ORDER OF THE STATE OF WISCONSIN
NATURAL RESOURCES BOARD
AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **amend** NR 485.04 Table 1 (4) (title) and NR 485.06(2); and to **create** NR 485.04 Table 1 (5) relating to motor vehicle emission limitations and tampering with motor vehicle air pollution control equipment.

AM-03-05

Analysis Prepared by the Department of Natural Resources

1. Statutes interpreted: ss. 285.11(6) and 285.30(2) and (6)(b), Stats. The State Implementation Plan developed under s. 285.11(6), Stats., is revised.

2. Statutory authority: ss. 227.11(2)(a), 285.11(1) and 285.30(2) and (6)(b), Stats.

3. Explanation of agency authority: Section 227.11(2)(a), Stats., gives agencies general rulemaking authority. Section 285.11(1), Stats., gives the Department authority to promulgate rules consistent with ch. 285, Stats. Section 285.30(2), Stats., provides authority for the Department to adopt and revise emission limitations for motor vehicles. Section 285.30(6)(b), Stats., prohibits tampering with air pollution control equipment, but provides authority for the Department to promulgate rules which permit exceptions to this prohibition.

4. Related statute or rule: The related statutes are ss. 110.20, 110.21 and 285.30, Stats. These sections specify requirements for motor vehicle emission inspections in Wisconsin. The first two sections apply to the Department of Transportation and the third section applies to the Department of Natural Resources. A related rule is ch. Trans 131, Wis. Adm. Code. This chapter establishes the Department of Transportation's administrative interpretation of s. 110.20, Stats., relating to a motor vehicle emissions inspection program.

5. Plain language analysis:
The proposed rule will make three general changes to the motor vehicle emission limitations in Table 1 of s. NR 485.04, Wis. Adm. Code. These emission limitations are pass/fail standards for the state's motor vehicle inspection and maintenance (I/M) program. This program originally started during 1984 and is currently operating in the seven southeastern Wisconsin counties of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha. To meet requirements in the federal 1990 Clean Air Act Amendments, enhanced test procedures (provided in ch. Trans 131, Wis. Adm. Code) and emission limitations associated with those procedures (provided in ch. NR 485, Wis. Adm. Code) took effect during December 1995.

It should be noted that the emission limitations in Table 1 of s. NR 485.04, Wis. Adm. Code, are no

longer used as pass/fail standards for most model year 1996 and newer light-duty vehicles and light-duty trucks and for most model year 2005 and newer heavy-duty vehicles. Starting July 2001, most of these vehicles have been inspected by a check of the vehicle's computerized on-board diagnostic (OBD) system instead of a measurement of the vehicle's tailpipe emissions.

The three general changes to the emission limitations in the proposed rule are:

a. Relax the emission limitations for oxides of nitrogen (NOx) for some groups of trucks and older cars to account for some deterioration of the emission control systems for these vehicles.
b. Establish new emission limitations for model year 2005 and newer heavy-duty vehicles to account for the new federal certification standards required for these vehicles.
c. Simplify the emission limitations for some categories of model year 1994-1996 vehicles so that the lane inspector would not need to decode data under the vehicle's hood in order to determine the proper limitations.

The specific changes to the emission limitations are as follows:

a. Light-Duty Vehicles

i. Model years 1994-1995: Emission limitations are simplified so that all vehicles in this category will have emission limitations of 0.80 grams per mile (gpm) for hydrocarbons (HC), 15.0 gpm for carbon monoxide (CO) and 2.0 gpm for NOx. [This change has already been authorized by written approval from the Department of Natural Resources to the Department of Transportation, as allowed under the current rule. Without this written approval, the current rule would have the above limitations apply only to those vehicles in this category which are not certified to meet federal "Tier 1" emission standards, while the vehicles in this category which are certified to meet federal "Tier 1" emission standards would have emission limitations of 0.60 gpm HC, 10.0 gpm CO and 1.5 gpm NOx.]

ii. Model years 1977-1980: Emission limitation for NOx is changed from 4.0 gpm to 5.0 gpm.

