CHAPTER 7005
MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY DIVISION
AIR POLLUTION CONTROL

AMBIENT AIR QUALITY STANDARDS

7005.0010 DEFINITIONS.

Subpart 1. **Scope.** For the purpose of parts 7005.0010 to 7005.0080, the following terms have the meanings given them.

Subp. 2. **Primary ambient air quality standards; primary standards.** "Primary ambient air quality standards" or "primary standards" mean levels established to protect the public health from adverse effects. The adverse effects that the standards should protect against include acute or chronic subjective symptoms and physiological changes that are likely to interfere with normal activity in healthy or sensitive individuals or to interfere unreasonably with the enjoyment of life or property.

Subp. 3. **Secondary ambient air quality standards; secondary standards.** "Secondary ambient air quality standards" or "secondary standards" mean levels established to protect the public welfare from any known or anticipated adverse effects, such as injury to agricultural crops and livestock, damage to or deterioration of property, annoyance and nuisance of persons, or hazards to air and ground transportation.

Statutory Authority: *MS s 116.07 subds 2,4*

7005.0020 PROHIBITED EMISSIONS.

No person shall emit any pollutant in such an amount or in such a manner as to cause or contribute to a violation of any ambient air quality standard beyond such person's property line, provided however, that in the event the general public has access to the person's property or portion thereof, the ambient air quality standards shall apply in those locations. The general public shall not include employees, trespassers, or other categories of people who have been directly authorized by the property owner to enter or remain on the property for a limited period of time and for a specific purpose.

Statutory Authority: *MS s 116.07 subds 2,4*

7005.0030 ENFORCEMENT.

The requirement in part 7005.0020 applies without respect to whether emission rules stated in other air pollution control rules of the agency are also being violated. However, in enforcing the ambient air quality standards specified

in parts 7005.0010 to 7005.0080, the agency shall not seek payment of a civil or criminal penalty from a person to or with whom a permit or stipulation agreement has been issued or entered into by the agency if and only if:

A. that permit or stipulation agreement establishes emission limitations or standards of performance for the pollutant or precursor thereof for which there is an ambient air quality standard which has been violated; and

B. the person to or with whom the permit or stipulation agreement has been issued or entered into by the agency was in compliance with the corresponding emission limitations and standards of performance at the time of the violation of the ambient air quality standard.

Statutory Authority: *MS s 116.07 subds 2,4*

7005.0040 ENFORCEMENT; OPTIONS.

Notwithstanding part 7005.0030, any violations of the ambient air quality standards shall constitute grounds for the modification or revocation of a permit, for action by the agency to amend a stipulation agreement, or for other enforcement action by the agency to further require reduction or control of that person's emissions.

Statutory Authority: *MS s 116.07 subds 2,4*

7005.0050 MEASUREMENT METHODOLOGY, EXCEPT FOR HYDROGEN SULFIDE.

For all ambient air quality standards except hydrogen sulfide, measurements made to determine compliance with the standards shall be performed as set forth in:

A. Code of Federal Regulations, title 40, part 50, National Primary and Secondary Ambient Air Quality Standards (1981); or

B. Code of Federal Regulations, title 40, part 53-Ambient Air Monitoring Reference and Equivalent Methods (1981); and

C. Code of Federal Regulations, title 40, part 58, Ambient Air Quality Surveillance (1981).

Statutory Authority: *MS s 116.07 subds 2,4*

7005.0060 MEASUREMENT METHODOLOGY FOR HYDROGEN SULFIDE.

For hydrogen sulfide, measurements made to determine compliance with the standards shall be performed in accordance with any measurement method approved by the director. The director shall approve a measurement method where the sensitivity, precision, accuracy, response time, and interference levels of the method are comparable to that of the measurement methods for the other pollutants described in part 7005.0050; and when the person seeking to take the measurement has developed and submitted to the agency a quality assurance plan that provides operational procedures for each of the activities described in Code of Federal Regulations 1981, title 40, part 58, appendix A.2.2, Quality Assurance Requirements for State and Local Air Monitoring Stations.

