

ILLINOIS POLLUTION CONTROL BOARD  
February 26, 1986

IN THE MATTER OF: )  
 )  
STANDARDS FOR THE EMISSION OF ) R85-25  
HYDROCARBONS AND CARBON MONOXIDE )  
FROM GASOLINE POWERED MOTOR )  
VEHICLES (I/M Rules) )

ADOPTED RULE. FINAL ORDER.  
FINAL OPINION AND ORDER OF THE BOARD (by J.D. Dumelle):

This matter comes before the Board upon an October 11, 1985 proposal filed on behalf of the Illinois Environmental Protection Agency (Agency) for the adoption of regulations to establish standards for the emission of hydrocarbons and carbon monoxide from gasoline powered vehicles. Those regulations were proposed pursuant to Section 13A-105 of the Illinois Vehicle Emission Inspection Law, Ill. Rev. Stat., ch. 95 1/2, par. 13A-105, et seq. and amend 35 Ill. Adm. Code 240: Mobile Sources. Hearings were held on December 2, 1985 in Chicago and on December 11, 1985 in Sauget. The Agency offered an amendment to the proposal at the December 11, 1985 hearing which was filed with the Board on December 12, 1985. A comment was filed by the Chicago Department of Consumer Services (Chicago) on January 6, 1986 which offered alternative amendments. The Board adopted a proposed Opinion and Order on January 23, 1986, which allowed for public comments to be filed on or before February 20, 1986. Chicago filed a public comment on February 11, 1986. No other comments were filed.

This proceeding arises pursuant to P.A. 83-1477, the Vehicle Emissions Inspections Law. Under that legislation the Board was given 90 days from the date of filing of an Agency Inspection and Maintenance (I/M) proposal to adopt rules which

are no more restrictive than necessary to achieve the reductions in vehicle hydrocarbon and carbon monoxide emissions, as determined by the applicable vehicle emissions estimation model and guidelines developed by the United States Environmental Protection Agency, which are necessary for compliance with the Clean Air Act. The emission standards established by the Board for vehicles of model year 1981 or later promulgated shall be identical in substance to the emissions standards promulgated by the United States Environmental Protection Agency in connection with the emission performance warranty eligibility under Section 207(b) of the Clean Air Act. [Section 13A-105(a)].

Under this provision final Board rulemaking should have been completed by January 8, 1986. That date, however, has not been met despite expeditious handling, but the Agency has stated that the Board's failure to meet the statutory deadline should not have any effect on the date the program commences. (R. 34-35).\*

Under the Vehicle Emissions Inspections Law the Agency is required to establish an I/M program in specified portions of the Chicago and East St. Louis metropolitan areas. (R. 11). The I/M program consists of mandatory annual exhaust emission inspections of most motor vehicles in those areas from 1986 through 1991. (R. 11-12). The inspections will take place at 18 inspections stations set up and operated by Systems Control, Inc. (R. 12-13).

The Agency has adopted rules setting forth the overall program procedures at 35 Ill. Adm. Code 276. Prior to the commencement of inspections (mandated to be no later than July, 1986) each owner of an affected vehicle will be sent an emissions inspection sticker which will specify a date by which the vehicle must be inspected in order to obtain a renewal sticker. (R. 13). The inspection will consist of determining the hydrocarbon and carbon monoxide emissions of the vehicle to determine compliance with emissions standards for those pollutants. (R. 14). The establishment of those standards is the central concern of this proceeding. If the vehicle's emissions meet those standards, the owner will obtain a 1-year renewal sticker. (R. 15). The owner of a vehicle which does not meet the standards will be given a copy of the test results and a form to be completed by a repairman, and the vehicle must then be retested at a later date. (R. 15). If the vehicle again fails to meet the standards the owner may request a state inspector to issue a waiver for the vehicle which will be issued if all manufacturer's emissions warranty repairs have been made, there has been a proper low emissions tuneup, and for 1975 and later model year vehicles a catalytic converter and fuel inlet restrictor must be properly installed and functioning. (R. 16-17). If a waiver is not granted, the decision can be appealed or the owner may seek to remedy the problem and take a second retest. (R. 17). No further tests will be allowed thereafter. (R. 17). Anyone failing to comply with the inspection law may result in suspension of the owner's driving privileges or his vehicle registration, or both. (R. 18).

