) the addresses of Official Inspection Stations near the registration address of the vehicle;
- b) a form or card to be returned to the Agency indicating the reasons the owner believes that the vehicle should not be subject to inspection under the Vehicle Emissions Inspection Law of 1995, or cannot comply by its expiration date; and
- c) a statement of potential penalties for failure to comply with the requirements of the Vehicle Emissions Inspection Law of 1995, or this Part, as applicable.

(Source: Amended at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276.904 Second Warning Notice (Repealed)

(Source: Repealed at 20 Ill. Reg. 8456, effective June 14, 1996)

SUBPART J: RECIPROCITY WITH OTHER JURISDICTIONS

Section 276.1001 Requirements for Vehicles Registered in Affected Counties and Located in Other Jurisdictions Requiring Vehicle Emissions Inspection

Vehicles registered in the Affected Counties and located and being primarily operated in other jurisdictions requiring vehicle emission testing that will not be returning to an Affected County within 7 months after the vehicle's Assigned Test Month, or that are permanently located in such other jurisdiction, must be tested in that jurisdiction and comply with such jurisdiction's emissions testing requirements and the vehicle's registered owner must comply with the following requirements:

- a) upon written notification from the Agency to the vehicle's registered owner to have the vehicle inspected, the vehicle must be presented for inspection in the jurisdiction where the vehicle is located;
- b) when the vehicle passes the inspection, receives a waiver or exemption, or otherwise complies with the emissions inspection requirements of the jurisdiction in which the vehicle is located, the vehicle inspection report or other appropriate documentation must be forwarded to the Agency at the address stated on the vehicle emission inspection notice; and
- c) when the Agency receives the appropriate vehicle inspection report or other documentation, the vehicle inspection record will be updated to reflect compliance.

(Source: Added at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276.1002 Requirements for Vehicles Registered in Other Jurisdictions Requiring
Vehicle Emissions Inspection and Located in an Affected County

Vehicles which are registered in another jurisdiction which requires vehicle emissions testing, and which are located and being primarily used in an Affected County, may be tested at an Official Inspection Station in accordance with the following:

- a) upon a written request for an emissions inspection by the vehicle's registered owner to the Agency, the Agency shall request appropriate vehicle and owner information necessary for testing;
- b) if, upon review, the Agency determines the vehicle is eligible to receive an emissions inspection, the Agency shall notify the vehicle's registered owner (or one of the registered owners, if more than one) authorizing the vehicle to be tested at an Official Inspection Station; and
- c) after the vehicle has received an emissions inspection, the appropriate test results will be issued to the vehicle's registered owner for submission to the jurisdiction requiring emissions inspections and a sticker or certificate will be issued as appropriate.

(Source: Added at 20 Ill. Reg. 8456, effective June 14, 1996)

Section 276. Table A Transient Driving Cycle

Time (second)	Speed (mph)
0	0
1	0
2	0
3	0
4	0
5	3
6	5.9
7	8.6
8	11.5
9	14.3
10	16.9
11	17.3
12	18.1
13	20.7
14	21.7
15	22.4
16	22.5
17	22.1
18	21.5
19	20.9
20	20.4
21	19.8
22	17.0
23	14.9
24	14.9
25	15.2
26	15.5
27	16.0
28	17.1
29	19.1
30	21.1
31	22.7
32	22.9
33	22.7
34	22.6
35	21.3
36	19.0
37	17.1
38	15.8
39	15.8
40	17.7
41	19.8

42	21.6
43	23.2
44	24.2
45	24.6
46	24.9
47	25.0
48	25.7
49	26.1
50	26.7
51	27.5
52	28.6
53	29.3
54	29.8
55	30.1
56	30.4
57	30.7
58	30.7
59	30.5
60	30.4
61	30.3
62	30.4
63	30.8
64	30.4
65	29.9
66	29.5
67	29.8
68	30.3
69	30.7
70	30.9
71	31.0
72	30.9
73	30.4
74	29.8
75	29.9
76	30.2
77	30.7
78	31.2
79	31.8
80	32.2
81	32.4
82	32.2
83	31.7
84	28.6
85	25.1
86	21.6
87	18.1

88	14.6
89	11.1
90	7.6
91	4.1
92	0.6
93	0
94	0
95	0
96	0
97	0
98	3.3
99	6.6
100	9.9
101	13.2
102	16.5
103	19.8
104	22.2
105	24.3
106	25.8
107	26.4
108	25.7
109	25.1
110	24.7
111	25.2
112	25.4
113	27.2
114	26.5
115	24.0
116	22.7
117	19.4
118	17.7
119	17.2
120	18.1
121	18.6
122	20.0
123	20.7
124	21.7
125	22.4
126	22.5
127	22.1
128	21.5
129	20.9
130	20.4
131	19.8
132	17.0
133	17.1

134	15.8
135	15.8
136	17.7
137	19.8
138	21.6
139	22.2
140	24.5
141	24.7
142	24.8
143	24.7
144	24.6
145	24.6
146	25.1
147	25.6
148	25.7
149	25.4
150	24.9
151	25.0
152	25.4
153	26.0
154	26.0
155	25.7
156	26.1
157	26.7
158	27.3
159	30.5
160	33.5
161	36.2
162	37.3
163	39.3
164	40.5
165	42.1
166	43.5
167	45.1
168	46.0
169	46.8
170	47.5
171	47.5
172	47.3
173	47.2
174	47.2
175	47.4
176	47.9
177	48.5
178	49.1
179	49.5