b. Light-Duty Trucks with Gross Vehicle Weight Rating (GVWR) of 6,000 pounds of less

i. Model Years 1994-1995: Emission limitations are simplified so that all vehicles in this category will have emission limitations of 1.60 gpm for HC and 40.0 gpm for CO. The emission limitations for NOx will be 2.5 gpm (for vehicles with Loaded Vehicle Weight [LVW] of 3,750 pounds or less) or 3.5 gpm (for vehicles with LVW of greater than 3,750 pounds). [Most of this change has already been authorized by written approval from the Department of Natural Resources to the Department of Transportation, as allowed under the current rule. Without this written approval, the current rule would have the limitations of 1.60 gpm HC, 40.0 gpm CO and 2.5 gpm NOx apply only to those

vehicles in this category which are not certified to meet federal "Tier 1" emission standards, while the vehicles in this category which are certified to meet federal "Tier 1" emission standards would have emission limitations of either 0.60 gpm HC, 10.0 gpm CO and 1.5 gpm NOx (for vehicles with LVW of 3,750 pounds or less) or 0.80 gpm HC, 13.0 gpm CO and 1.8 gpm NOx (for vehicles with LVW of greater than 3,750 pounds). The only part of this change that has not been already applied is the NOx emission limitation of 3.5 gpm for vehicles with LVW of greater than 3,750 pounds. Currently the Wisconsin I/M program uses a NOx emission limitation for these vehicles of 2.5 gpm.]

ii. Model years 1988-1993: For vehicles with Loaded Vehicle Weight greater than 3,750 pounds, the emission limitation for NOx is changed from 2.5 to 3.5 gpm.

iii. Model years 1979-1987: Emission limitation for NOx is changed from 4.5 gpm to 5.5 gpm.

c. Light-Duty Trucks with GVWR of 6,001 to 8,500 pounds and Heavy-Duty Vehicles with GVWR of 8,500 pounds or less

i. Model year 1996: Emission limitations are simplified so that all vehicles in this category will have emission limitations of 1.60 gpm for HC, 40.0 gpm for CO and 3.5 gpm for NOx. [This change has already been authorized by written approval from the Department of Natural Resources to the Department of Transportation, as allowed under the current rule. Without this written approval, the current rule would have the above limitations apply only to those vehicles in this category which are not certified to meet federal "Tier 1" emission standards, while the vehicles in this category which are certified to meet federal "Tier 1" emission standards would have emission limitations of either 0.80 gpm HC, 13.0 gpm CO and 1.8 gpm NOx (for vehicles with Adjusted Loaded Vehicle Weight [ALVW] of 5,750 pounds or less) or 0.80 gpm HC, 15.0 gpm CO and 2.0 gpm NOx (for vehicles with ALVW of greater than 5,750 pounds).]

ii. Model years 1988-1989: Emission limitation for NOx is changed from 3.5 gpm to 5.5 gpm.

iii. Model years 1979-1987: Emission limitation for NOx is changed from 4.5 gpm to 5.5 gpm.

d. Heavy-Duty Vehicles with GVWR of 8,500 to 10,000 pounds

i. Model years 2005 and newer: Emission limitation for HC is changed from 2.00 gpm to 1.00 gpm and emission limitation for NOx is changed from 4.0 gpm to 3.0 gpm.

ii. Model years 1998-2004: Emission limitation for NOx is changed from 4.0 gpm to 7.0

gpm.

iii. Model years 1991-1997: Emission limitation for NOx is changed from 5.0 gpm to 9.0 gpm.

iv. Model years 1987-1990: Emission limitation for NOx is changed from 6.0 gpm to 11.0 gpm.

v. Model years 1979-1986: Emission limitation for NOx is changed from 8.0 gpm to 16.0 gpm.

vi. Model years 1970-1978: Emission limitation for NOx is changed from 10.0 gpm to 20.0 gpm.

vii. Model years 1968-1969: Emission limitation for NOx is changed from 15.0 gpm to 30.0 gpm.

e. Heavy-Duty Vehicles with GVWR greater than 10,000 pounds

i. Model years 2005 and newer: Emission limitation for HC is changed from 3.50 gpm to 1.00 gpm and emission limitation for NOx is changed from 7.0 gpm to 3.0 gpm.