Statutory Authority: *MS s 116.07 subds 2,4*

7005.0070 TIME OF COMPLIANCE.

The ozone and sulfur dioxide standards shall be attained as expeditiously as practicable but in no case later than December 31, 1984.

Statutory Authority: *MS s 116.07 subds 2,4*

7005.0080 STATE AMBIENT AIR QUALITY STANDARDS.

The following table contains the state ambient air quality standards.

Pollutant/ Air Contaminant	Primary Standard	Secondary Standard	Remarks
Hydrogen Sulfide	0.05 ppm by volume (70.0 micrograms per cubic meter)		1/2 hour average not to be exceeded over 2 times per year
	0.03 ppm by volume (42.0 micrograms per cubic meter)		1/2 hour average not to be exceeded over 2 times in any 5 consecutive days
Ozone	0.12 ppm by volume (235 micrograms per cubic meter)	0.12 ppm by volume (235 micrograms per cubic meter)	the standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one, as determined by Code of Federal Regulations, title 40, part 50, appendix H, Interpretation of the National Ambient Air Quality Standards for Ozone (1981)
Carbon Monoxide	9 ppm by volume (10 milligrams per cubic meter)	9 ppm by volume (10 milligrams per cubic meter)	maximum 8 hour concentration not to be exceeded more than once per year
	30 ppm by volume (35 milligrams per cubic meter)	30 ppm by volume (35 milligrams per cubic meter)	maximum 1 hour concentration not to to be exceeded more than once per year
Hydro carbons	0.24 ppm by volume (160 micrograms per cubic meter)	0.24 ppm by volume (160 micrograms per cubic meter)	maximum 3 hour concentration (6:00 to 9:00 a.m.) not to be exceeded more than once per year, corrected for methane
Sulfur Dioxides	80 micrograms per cubic	60 micrograms per cubic	maximum annual arithmetic mean

	meter (0.03 ppm by volume)	meter (0.02 ppm by volume)	
	365 micrograms per cubic meter (0.14 ppm by volume)	365 micrograms per cubic meter (0.14 ppm by volume)	maximum 24 hour concentration not to be exceeded more than once per year
		915 micrograms per cubic meter (0.35 ppm by volume)	maximum 3 hour concentration not to be exceeded more than once per year in Air Quality Control Regions 127, 129, 130, and 132 as set forth in Code of Federal Regulations, title 40, part 81, Designations of Air Quality Control Regions (1981)
		1300 micrograms per cubic meter (0.5 ppm by volume)	maximum 3 hour concentration not to be exceeded more than once per year in Air Quality Control Regions 128, 131, and 133 as set forth in Code of Federal Regulations, title 40, part 81, Designation of Air Quality Control Regions (1981)
	1300 micrograms per cubic meter (0.5 ppm by volume)		maximum 3 hour concentration not to be exceeded more than once per year
	1300 micrograms per cubic meter (0.5 ppm by volume)		maximum 1 hour concentration not to be exceeded more than once per year
Particulate Matter	75 micrograms per cubic	60 micrograms per cubic	maximum annual geometric mean

	meter	meter	
	260 micrograms per cubic meter	150 micrograms per cubic meter	maximum 24 hour concentration not to be exceeded more than once per year
Nitrogen Dioxides	0.05 ppm by volume (100 micrograms per cubic meter)	0.05 ppm by volume (100 micrograms per cubic meter)	maximum annual arithmetic mean

Statutory Authority: *MS s 116.07 subds 2,4*

GENERAL PROVISIONS

7005.0100 DEFINITIONS.

Subpart 1. **Scope.** As used in the state air pollution control rules, the following terms have the meanings given them except as expressly provided in a specific rule.

Subp. 2. **Agency.** "Agency" means the Minnesota Pollution Control Agency as constituted under Minnesota Statutes, section 116.02, subdivision 1.

Subp. 3. **Alternative method.** "Alternative method" means a method of sampling and analyzing for an air pollutant which is not a Reference or Equivalent method but which has been demonstrated to the director's satisfaction to, in specific cases, produce results adequate for its determination of compliance.