#### Section 240.102

Proposed amendments to Section 240.102 include the addition of definitions for "Idle Mode," "Heavy Duty Vehicle," "High Idle," "Light Duty Truck," "Light Duty Vehicle," "Model Year,"

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\* The transcripts of the two hearings both begin on page 1. To avoid confusion references to the December 2, 1985 hearing will be referred to as (R. \_\_\_ ) and references to the December 12, 1985 hearings will be RII. \_\_\_).

and "Two-Speed Idle Test." No question was raised concerning the definitions of "Idle Mode," "High Idle," "Model Year," or "Two-Speed Idle Test." However, some question did arise regarding the classification definitions of "Heavy Duty Vehicle," "Light Duty Truck," and "Light Duty Vehicle."

James Matheny, an environmental specialist with the Agency's vehicle inspection and maintenance program stated that "the intent of these definitions was to maintain consistency between the Illinois Vehicle Code and the definitions of passenger cars, first division vehicles and second division vehicles, and then with USEPA definitions for the establishment of passenger car versus truck emission standards." (R. 63-64). The proposed definitions are as follows:

"Heavy Duty Vehicle": a motor vehicle rated at more than 8000 pounds gross vehicle weight, which is designed for carrying more than ten persons or designed for the transportation of property, freight or cargo.

"Light Duty Truck": a motor vehicle rated at 8000 pounds gross vehicle weight or less, which is designed for carrying more than 10 persons or designed for the transportation of property, freight or cargo, or is a derivative of such a vehicle.

"Light Duty Vehicle": passenger cars designed to carry no more than 10 persons.

A question arose as to the necessity, or effect, of the language "designed for the transportation of property, freight or cargo" in the definition of Heavy Duty Vehicle. At one point Mr. Matheny was asked which classification would be appropriate for a vehicle which is not designed to carry more than ten persons but weighs more than 8000 pounds. The response was: "then it is a heavy duty vehicle. Or it should be a heavy duty vehicle." (R. 63). However, when asked why the classification is not simply by weight, he stated that there are certain vehicles "that do weigh more than 8000 pounds that are registered or are certified to meet passenger car emission standards, registered as passenger cars." (R. 65). This certification is apparently by USEPA. (R. 65).

The USEPA definition of Heavy Duty Vehicle is simply based on a gross vehicle weight of greater than 8500 pounds.\* (40 CFR

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\* No explanation is given for the weight limit under the USEPA definition (8500 pounds) and the proposed limit (8000 pounds). However, the Board presumes that the emission reduction analysis is premised on the 8000 pound limitation and will retain the figure.

86.082-2). The definition of Light Duty Truck is a vehicle of less than that weight which is designed to carry more than 12 passengers or for the transportation of property or is available with features allowing off-street use. (*id.*). A Light Duty vehicle is defined as a passenger car for fewer than 12 people. (*id.*). Under the Illinois Vehicle Code (IVC) vehicles are divided into two divisions. First Division vehicles are those motor vehicles designed for carrying 10 or fewer persons, and Second Division vehicles are those designed for carrying more than 10 persons, those designed for use as living quarters or for carrying property, freight or cargo, and school buses. (Ill. Rev. Stat. 1985, ch. 95 1/2, par. 1-217).

Both the USEPA and IVC systems appear to clearly classify all types of vehicles whereas the Agency's proposal, which combines elements of both, does not. Furthermore, complete consistency with both sets of definitions is clearly impossible. In order to provide clarity, and without making the definitions any more inconsistent than they presently are, the Board proposes to amend the definition of Heavy Duty Vehicle by deleting everything after the word "weight," thus making all vehicles of greater than 8000 pounds fall under this classification. Vehicles of under that weight would then be subdivided as Light Duty Vehicles or Light Duty Trucks based upon use. The Board does not expect this change to significantly affect the emissions reductions under the program and believes that what may be lost in that regard is more than offset by the enhanced clarity and enforceability of the rule as modified.

#### Section 240.104

The Agency has proposed to delete existing Section 240.104 in its entirety and to substitute new language since the present language is "meaningless and unenforceable, ... and is a throwback to a regulation of the now defunct Illinois Air Pollution Control Board." (RII. 6). The new language simply states that vehicles subject to inspection shall meet the emission standards of Section 240.124.\*

The Board agrees with the Agency that the existing language is inappropriate in that it refers to a program which has never been adopted and could cause confusion with the presently proposed I/M program. Some question was raised by Chicago as to whether deletion of this provision would result in the deletion of substantive provisions regarding tampering and opacity. However, the Board also agrees with the Agency that the deletion of this provision in no way impairs the prohibitions against air pollution control equipment tampering or against the presence of visible emissions from motor vehicle exhaust pipes. These prohibitions remain in 35 Ill. Adm. Code 240.103 and 240.121.