The proposed rule will also revise the catalytic converter replacement provisions in s. NR 485.06(2), Wis. Adm. Code, to make them consistent with the current federal emission warranty provisions in 40 CFR part 85. These federal provisions provide an 8 year or 80,000 mile (whichever comes first) warranty for the catalytic converter for model year 1995 and newer vehicles. For older vehicles, the federal warranty for the catalytic converter lasts for 5 years or 50,000 miles (whichever comes first). Currently s. NR 485.06(2), Wis. Adm. Code., allows a person to replace the catalytic converter on a vehicle older than 5 model years or with more than 50,000 miles on the odometer with aftermarket equipment certified by the U. S. Environmental Protection Agency (EPA). The proposed revision will allow that type of replacement for all model year 1994 and older vehicles (since they all are older than 5 model years) and also allow that type of replacement for those model year 1995 and newer vehicles that are older than 8 model years or have more than 80,000 miles on the odometer. This change thereby will prevent one from replacing the catalytic converter on a model year 1995 and newer vehicle while the converter is still under the federal warranty.

6. Summary of, and comparison with, existing or proposed federal regulation:
Three federal regulations address activities to be regulated by the proposed rule: (1) the federal motor vehicle certification standards in 40 CFR part 86; (2) the low-enhanced I/M performance standard in 40 CFR 51.351; and (3) the federal emission warranty provisions in 40 CFR part 85.

40 CFR part 86 provides emission standards for new motor vehicles. Motor vehicles must be certified by the EPA to comply with these standards before they can be sold in the United States. These standards are

more stringent than those in the proposed rule. In fact, a key reason for proposing this rule is that staff from the Wisconsin Departments of Natural Resources and Transportation and the I/M program contractor found some of the current emission limitations in ch. NR 485 to be too close to the federal certification standards, thus providing inadequate allowance for deterioration due to age and mileage.

40 CFR 51.351(f) requires that "Enhanced I/M programs shall be designed and implemented to meet or exceed a minimum performance standard, which is expressed as emission levels in area-wide average grams per mile (gpm), achieved from highway mobile sources as a result of the program." The Wisconsin I/M program is required to meet the "Alternate Low Enhanced I/M Performance Standard" in 40 CFR 51.351(g). Wisconsin's I/M program currently meets this performance standard and will continue to meet this standard under the proposed rule revisions.

40 CFR part 85 includes warranty provisions for motor vehicle emission control equipment. As mentioned in the preceding section, the proposed rule will revise the minimum age and mileage levels under which the catalytic converter may be replaced to the age and mileage levels to which the original catalytic converter is under warranty under 40 CFR part 85.

An important consideration related to a comparison with federal regulations is that the proposed rule meets the requirements in s. 285.11(6), Stats. This section requires that rules or control strategies submitted to the EPA under the federal Clean Air Act for the control of atmospheric ozone shall ***conform*** with the federal Clean Air Act unless specified conditions are met. This proposed rule does conform with the federal Clean Air Act. It conforms because the proposed emission limitations are not more stringent than the federal emission standards for new motor vehicles in 40 CFR part 86, but are stringent enough to enable the Wisconsin I/M program to meet the low-enhanced I/M performance standard in 40 CFR 51.351. (Both the federal emission standards in 40 CFR part 86 and the low-enhanced I/M performance standard in 40 CFR 51.351 were promulgated under the federal Clean Air Act.)

7. Comparison with rules in adjacent states:

The only state adjacent to Wisconsin with a vehicle inspection program is Illinois. The motor vehicle emission limitations in Illinois are similar to those in Wisconsin for hydrocarbons (HC) and carbon monoxide (CO). For most vehicle categories the HC and CO emission limitations for Wisconsin and Illinois are the same, but the Illinois emission limitations are more stringent than Wisconsin's for some of the model year 1996 light-duty trucks, while the Wisconsin emission limitations are more stringent for the model year 1987 cars and the model year 1981-1987 light-duty trucks. However, overall the Wisconsin emission limitations, both current and those proposed in this rule, are more stringent than Illinois's, since Wisconsin's I/M program fails vehicles for high NOx emissions while Illinois's I/M program does not. The U.S. Environmental Protection Agency (EPA) does not require that the Illinois I/M program fail vehicles for high NOx emissions, since EPA has granted the one-hour ozone nonattainment areas in the Lake Michigan region a waiver, under section 182(f) of the federal clean air act, from certain NOx requirements. While this "NOx waiver" also covers the Wisconsin I/M program area, Wisconsin elected to enforce NOx cutpoints starting in 2001, since new modeling evaluations have shown that the region's ozone problem could be reduced through a regional NOx control effort. If the

Illinois I/M program area loses this "NOx waiver" for their upcoming state implementation plan (SIP) for attaining the eight-hour ozone standard, the Illinois I/M program may need to fail vehicles for high NOx emissions and the emissions limitations for Illinois and Wisconsin would be similar in stringency.