Subp. 4. **Breakdown.** "Breakdown" means a sudden and unavoidable failure of air pollution control equipment or process equipment to operate as designed.

Subp. 4a. **Commenced.** "Commenced" means that an owner or operator has undertaken a continuous program of construction, modification, or reconstruction, or has entered into a contractual obligation to undertake and complete, within a reasonable time, this program.

Subp. 5. **Construction.** "Construction" means fabrication, erection, or installation of an emission facility.

Subp. 6. **Continuous monitoring system.** "Continuous monitoring system" means the total equipment used to continuously sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Subp. 7. [Repealed by amendment, 8 SR 2275]

Subp. 8. **Control equipment.** "Control equipment" means an "air contaminant treatment facility" or a "treatment facility" as those terms are defined in Minnesota Statutes, section 116.06, subdivision 6.

Subp. 9. **Director.** "Director" means the chief executive officer of the agency as described in Minnesota Statutes, section 116.04.

Subp. 10. **Emission facility.** "Emission facility" means any structure, work, equipment, machinery, device, apparatus, or other means whereby an emission is caused to occur.

Subp. 10a. **Emission source.** "Emission source" means a single source whereby an emission is caused to occur.

Subp. 11. **Equivalent method.** "Equivalent method" means a method of sampling and analyzing for an air pollutant which has been demonstrated to the director's satisfaction to have under specified conditions a consistent and quantitatively known relationship to the Reference methods set forth in Code of Federal Regulations, title 40, part 60, appendix A.

Subp. 11a. **Existing facility.** "Existing facility" means an emission facility at which construction, modification, or reconstruction was commenced before the effective date of the applicable New Source Performance Standard or the applicable state air pollution control rule.

Subp. 11b. **Fugitive emissions.** "Fugitive emissions" means pollutant discharges to the atmosphere that do not pass through a stack, chimney, or other functionally equivalent opening, at which a measurement of the emissions can be made using a Reference method other than Method 9.

Subp. 12. [Repealed by amendment, 8 SR 2275]

Subp. 13. [Repealed by amendment, 8 SR 2275]

Subp. 14. [Repealed by amendment, 8 SR 2275]

Subp. 15. [Repealed by amendment, 8 SR 2275]

Subp. 16. [Repealed by amendment, 8 SR 2275]

Subp. 17. [Repealed by amendment, 8 SR 2275]

Subp. 18. [Repealed by amendment, 8 SR 2275]

Subp. 19. [Repealed by amendment, 8 SR 2275]

Subp. 20. [Repealed by amendment, 8 SR 2275]

Subp. 21. [Repealed by amendment, 8 SR 2275]

Subp. 22. [Repealed by amendment, 8 SR 2275]

Subp 23. [Repealed by amendment, 8 SR 2275]

Subp. 24. **Minneapolis-Saint Paul Air Quality Control Region.** "Minneapolis-Saint Paul Air Quality Control Region" means the area encompassed by the boundaries of the following counties: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington. See Code of Federal Regulations, title 40, part 81.27 (1982).

Subp. 24a. **Modification.** "Modification" means a physical change or a change in the operation of an emission facility that is not allowed under a permit, stipulation agreement, or an applicable air pollution control rule, and that results in an increase in the emission of an air pollutant.

Subp. 25. **Monitoring device.** "Monitoring device" means the total equipment used to measure and record (if applicable) process or control equipment parameters.

Subp. 25a. **New facility.** "New facility" means an emission facility on which construction, modification, or reconstruction was commenced after the effective date of the applicable New Source Performance Standard or the applicable state air pollution control rule.

Subp. 26. **New Source Performance Standard.** "New Source Performance Standard" means a standard of performance promulgated by the administrator of the United States Environmental Protection Agency under the Clean Air Act, United States Code, title 42, section 7411, as amended.

Subp. 27. **Nitrogen oxides.** "Nitrogen oxides" means all oxides of nitrogen except nitrous oxide.

Subp. 28. **One-hour period.** "One-hour period" means any 60-minute period commencing on the hour.