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\* The proposal contains a typographical error and refers to Section 204.124.

(RII. 5-7). The Board, therefore, proposes to amend Section 240.124 as proposed by the Agency.

#### Section 240.105

The Agency originally proposed the deletion of Section 240.105 regarding penalties in its entirety. However, at the December 11, 1985 hearing the Agency proposed substitute language. The language which is proposed to be deleted simply states that violations of the mobile source rules shall be subject to the penalty provisions of Section 42 of the Environmental Protection Act (Act). However, penalties imposed pursuant to the Vehicle Emissions Inspection Law, are subject to the provisions of Sections 13A-112 and 13A-113 of Chapter 95 1/2 of the Illinois Revised Statutes. Existing provisions remain constrained by Section 42 of the Act. Given that different provisions of Part 240 are subject to differing penalty provisions, the Board finds that it is appropriate to include a section as proposed by the Agency in its Petition to Amend which sets out these differing provisions.

#### Section 240.106

Present Section 240.106 sets out the requirements for determining violations of the opacity standards and equipment requirements. The Agency has proposed amendments which would add requirements for the determination of violations of the exhaust emissions standards for carbon monoxide and hydrocarbons. The substance of this proposed amendment was not questioned. However, as proposed, the new requirements would be contained in a "hanging paragraph," which the Board attempts to avoid for purposes of ease of reference and clarity. At hearing the Board suggested that the new provision be denominated as subsection (c). The Agency did not agree with that suggestion since subsection (c) does not fall appropriately under the introductory language of the section. The Board agrees. However, the Board proposes the amendment of this Section in such a way that both concerns are met. The substance, however, is intended to remain unchanged.

#### Section 240.124

Section 240.124 is at the heart of this proceeding and is also the most contested provision. This section establishes the vehicle exhaust emissions limitations for carbon monoxide and hydrocarbon for the various classifications of vehicles subject to the I/M program. USEPA requires that all federally mandated I/M programs be designed at a minimum to meet Reasonably Available Control Technology (RACT) standards. (R. 44). The Vehicle Emissions Inspections Law further requires that "emission standards be set no more restrictive than necessary to achieve the reductions ... necessary for compliance with the Clean Air Act." (R. 44-45). Thus, the Board is constrained to adopt

standards equivalent to RACT which has been determined to represent an emission reduction of 25% of hydrocarbons and 35% of carbon monoxide. (R. 45-46).

In order to meet these goals the Agency had to select the type of emission test to be used for 1981 and later model years (idle test or two-speed test), the failure rate (stringency), and finally the actual emission test standards which will result in meeting the required RACT emission reductions of 25% of hydrocarbons and 35% of carbon monoxides. The Agency utilized the MOBILE 2 motor vehicle emission estimation model to calculate both the required failure rate applicable to the pre-1981 vehicles and the appropriate test for the 1981 and later models.

Since 1981, motor vehicles have been required to be equipped with computer controlled engines and sophisticated emissions control systems. Consequently, the pre-1981 and the 1981 and later model vehicles require different considerations for the type of test and failure rate to achieve the required emission reductions. If an idle mode test were chosen for the later year models, a 30% failure rate for the pre-1981 vehicle would be needed to meet RACT requirements. (R. 48). However, since a two step, loaded mode test that simulates real driving conditions can more accurately identify those vehicles that are emitting pollution in excess of applicable design standards, by selecting the two step test only a 20% failure rate was needed for the pre-1981 vehicles due to the greater reductions for the newer vehicles. (R. 47). The Agency, therefore, chose the two-speed test which should result in overall program cost savings. (R. 50).

Having selected the type of test and failure rate, the Agency proposed the federal warranty standards as the emission standard, as required by statute, for the 1981 and later vehicles. Finally, the Agency proposed standards for the pre-1981 vehicles that would produce a nominal 20% failure rate which is needed to meet the overall emission reductions. The Agency attempted to set these standards in such a manner that each vehicle classification for which an emission standard was established would have the same 20% failure rate. This was done to establish equitable and uniform failure rates for all model years. (R. 51). In order to select these standards, the Agency utilized data from existing I/M programs in Wisconsin and Louisville, Kentucky, since those programs are relatively new, centralized, contractor-operated programs in nearby geographical areas, and, therefore, should be most analogous to Illinois' proposed program. (R. 54). The data from these programs was evaluated to determine the actual emission test standards by model year groupings that would correspond to the 20% failure rate.

USEPA and Agency witnesses contend that the standards proposed meet the statutory requirements, i.e. they are as stringent as necessary, but no more so, to meet federal

demands. The record is, further, devoid of any evidence to the contrary.