Wisconsin's motor vehicle emission limitations, both current and those proposed in this rule, are neither the most lenient nor the most stringent among the I/M programs in the United States. As discussed above, the Illinois emission limitations are currently more lenient than Wisconsin's. However, the emission limitations for the State of Missouri I/M program are overall more stringent than Wisconsin's. (Both states fail for HC, CO and NOx and have the same emission limitations for model years 1987 and newer. However, the Missouri emission limitations are more stringent than Wisconsin's for model years 1981-1986.)

8. Summary of factual data and analytical methodologies:
The proposed changes to the emission limitations are based on a cooperative analysis of the current emission limitations by staff of the Departments of Natural Resources and Transportation and the I/M program contractor. The recommended changes to the emission limitations resulting from this analysis are included in the report: An Evaluation of Wisconsin's Vehicle Inspection Program, May 2003, prepared for the Wisconsin Legislature by the Departments of Natural Resources and Transportation. The changes to the emission limitations in this proposed rule are the same as those recommended in the above report.

The main factual data and information utilized for developing this proposed rule were: emission limitations for enhanced I/M programs recommended in U.S. EPA guidance; the federal motor vehicle certification standards in 40 CFR part 86; statistics of vehicles failing the I/M inspection by vehicle category; and information from automotive technicians on the ability of certain categories of vehicles to be repaired to meet the current emission limitations.

The main analytical methodology used in determining the revised emission limitations was the process of converting the federal motor vehicle certification standards to the same units used for the emission limitations in Table 1 of s. NR 485.04, Wis. Adm. Code, and then setting the revised emission limitations to levels sufficiently greater than the federal standards to account for some deterioration of the emission control systems.

9. Analysis and supporting documents used to determine effect on small business or in preparation of economic impact report: The proposed rule is not expected to have a significant effect on small businesses nor have a significant economic effect on any entity. The main impact of the proposed rule is that slightly fewer vehicles will fail the vehicle emission inspection. The Department estimates that about 500 fewer vehicles will fail per year, which is expected to be less than one percent of the total initial inspection failures (79,000 vehicles failed the initial inspection during 2004).

10. Effect on small business: The proposed rule is not expected to have a significant effect on small businesses. Small businesses that own vehicles subject to the I/M program have been and will continue to be affected by the I/M program in the same way individual vehicle owners are affected. The proposed rule

will not impose any new requirements on small businesses.

11. Agency contact person: Christopher Bovee; phone: (608) 266-5542; email: christopher.bovee@dnr.state.wi.us

---

SECTION 1. NR 485.04 Table 1 (4)(title) is amended to read:

NR 485.04 Table 1 (4)(title) MOTOR VEHICLES INSPECTED ~~ON AND AFTER~~ BETWEEN DECEMBER 1, 1998 AND THE DAY PRIOR TO THE EFFECTIVE DATE OF THIS SECTION....[revisor inserts date].

SECTION 2. NR 485.04 Table 1 (5) is created to read:

NR 485.04 Table 1 (5) MOTOR VEHICLES INSPECTED ON AND AFTER THE EFFECTIVE DATE OF THIS SECTION....[revisor inserts date].

(a) *Light-Duty Vehicles.*

Model Years	Hydrocarbons (grams/mile)		Carbon Monoxide (grams/mile)		Oxides of Nitrogen (grams/mile)
	Composite	Phase 2	Composite	Phase 2	Composite
1996 and newer	0.60	0.40	10.0	8.0	1.5
1987-1995	0.80	0.50	15.0	12.0	2.0
1983-1986	2.00	1.25	30.0	24.0	3.0
1981-1982	2.00	1.25	60.0	48.0	3.0
1980	2.00	1.25	60.0	48.0	5.0
1977-1979	3.00	2.00	65.0	52.0	5.0
1975-1976	3.00	2.00	65.0	52.0	6.0
1973-1974	7.00	4.50	120	96.0	6.0
1968-1972	7.00	4.50	120	96.0	7.0