Subp. 29. **Opacity.** "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Subp. 30. **Owner or operator.** "Owner or operator" means a person who owns, leases, operates, controls, or supervises an emission facility.

Subp. 31. **Particulate matter.** "Particulate matter" means material, except water, which exists at standard conditions in a finely divided form as a liquid or solid.

Subp. 31a. **Performance specification.** "Performance specification" means

the specifications for continuous monitoring systems in Code of Federal Regulations, title 40, part 60, appendix B (1982).

Subp. 32. [Repealed by amendment, 8 SR 2275]

Subp. 33. [Repealed by amendment, 8 SR 2275]

Subp. 34. [Repealed by amendment, 8 SR 2275]

Subp. 35. **Person.** "Person" means person as defined in Minnesota Statutes, section 116.06, subdivision 8.

Subp. 35a. **Potential emissions.** "Potential emissions" means the emissions from an emission facility, after control equipment has been applied, when the facility is operating at maximum design capacity and maximum hours of operation or as limited by enforceable permit conditions, whichever results in fewer emissions.

Subp. 35b. **Reconstruction.** "Reconstruction" means replacement of depreciable components of an existing emission source to which a New Source Performance Standard or state air pollution control rule is applicable, to the extent that the fixed capital cost of the depreciable components exceeds 50 percent of the fixed capital cost of depreciable components that would be required to construct a comparable entirely new emission source.

Subp. 35c. **Reference method; Method.** "Reference method" or "Method" means the procedures for performance tests in Code of Federal Regulations, title 40, part 60, appendix A, (1982).

Subp. 35d. **Run.** "Run" means the net period of time during which an emission sample is collected.

Subp. 36. [Repealed by amendment, 8 SR 2275]

Subp. 37. **Shutdown.** "Shutdown" means the cessation of operation of an emission facility or control equipment for any purpose.

Subp. 38. [Repealed by amendment, 8 SR 2275]

Subp. 39. **Smoke.** "Smoke" means small gas-borne particles resulting from incomplete combustion, consisting predominantly, but not exclusively of carbon and other combustible material, or ash, that form a visible plume in the air.

Subp. 40. [Repealed by amendment, 8 SR 2275]

Subp. 41. **Standard conditions.** "Standard conditions" means a temperature of 20 degrees Celsius (68 degrees Fahrenheit) and a pressure of 760 mm of Hg (29.92 in. of Hg).

Subp. 42. **Standard of performance.** "Standard of performance" means a restriction on the amount of air pollutants which may be emitted by an emission facility.

Subp. 42a. **Startup.** "Startup" means the setting into operation of an emission facility or control equipment for any purpose.

Subp. 42b. **State air pollution control rules.** "State air pollution control rules" means parts 7005.0010 to 7005.3060.

Subp. 43. [Repealed by amendment, 8 SR 2275]

Subp. 44. **Total emission facility.** "Total emission facility" means an assemblage of all emission sources on adjacent property that are under common ownership or control and that exist for a common function.

Statutory Authority: *MS s 116.07 subd 4*

History: *8 SR 2275*

7005.0110 ABBREVIATIONS.

As used in the state air pollution control rules, the following abbreviations have the meanings given them:

A. A.S.T.M., American Society for Testing and Materials;

B. Btu, British thermal unit;
C. °C, degree Celsius (centigrade);
D. cal, calorie;
E. cfm, cubic feet per minute;
F. CO, carbon monoxide;
G. CO_2, carbon dioxide;
H. dscm, dry cubic meter at standard conditions;
I. dscf, dry cubic feet at standard conditions;
J. °F, degree Fahrenheit;
K. g, gram;
L. gr, grain;
M. Hg, mercury;
N. H_2S, hydrogen sulfide;
O. H_2SO_4, sulfuric acid;
P. J, joule;
Q. kg, kilogram;
R. l, liter;
S. m, meter;
T. mg, milligram;
U. ml, milliliter;
V. mm, millimeter;
W. N_2, nitrogen;
X. NO_2, nitrogen dioxide;
Y. NO_x, nitrogen oxides;
Z. O_2, oxygen;
AA. ppb, parts per billion;
BB. ppm, parts per million;
CC. psia, pounds per square inch absolute;
DD. scf, cubic feet at standard conditions;
EE. SO_2, sulfur dioxide;
FF. µg, microgram (10^{-6} gram).