The only substantial issues are raised by the Chicago Department of Consumer Services. Joseph Seliber, P.E., on its behalf, argues, essentially, that the proposal is not stringent enough and that the program should include anti-tampering requirements. It reiterates this view in its February 11, 1986 comments. Mr. Seliber stated that the "cutpoints for 1979 and older cars detailed in Section 240.124 should be tightened up, particularly the carbon monoxide standard." (R. 83). He further stated that "it is desirable to provide more than the minimum emission reduction requirement, if it can be done at little extra cost" and that if Chicago's proposal "results in air which is cleaner than necessary, it will give us the opportunity to absorb more industrial growth." (R. 9). Instead of basing the proposed standards on a determination of what level would result in the necessary failure rate, Chicago based its standards "on the basis of knowledge of engine combustion principles, and the practical experience of supervising thousands of carburetor adjustments" during the City's voluntary inspection program in the late 1970's. (R. 104).

Mr. Seliber also believes that the I/M program ought to include a tampering inspection. In order to accomplish this the Department recommends a two-tier standard: those vehicles which meet the strictest standard would automatically get a certification sticker, regardless of whether the car had been tampered with; those which fail to meet the more lenient standard would not get a sticker regardless of tampering, and those in the middle would be inspected for tampering and would get a sticker only if there were no evidence of tampering. A tampering inspection would allegedly take a minute or less, would significantly reduce emissions beyond the Agency's proposal and thereby result in quicker attainment of the NAAQS.

Chicago believes that its proposal is consistent with the legislative mandate. The basis for that position is that "the requirements which the Illinois EPA is trying to follow are predicated on many assumptions which are difficult for them to prove" and that in determining the establishment of minimum standards (i.e. "no more restrictive than necessary" under the Vehicle Emissions Inspection Law), minimum standard should be defined as "that standard which is likely to achieve the goal at no significant extra cost." (R. 106). In short, Chicago urges that a safety factor be included in establishing the emissions standards and by including an anti-tampering inspection.

In its February 11, 1986 comments, Chicago takes this argument one step further. It contends that the Board must adopt these more stringent measures since Section 13A-105(a) of the Vehicle Emissions Inspection Law requires compliance with the Clean Air Act and Section 172 of that Act requires attainment of the NAAQS "as expeditiously as practicable." Since these more

stringent standards are practicable, the argument concludes, they must be adopted.

However, the Board gives weight to the testimony of the USEPA witness regarding the federal acceptability of the proposed rules. Furthermore, the Board finds that the legislation does not allow the Board to adopt anti-tampering rules or more stringent standards in this proceeding. The I/M, fast-track, legislation appears to be clearly limited to establishing emission standards and not tampering prohibitions. Furthermore, I/M contracts have been signed which do not include inspections for tampering and such a change would undoubtedly set back the program which is already falling behind schedule. Thus, while there is considerable merit to this proposal, the legal and practical impediments are too great to be overcome in this proceeding. Any such action would require a new rulemaking. The Board, therefore, proposes Section 240.124 as proposed by the Agency.

#### Section 240.125

Section 240.125 simply requires that compliance with the emission limitations shall be determined using the idle mode for all vehicles and that 1981 and later light duty vehicles and light duty trucks shall also be tested at high idle. The emission limitations of Section 240.124 are dependent upon the use of this testing mechanism and no one has questioned the propriety of the rule. The Board, therefore, proposes this section as proposed by the Agency.

#### ORDER

The Board hereby proposed the following amendments to 35 Ill. Adm. Code, Subtitle B: Air Pollution, Chapter 1, Pollution Control Board, Part 240: Mobile Sources. (New language is underlined. Deleted language is lined through.)

#### Section 240.102 Definitions:

All terms which appear in this Part have the definitions specified in this Part and 35 Ill. Adm. Code 201 and 211.

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

"Heavy Duty Vehicle": a motor vehicle rated at more than 8000 pounds gross vehicle weight.

"High Idle": that portion of a two-speed idle test conducted with the engine operating at a speed of approximately 2500 RPM.



"Light Duty Truck": a motor vehicle rated at 8000 pounds gross vehicle weight or less, which is designed for carrying more than 10 persons or designed for the transportation of property, freight or cargo, or is a derivative of such a vehicle.

"Light Duty Vehicle": passenger cars designed to carry not more than 10 persons.

"Model Year": the year of manufacture of a motor vehicle based upon the annual production period as designated by the manufacturer and indicated on the title and registration of the vehicle. If the manufacturer does not designate a production period for the vehicle, then "model year" means the calendar year of manufacture.