(b) *Light-Duty Trucks with GVWR of 6,000 pounds or less.*

Model Years	Hydrocarbons (grams/mile)		Carbon Monoxide (grams/mile)		Oxides of Nitrogen (grams/mile)
	Composite	Phase 2	Composite	Phase 2	Composite
1996 and newer					
(≤3750 lbs LVW)	0.60	0.40	10.0	8.0	1.5
(>3750 lbs LVW)	0.80	0.50	13.0	10.0	1.8
1988-1995					
(≤3750 lbs LVW)	1.60	1.00	40.0	32.0	2.5
(>3750 lbs LVW)	1.60	1.00	40.0	32.0	3.5
1987	1.60	1.00	40.0	32.0	5.5
1984-1986	3.20	2.00	70.0	56.0	5.5
1979-1983	3.40	2.00	70.0	56.0	5.5
1975-1978	4.00	2.50	80.0	64.0	6.0
1973-1974	7.00	4.50	120	96.0	6.0
1968-1972	7.00	4.50	120	96.0	7.0

(c) *Light-Duty Trucks with GVWR of 6,001 to 8,500 pounds and Heavy-Duty Vehicles with GVWR of 8,500 pounds or less.*

Model Years	Hydrocarbons (grams/mile)		Carbon Monoxide (grams/mile)		Oxides of Nitrogen (grams/mile)
	Composite	Phase 2	Composite	Phase 2	Composite
1997 and newer					
(≤5750 lbs ALVW)	0.80	0.50	13.0	10.0	1.8
(>5750 lbs ALVW)	0.80	0.50	15.0	12.0	2.0
1990-1996	1.60	1.00	40.0	32.0	3.5
1987-1989	1.60	1.00	40.0	32.0	5.5
1984-1986	3.20	2.00	70.0	56.0	5.5
1979-1983	3.40	2.00	70.0	56.0	5.5
1975-1978	4.00	2.50	80.0	64.0	6.0
1973-1974	7.00	4.50	120	96.0	6.0
1968-1972	7.00	4.50	120	96.0	7.0

(d) *Heavy-Duty Vehicles with GVWR of 8,501 to 10,000 pounds.*

Model Years	Hydrocarbons (grams/mile)		Carbon Monoxide (grams/mile)		Oxides of Nitrogen (grams/mile)
	Composite	Phase 2	Composite	Phase 2	Composite
2005 and newer	1.00	0.63	30.0	24.0	3.0
1998-2004	2.00	1.25	30.0	24.0	7.0
1991-1997	2.00	1.25	40.0	32.0	9.0
1987-1990	2.00	1.25	40.0	32.0	11.0
1985-1986	5.00	3.10	80.0	64.0	16.0
1979-1984	7.50	5.00	100	80.0	16.0
1974-1978	10.0	6.00	150	120	20.0
1970-1973	10.0	6.00	175	140	20.0
1968-1969	20.0	12.5	200	160	30.0

(e) *Heavy-Duty Vehicles with GVWR greater than 10,000 pounds.*

Model Years	Hydrocarbons (grams/mile)		Carbon Monoxide (grams/mile)		Oxides of Nitrogen (grams/mile)
	Composite	Phase 2	Composite	Phase 2	Composite
2005 and newer	1.00	0.63	60.0	48.0	3.0
1998-2004	3.50	2.00	60.0	48.0	7.0
1991-1997	3.50	2.00	70.0	56.0	9.0
1987-1990	3.50	2.00	70.0	56.0	11.0
1985-1986	10.0	6.00	150	120	16.0
1979-1984	11.5	7.00	150	120	16.0
1974-1978	13.0	8.00	150	120	20.0
1970-1973	13.0	8.00	175	140	20.0
1968-1969	24.0	15.0	200	160	30.0

SECTION 3. NR 485.06(2) is amended to read:

NR 485.06(2)(a) Notwithstanding sub. (1), any person may replace the catalytic converter ~~on a vehicle older than 5 model years or with more than 50,000 miles on the odometer~~ with aftermarket equipment certified by the U.S. environmental protection agency (EPA)~~.~~ on the following categories of vehicles:

1. All vehicles of model year 1994 or earlier.

2. For vehicles of model year 1995 or later, those vehicles which are at least 8 model years older than the current model year, or those vehicles with

more than 80,000 miles on the odometer.

(b) If the catalytic converter is replaced, the owner of the vehicle shall provide a receipt or other evidence showing that the replacement converter has been certified by EPA.

SECTION 4. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 5. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on ~~_____~~ December 7, 2005.

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By_____
Scott Hassett, Secretary

(SEAL)