Statutory Authority: *MS s 116.07 subd 4*

History: *8 SR 2275*

7005.0115 APPLICABILITY OF STANDARDS OF PERFORMANCE.

Subpart 1. **Existing facility.** An owner or operator of an existing emission facility shall comply with all applicable state air pollution control rules for existing emission facilities.

Subp. 2. **New facility.** An owner or operator who constructs, modifies, or reconstructs an emission facility shall comply with the New Source Performance Standards, if applicable, or the standards of performance for a new emission facility set forth in the state air pollution control rules.

Subp. 3. **Exception.** For the purpose of the state air pollution control rules, the use of an alternative type of fuel or raw material is not a modification if the existing facility was designed to accommodate the alternative type of fuel or raw material. An emission facility is considered to be designed to accommodate an alternative type of fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change.

Statutory Authority: *MS s 116.07 subd 4*

History: *8 SR 2275*

7005.0116 OPACITY STANDARD ADJUSTMENT.

Subpart 1. **Application for permit modification.** An owner or operator of an emission facility may file an application for a permit modification under parts 7005.0200 to 7005.0280 for adjustment of the opacity standard applicable to an emission source. In addition to the items required under parts 7005.0200 to 7005.0280, the application must contain data that demonstrates that:

A. based on tests conducted under parts 7005.1850 to 7005.1880, the emission source is in compliance with the applicable standard of performance for particulate matter and all other standards of performance, except the opacity standard;

B. the total emission facility is in compliance with all applicable standards of performance except the opacity standard at the emission sources for which adjustments are being sought or have already been permitted by the agency; and

C. the total emission facility was operated in a manner to minimize the opacity of emissions at the emission source during the performance tests conducted under item A.

Subp. 2. **Atmospheric dispersion modeling.** If the data submitted under subpart 1 indicates that an adjustment of the opacity standard may cause or contribute to a violation of an ambient air quality standard, the agency shall require the owner or operator to conduct atmospheric dispersion modeling and include the results of the modeling in the application for a permit modification. However, a total emission facility that has potential emissions of particulate matter of less than 25 tons per year is not required to conduct modeling. Modeling must be performed according to Guidelines on Air Quality Models (OAQPS No. 1.2-080, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, 1978) or methods that the director finds to be comparably reliable.

Subp. 3. **Opacity adjustment determination and permit modification.** The agency shall set an adjusted opacity standard at the most restrictive level which the performance tests conducted under subpart 1, items A and C demonstrate the emission source is capable of meeting and shall modify the permit to establish the adjusted opacity standard, if the requirements of subparts 1 and 2 are met and the total emission facility, with the adjusted opacity standard, would meet any one of the following:

A. not cause or contribute to a violation of an ambient air quality standard;

B. have potential emissions of particulate matter of less than 25 tons per year and less than one ton per day; or

C. contribute less than one $\mu g/m^3$ to an annual ambient particulate matter standard violation and less than five $\mu g/m^3$ to a 24-hour ambient particulate matter standard violation.

Statutory Authority: *MS s 116.07 subd 4*

History: *8 SR 2275*

7005.0117 CIRCUMVENTION.

No owner or operator may install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.

Statutory Authority: *MS s 116.07 subd 4*

History: *8 SR 2275*

7005.0120 [Repealed by amendment, 8 SR 2275]

7005.0130 [Repealed by amendment, 8 SR 2275]

7005.0140 [Repealed by amendment, 8 SR 2275]

7005.0150 [Repealed by amendment, 8 SR 2275]

7005.0160 [Repealed by amendment, 8 SR 2275]

7005.0170 [Repealed by amendment, 8 SR 2275]

7005.0180 [Repealed by amendment, 8 SR 2275]

7005.0200 [Repealed, 8 SR 2276]

7005.0210 [Repealed, 8 SR 2276]

7005.0220 [Repealed, 8 SR 2276]

7005.0230 [Repealed, 8 SR 2276]

7005.0240 [Repealed, 8 SR 2276]

7005.0250 [Repealed, 8 SR 2276]

7005.0260 [Repealed, 8 SR 2276]

7005.0270 [Repealed, 8 SR 2276]

7005.0280 [Repealed, 8 SR 2276]

STANDARDS OF PERFORMANCE FOR INDIRECT HEATING FOSSIL FUEL-BURNING EQUIPMENT

7005.0300 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.0300 to 7005.0400, the following words shall have the meanings defined herein.