"Two-Speed Idle Test": a vehicle emission test procedure consisting of the measurements of exhaust emission in high idle and idle modes.

Section 240.104 Inspection:

- a) when the Board has issued rules and regulations requiring the maintenance of features or equipment in or on motor vehicles for the purpose of controlling emissions therefrom, no motor vehicle shall be issued an inspection sticker as required pursuant to 35 Ill. Adm. Code, Subtitle B, Chapter I (Chapter), unless all such required features or equipment have been inspected in accordance with the standards, testing techniques and instructions furnished by the Board and has been found to meet these standards.
- b) Motor vehicle engines, having the manufacturers' air pollution control systems installed, shall comply with Section 240.121(a).
- e) Motor vehicle engines, not having the manufacturers' air pollution control systems installed, shall be maintained to comply with Section 240.121(a).

All motor vehicles subject to inspection pursuant to Section 13A-104 of the Illinois Vehicle Emissions Inspection Law (Ill. Rev. Stat., 1985, Ch. 95 1/2, par. 13A-104) shall comply with the exhaust emission standards for carbon monoxide and hydrocarbons set forth at Section 240.124 of this Part.

Section 240.105 Penalties:

- a) Any violations of any provisions of this Chapter Sections 240.103, 240.121, 240.122, and 240.123 shall be subject to the penalties as set forth in Section 42 of the Act (Ill. Rev. Stat. 1981, ch. 111 1/2, par. 1042 (1985)).

- b) Any violations of any provisions of Sections 240.104 and 240.124 shall be subject to the penalties as set forth in Sections 13A-112 and 13A-113 of the Vehicle Emissions Inspection Law (Ill. Rev. Stat., ch. 95 1/2, par. 13A-112, 13A-113 (1985)).

Section 240.106 Determination of Violation:

- a) Any violation of any provisions Sections 240.103, 240.121, 240.122, and 240.123 of this Part shall be determined: a) By visual observation; or b) By a test procedure employing an opacity measurement system as qualified by 35 Ill. Adm. Code 201, Subpart J.
- b) Any violations of Section 240.124 shall be determined in accordance with test procedures adopted by the Agency.

Section 240.124 Vehicle Exhaust Emission Standards:

- a) Exhaust emissions from light duty vehicles shall not exceed the following limitations:

<u>Model Year</u>	<u>Carbon Monoxide (%)</u>	<u>Hydrocarbons as Hexane (ppm)</u>
<u>1968 - 1971</u>	<u>9.0</u>	<u>900</u>
<u>1972 - 1974</u>	<u>8.0</u>	<u>800</u>
<u>1975 - 1977</u>	<u>7.0</u>	<u>700</u>
<u>1978 - 1979</u>	<u>6.0</u>	<u>600</u>
<u>1980</u>	<u>3.0</u>	<u>300</u>
<u>1981 and later</u>	<u>1.2</u>	<u>220</u>

- b) Exhaust emission from light duty trucks shall not exceed the following limitations:

<u>Model Year</u>	<u>Carbon Monoxide (%)</u>	<u>Hydrocarbons as Hexane (ppm)</u>
<u>1968 - 1971</u>	<u>9.0</u>	<u>900</u>
<u>1972 - 1974</u>	<u>8.0</u>	<u>800</u>
<u>1975 - 1978</u>	<u>7.0</u>	<u>700</u>
<u>1979 - 1980</u>	<u>6.0</u>	<u>600</u>
<u>1981 - 1983</u>	<u>3.0</u>	<u>300</u>
<u>1984 and later</u>	<u>1.2</u>	<u>220</u>

c) Exhaust emissions from heavy duty vehicles shall not exceed the following limitations:

<u>Model Year</u>	<u>Carbon Monoxide (%)</u>	<u>Hydrocarbons as Hexane (ppm)</u>
<u>1968 - 1971</u>	<u>9.5</u>	<u>1500</u>
<u>1972 - 1978</u>	<u>9.0</u>	<u>900</u>
<u>1979 - 1984</u>	<u>7.0</u>	<u>700</u>
<u>1985 and later</u>	<u>3.0</u>	<u>300</u>

Section 240.125 Compliance Determination:

For purposes of determining compliance with Section 240.124 of this Part, all vehicles shall be inspected while operating in the idle mode, and all 1981 and later model year light duty vehicles and light duty trucks shall be inspected at high idle during a two-speed idle test.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 26th day of February, 1986 by a vote of 7-0.

Dorothy M. Gunn  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board