Chapter NR 485

CONTROL OF EMISSIONS FROM MOTOR VEHICLES, INTERNAL COMBUSTION ENGINES AND MOBILE SOURCES; TAMPERING PROHIBITION

NR 485.01 Applicability; purpose. (1) APPLICABILITY. This chapter applies to all motor vehicles, internal combustion engines and mobile air contaminant sources and to their owners and operators.

(2) PURPOSE. This chapter is adopted under ss. 144.31, 144.40 and 144.42, Stats., to establish emission limitations for motor vehicles, internal combustion engines and mobile air contaminant sources, to prohibit any person from tampering with the air pollution control equipment of a motor vehicle and to require tampering inspections.

History: Cr. Register, September, 1986, No. 369, eff. 10-1-86; am. (2), Register, July, 1989, No. 403, eff. 8-1-89; am. (1), Register, February, 1990, No. 410, eff. 3-1-90; am. (1), Register, May, 1992, No. 437, eff. 6-1-92.

NR 485.02 Definitions. In addition to the definitions in this section, the definitions contained in ch. NR 400 apply to the terms used in this chapter.

(1) "DOT" means the department of transportation.

(2) "Random basis" means random selection of individual vehicles across the entire population of vehicles subject to inspection under s. 110.20 (6), Stats.; or random selection of individual vehicles within a particular category of vehicles identified by age or type in Table 1 of s. NR 485.04.

(3) "Rpm" means revolutions per minute.

(4) "Steady-state loaded mode test" means an exhaust emissions test performed on a vehicle while it is maintained at a stabilized engine load, stabilized wheel rpm or stabilized road load horsepower on a vehicle dynamometer.

(5) "Transient loaded mode test" means an exhaust emissions test performed on a vehicle as it is brought from idle to a stabilized engine load, stabilized wheel rpm or stabilized road load horsepower on a vehicle dynamometer. Elements of this test include engine rpm at the start of the test, ending engine rpm, the rate of wheel rpm increase or decrease or the rate of road load horsepower change, and the test duration.

History: Cr. Register, September, 1986, No. 369, eff. 10-1-86; r. and recr. Register, July, 1989, No. 403, eff. 8-1-89.

NR 485.03 General limitations. No person may cause, allow or permit emissions of particulate matter, sulfur oxides, hydrocarbons, carbon monoxide, nitrogen oxides, or odors from a motor vehicle, internal com-

bustion engine, or mobile source which substantially contribute to the exceeding of an air standard or create air pollution.

History: Renum. from NR 154.17 (1), Register, September, 1986, No. 369, eff. 10-1-86; am. Register, July, 1989, No. 403, eff. 8-1-89; am. Register, May, 1992, No. 437, eff. 6-1-92.

NR 485.04 Motor vehicle emission limitations; exemptions. (1) Any motor vehicle which is subject to inspection under s. 110.20 (6), Stats., may not emit carbon monoxide (CO) or hydrocarbons (HC) from the exhaust system in concentrations greater than those set forth in Table 1 when measured in an inspection conducted under ch. Trans 131.

Table 1

MODEL YEAR GROUPS	MAXIMUM EMISSION CONCENTRATION	
	HC (parts per million of exhaust)	CO (as a percent of exhaust)
Light Duty Vehicles		
1970-1971	800	8.0
1972-1974	550	7.0
1975-1977	450	5.5
1978	350	4.0
1979	275	3.0
1980	230	2.0
1981 and newer	220	1.2
Light Duty Trucks with gross vehicle weight of 6,000 pounds or less		
1970-1971	800	8.0
1972-1974	700	7.0
1975-1977	500	6.0
1978	450	5.0
1979	300	3.0
1980	275	2.5
1981-1984	250	2.0
1985 and newer	220	1.2
Light Duty Trucks with gross vehicle weight of 6,001 to 8,000 pounds		
1970-1971	800	8.0
1972-1974	700	7.0
1975-1977	550	6.5
1978	450	5.5
1979	300	3.0
1980	275	2.5
1981-1984	250	2.0
1985 and newer	220	1.2

(2) In addition to the vehicles specified in s. 144.42 (5), Stats., the following motor vehicles are exempt from the emission limitations of sub. (1):

(a) A motor carrier used "for hire" as defined in s. 194.01 (15), Stats.

