

ILLINOIS POLLUTION CONTROL BOARD
July 19, 1990

IN THE MATTER OF:)
)
DIESEL VEHICLE EXHAUST) R90-20
OPACITY LIMITS) (Rulemaking)
)

INQUIRY HEARINGS.

ORDER OF THE BOARD (by J.D. Dumelle):

A common citizen complaint is that of Diesel-powered trucks and buses emitting dense black plumes of smoke in crowded city streets or on highways. These plumes are smelly, soiling, and visually offending. The IEPA Vehicle Emissions Program manager stated in February, 1990 that they receive from 600 to 900 complaints a month on this subject.

Illinois has an existing Diesel engine exhaust opacity rule but it applies only to pre-1970 engines. This rule, Section 240.122(a-d), was probably a "carryover" rule enacted by the former Illinois Air Pollution Board and retained by this Board at the time of the transition on July 1, 1970. A rulemaking for Diesel locomotives was enacted by the Board on January 31, 1974 (R723).

The U.S. Environmental Protection Agency in a leaflet titled "Control of Emissions from Buses and Trucks" dated October, 1988 states:

Diesel particulate matter is the small, solid and liquid particles emitted by a diesel engine. The size and chemical composition of diesel particulate matter are the chief reasons for concern about the effects on human health. The small size increases the likelihood that the particles will reach and lodge in the deepest and most sensitive areas of the human lungs.

Particulate matter that accumulates in lungs can lead to severe lung problems and increased susceptibility to respiratory infection, such as pneumonia, and aggravation of acute and chronic bronchitis and asthma.

Polynuclear aromatic hydrocarbons are hundreds of organic chemical compounds emitted by diesel engines. These compounds attach to

diesel engine particulates and are carried into the lungs, where they can remain for significant periods. Some polynuclear aromatic hydrocarbons are known to cause cancer in animals.

The USEPA on July 31, 1987 promulgated particulate rules for material under 10 microns in size. These are the same size as the particles contained in Diesel exhaust. Illinois has not yet enacted its own "particulate matter-10" (PM-10) rules but must do so soon.

A paper by David T. Jones of the South Coast Air Quality Management District dated May, 1989 states:

In 1985 heavy-duty diesel engines contributed 18.17 tons per day of PM-10 particulates in the South Coast Air Basin which amounted to 30% of the mobile source contribution.

The Board has collected the existing Diesel vehicle opacity regulations from 6 States and three cities. They are as follows:

<u>GOVERNMENT</u>	<u>OPACITY LIMIT</u>	<u>TIME ALLOWANCE</u>
1. Arizona	20%	10 seconds
2. Chicago	30%	See Note
3. Colorado	40%	5 seconds
4. Florida	20%	5 seconds
5. Illinois	30%	15 seconds
6. Los Angeles (SCAQMD)	20%	10 seconds
7. Louisville, KY	10%	None
8. New Jersey	20%	Not known
9. Wisconsin	20%	Not known

NOTES:

No. 2. Chicago An exception of 40% opacity for 4 minutes out of 30 minute period may be applicable.

No. 4 Florida The data listed are for dynamometer testing. Diesel-powered motor

vehicles in cruise mode (constant speed) or idling shall have no visible emissions after 5 seconds.

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| No. 5 | Illinois | Applies only to pre-1970 diesel engines. |
| No. 6 | Los Angeles (SCAQMD) | Applies to 1971 and later vehicles. |
| No. 7 | Louisville, KY | Idle mode. |
| No. 8 | New Jersey | Diesel-powered autobuses must meet a 12% opacity standard. |

In analyzing the above rules it would appear that newer rules (omitting Chicago's and Illinois') are predominantly at 20% opacity limits. Colorado is at 40% and is an exception. The Louisville limit of 10% is for vehicles in an idle mode, not moving.

The Board will conduct inquiry hearings on a possible Diesel vehicle exhaust opacity limit but excluding Diesel locomotives. Comments and testimony are requested on the following topics.

What should an opacity limit be? Is 20% a limit that is achievable with reasonable engine maintenance?

Should a time exemption be given? If so, for what length of time?

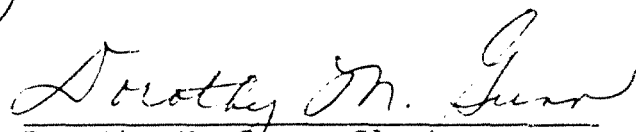
What is the contribution in tons per day of all Diesel vehicles (excluding diesel locomotives) to the PM-10 loading of the Chicago and Metro East areas? How much of this might be controlled by enforcement of an opacity standard?

Are there human allergic or asthmatic reactions to Diesel particulate matter? If so, are they severe?

Are there any risk assessments for any types of illness as relates to Diesel vehicle exhaust?

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, do hereby certify the above Order was adopted on the 19th day of July, 1990 by a vote of 5-0.


Dorothy M. Gunn, Clerk
Illinois Pollution Control Board