180	50.0
181	50.6
182	51.0
183	51.5
184	52.2
185	53.2
186	54.1
187	54.6
188	54.9
189	55.0
190	54.9
191	54.6
192	54.6
193	54.8
194	55.1
195	55.5
196	55.7
197	56.1
198	56.3
199	56.6
200	56.7
201	56.7
202	56.3
203	56.0
204	55.0
205	53.4
206	51.6
207	51.8
208	52.1
209	52.5
210	53.0
211	53.5
212	54.0
213	54.9
214	55.4
215	55.6
216	56.0
217	56.0
218	55.8
219	55.2
220	54.5
221	53.6
222	52.5
223	51.5
224	50.5
225	48.0

226	44.5
227	41.0
228	37.5
229	34.0
230	30.5
231	27.0
232	23.5
233	20.0
234	16.5
235	13.0
236	9.5
237	6.0
238	2.5
239	0

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

Section 276. Table B Fast-Pass Speed Variation Limits Using Positive Kinetic Energy (PKE) Measurements

Cumulative PKE Limits

<u>Second</u>	<u>Lower</u>	<u>Upper</u>
30	4621	7359
31	4820	7664
32	4650	7380
33	4446	7045
34	4261	6739
35	4100	6474
36	3968	6254
37	3856	6068
38	3759	5905
39	3667	5750
40	3849	6026
41	4074	6367
42	4258	6643
43	4409	6867
44	4451	6920
45	4383	6802
46	4300	6663
47	4188	6478
48	4183	6460
49	4128	6364
50	4109	6323
51	4124	6336

52	4190	6426
53	4186	6410
54	4150	6343
55	4082	6228
56	4017	6119
57	3956	6015
58	3851	5846
59	3752	5686
60	3659	5535
61	3571	5393
62	3501	5278
63	3474	5230
64	3397	5104
65	3323	4985
66	3255	4874
67	3225	4821
68	3220	4806
69	3204	4774
70	3164	4707
71	3114	4624
72	3055	4529
73	2999	4438
74	2946	4352
75	2906	4285
76	2887	4251
77	2890	4248
78	2893	4245
79	2907	4258
80	2899	4239
81	2871	4191
82	2824	4116
83	2779	4044
84	2740	3980
85	2708	3926
86	2680	3880
87	2658	3842
88	2642	3811
89	2630	3787
90	2622	3770
91	2619	3760
92	2621	3756
93	2624	3754
94	2627	3751
95	2629	3749
96	2632	3746
97	2634	3743

98	2649	3757
99	2691	3811
100	2760	3902
101	2856	4031
102	2978	4196
103	3125	4396
104	3238	4547
105	3342	4685
106	3409	4772
107	3415	4771
108	3378	4712
109	3344	4656
110	3310	4602
111	3310	4594
112	3290	4558
113	3377	4672
114	3342	4616
115	3312	4566
116	3284	4520
117	3261	4481
118	3241	4445
119	3221	4411
120	3240	4429
121	3241	4423
122	3284	4474
123	3294	4481
124	3320	4509
125	3331	4516
126	3311	4481
127	3286	4440
128	3262	4401
129	3240	4364
130	3219	4327
131	3198	4293
132	3181	4263
133	3168	4239
134	3153	4211
135	3138	4184
136	3192	4248
137	3259	4330
138	3318	4402
139	3324	4403
140	3414	4515
141	3399	4487
142	3379	4453
143	3354	4413

144	3329	4373
145	3305	4334
146	3306	4329
147	3308	4323
148	3288	4291
149	3265	4253
150	3242	4216
151	3224	4186
152	3221	4175
153	3228	4177
154	3205	4141
155	3183	4105
156	3181	4095
157	3188	4098
158	3195	4101
159	3343	4283
160	3491	4465
161	3630	4636
162	3668	4676
163	3769	4796
164	3814	4847
165	3890	4934
166	3951	5004
167	4029	5094
168	4053	5116
169	4069	5127
170	4077	5129
171	4031	5063
172	3986	4998
173	3942	4935
174	3899	4874
175	3872	4832
176	3868	4818
177	3871	4814
178	3874	4810
179	3862	4787
180	3858	4774
181	3861	4771
182	3850	4749
183	3846	4736
184	3857	4742
185	3890	4774
186	3916	4798
187	3911	4784
188	3892	4753
189	3858	4704

190	3818	4647
191	3779	4592
192	3740	4538
193	3717	4502
194	3701	4475
195	3692	4458
196	3670	4423
197	3662	4406
198	3640	4373
199	3625	4348
200	3597	4307
201	3563	4259
202	3530	4213
203	3498	4167
204	3467	4123
205	3437	4082
206	3409	4042
207	3393	4016
208	3384	3998
209	3380	3987
210	3382	3984
211	3384	3980
212	3387	3976
213	3412	3999
214	3414	3995
215	3399	3970
216	3395	3959
217	3368	3921
218	3341	3884
219	3316	3848
220	3291	3813
221	3267	3778
222	3243	3746
223	3221	3714
224	3200	3683
225	3180	3654
226	3162	3627
227	3145	3603
228	3131	3580
229	3118	3560
230	3107	3541
231	3096	3525
232	3090	3510
233	3084	3496
234	3079	3487
235	3076	3478

236	3075	3470
237	3075	3465
238	3077	3461
239	3079	3458

(Source: Added at 22 Ill. Reg. 18867, effective September 28, 1998)

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