(b) A truck tractor as defined in s. 340.01 (73), Stats.

(c) A motor home as defined in s. 340.01 (33m), Stats.

(d) A motor vehicle registered under s. 341.26 (2) (b), (d), (dm), (e), (f), (g), (h), (i), (j), (k) or (m), (2r) or (4), Stats.

History: Renum. from NR 154.17 (3) and am. Register, September, 1986, No. 369, eff. 11-1-86; am. Table, Register, February, 1990, No. 410, eff. 3-1-90.

NR 485.05 Visible emission limits for motor vehicles, internal combustion engines, and mobile sources. No person may cause, allow or permit visible emissions in amounts greater than the following limitations, except when uncombined water is the cause for violation.

(1) Gasoline-powered internal combustion engines of 25 HP or more, or gasoline-powered motor vehicles: no visible emissions for longer than 5 consecutive seconds.

(2) Diesel-powered motor vehicles of model year 1970 or later: emissions of shade or density greater than number 1 on the Ringelmann chart or 20% opacity for longer than 10 consecutive seconds.

(3) Diesel-powered motor vehicles of model year 1969 or earlier: emissions of shade or density greater than number 2 on the Ringelmann chart of 40% opacity for longer than 10 consecutive seconds.

(4) Ships, locomotives, or semistationary diesel engines: emissions of shade or density greater than number 2 on the Ringelmann chart or 40% opacity for longer than an aggregate time of 5 minutes in any 30-minute period. At no time may emissions exceed a shade or density greater than number 4 on the Ringelmann chart or 80% opacity.

History: Renum. from NR 154.17 (4), Register, September, 1986, No. 369, eff. 10-1-86; am. (intro.) Register, July, 1989, No. 403, eff. 8-1-89; am. (intro.) and (4), Register, May, 1992, No. 437, eff. 6-1-92.

NR 485.06 Tampering with air pollution control equipment. (1) No person may tamper with or fail to maintain in good working order any air pollution control equipment which has been installed on a motor vehicle by the manufacturer prior to sale unless the person repairs or restores the equipment or replaces the equipment with new identical or comparable tested replacement equipment. Catalytic converters must be original equipment or EPA-certified equipment except as specified in sub. (2). Air pollution control equipment includes but is not limited to:

(a) Positive crankcase ventilation equipment.

(b) Exhaust emission control equipment.

(c) Evaporative fuel loss control equipment.

(d) Any control equipment operating on principles such as thermal decomposition, catalytic oxidation or reduction, absorption, or adsorption.

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

History: Renum. from NR 154.17 (2), Register, September, 1986, No. 369, eff. 10-1-86; renum. (intro.) to (4) to (1) (a) to (d) and am. cr. (2), Register, July, 1989, No. 403, eff. 8-1-89.

NR 485.07 Random inspection requirement for motor vehicle tampering. (1) APPLICABILITY. Any motor vehicle which is subject to the maintenance inspection test under s. 110.20 (6), Stats., shall also be subject to selection for an air pollution control equipment tampering inspection. The total number of vehicles selected annually for tampering inspections shall be a minimum of 5% and a maximum of 100% of the vehicles subject to inspection under s. 110.20 (6), Stats. Unless 100% of the vehicles subject to inspection are selected for inspection by means of an ongoing schedule that guarantees inspection of each vehicle at least once every 3 years, then selection for tampering inspections shall be made by the DOT or its designee on a random basis in a manner preapproved by the department.

(2) RECORDS AND COMPLIANCE. DOT or its designee shall maintain a record of vehicles failing the tampering inspection. DOT may not register or renew registration of a failed vehicle until evidence of repair, replacement or restoration of the failed or missing parts is provided to DOT or its designee, and DOT or its designee reinspects the vehicle for the failed or missing parts.

(3) FULL TAMPERING INSPECTION PROCEDURE. (a) Full tampering inspections shall consist of a visual check for the presence and proper connection of the following air pollution control equipment: the positive crankcase ventilation (PCV) valve and connections; the evaporative emissions control canister; the exhaust system catalytic converter and oxygen sensor; the exhaust gas recirculation (EGR) assembly; the air pump, belts and hoses or the air injector assembly; the fuel inlet restricter; a properly seated gas tank fill cap; and the thermostatic air cleaner/filter assembly.

(b) Full tampering inspections shall also include a test for the presence of lead deposits in the tailpipe if the vehicle is required to use unleaded gasoline. Evidence of the use of leaded fuel in vehicles requiring the use of unleaded fuel as shown by the presence of lead in the tailpipe, the presence of leaded fuel in the gas tank or evidence of current or previous tampering with the fuel inlet restricter shall constitute tampering with the catalytic converter and the exhaust oxygen sensor if the vehicle originally had that equipment. When evidence of fuel inlet tampering is found, and a tailpipe lead test indicates the absence of lead deposits, DOT or its designee may waive the requirement to repair, replace, or restore the catalytic converter and oxygen sensor equipment, if:

1. A full tampering inspection of the vehicle indicates no additional tampering; and

2. The owner of the vehicle provides evidence to DOT or its designee that the catalytic converter and oxygen sensor were replaced subsequent to April 1, 1988, or the owner provides evidence to DOT or its designee that a previously tampered with but partially restored and functional fuel inlet restricter was installed in the vehicle prior to or concurrently with the replacement of the catalytic converter and oxygen sensor, or DOT or its designee determines that the particular vehicle model is on a list of vehicle models that chronically fail the fuel inlet restricter test due to improper new vehicle equipment design, improper new vehicle equipment installation or normal extended wear.

(c) Any reinspection required under sub. (2) may omit the test for the presence of lead in the tailpipe if the catalytic converter has been replaced.

(4) SUBSTITUTE PROCEDURE. (a) Upon written department approval granted to DOT, a partial tampering inspection procedure may be substituted for the full inspection procedure in sub. (3), provided that use of the substitute procedure maintains the inspection program effectiveness in terms of adequate pollution reduction and adequate identification and repair of tampered and misfueled vehicles and improperly maintained emission control equipment. The department may also consider program operation cost and waiting time impacts in reviewing the substitute procedure. The following types of substitute procedures are acceptable for part or all of the full inspection:

1. A steady-state loaded mode test or a transient loaded mode test for nitrogen oxides, carbon monoxide, carbon dioxide, oxygen or hydrocarbons by which air pollution control equipment tampering or functioning can be demonstrated; or

2. A visual inspection checking for the presence of fewer items than the full inspection procedure.

(b) A substitute procedure shall occur at a sufficient initial inspection frequency to allow annual VOC reductions equivalent to or greater than those generated under the procedure specified in sub. (3) when full inspections are randomly made on a minimum of 5% of the vehicles subject to inspection under s. 110.20 (6), Stats. Calculation of annual VOC reductions shall be based on U.S. environmental protection agency models or EPA assisted analysis.

(c) Prior to April 1, 1990, if a vehicle fails the substitute inspection, either the initial inspection shall be expanded to include the full inspection procedure, or the failure shall be noted in DOT records and the vehicle shall be fully inspected prior to its next registration or registration renewal. Commencing April 1, 1990, when a vehicle fails the substitute inspection procedure, the initial inspection shall be expanded to include the full procedure in sub. (3).

(5) PROCEDURE REVIEW. The department shall review the tampering inspection procedure in effect at least once after the first 15 months of the DOT inspection contract which is in effect on the effective date of this section and prior to each subsequent DOT inspection contract or contract extension. Upon such review, the department may withdraw or alter any substitute procedure approved under sub. (4).

History: Cr. Register, July, 1989, No. 403, eff. 8-1-89; am. (4) (a) (intro.), Register, May, 1992, No. 437, eff. 6-1-92.