Subp. 2. **Actual heat input.** "Actual heat input" means the number of Btu per hour (cal/hr) determined by multiplying the gross heating value of the fuel by the rate of fuel burned.

Subp. 3. **Coal refuse.** "Coal refuse" means waste-products of coal mining, cleaning, and coal preparation operations (e.g. culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material.

Subp. 4. **Derating.** "Derating" means limitation of heat input and corresponding steam output capacity.

Subp. 5. **Direct heating equipment.** "Direct heating equipment" means a furnace, kiln, dryer, or other combustion equipment used in the burning of a fossil fuel for the purpose of processing a material where the products of combustion have direct contact with the heated material.

Subp. 6. **Distillate oil.** "Distillate oil" means grades of oils known as No. 1 and No. 2, as defined in the A.S.T.M. D 396 (1973).

Subp. 7. **Fossil fuel.** "Fossil fuel" means natural gas, petroleum, coal, wood, peat, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

Subp. 8. **Gross heating value.** "Gross heating value" means the gross calorific value (cal/g or Btu/lb) of the fuel combusted as determined by A.S.T.M. test methods D 2015-66(72) for solid fuels; D 1826-64(70) for gaseous fuels, and D 240-64(73) for liquid fuels.

Subp. 9. **Indirect heating equipment.** "Indirect heating equipment" means a furnace, a boiler, or other unit of combustion equipment used in the process of burning fossil fuel for the purpose of producing steam, hot water, hot air, or other hot liquid, gas, or solid, where the products of combustion do not have direct contact with the heated medium.

Subp. 10. **Rated heat input.** "Rated heat input" means the number of Btu per hour (cal/hr) which the manufacturer has determined to be the continuous rated

capability of the indirect heating equipment, or, where the rated heat input is not specified by the manufacturer, the number of Btu per hour (cal/hr) determined by dividing the rated heat output by the overall thermal efficiency.

Subp. 11. **Residual oil.** "Residual oil" means grades of oils known as No. 4, No. 5 (light), No. 5 (heavy), and No. 6, as listed in A.S.T.M. D 396 (1973).

Subp. 12. **Steam generating unit.** "Steam generating unit" means indirect heating equipment used to produce steam.

Statutory Authority: *MS s 116.07 subd 4*

7005.0310 DETERMINATION OF APPLICABLE STANDARDS OF PERFORMANCE.

Subpart 1. **Scope.** Parts 7005.0300 to 7005.0400 shall apply to indirect heating equipment for which a standard of performance has not been promulgated in a specific rule.

Subp. 2. **Rated heat input.** The applicable standards of performance in part 7005.0390 or 7005.0400 shall be determined by using the rated heat input of the specific indirect heating equipment and the total rated heat inputs of all indirect heating equipment and all direct heating equipment of one owner or operator at that particular location.

Subp. 3. **Simultaneous burning of different fuels.** Simultaneous burning of different fuels:

A. When different fossil fuels are burned simultaneously in any combination, the applicable sulfur dioxide standard shall be determined by proration using the following formula:

$$w = \frac{y(a) + z(b)}{x + y + z}$$

where:

w is the maximum allowable emissions of sulfur dioxide gases in lbs per million Btu (nanograms/joule);

x is the percentage of total heat input derived from gaseous fossil fuel;

y is the percentage of total heat input derived from liquid fossil fuel;

z is the percentage of total heat input derived from solid fossil fuel;

a is the allowable SO_2 standard for liquid fossil fuels expressed in lbs per million Btu (nanograms/joule); and

b is the allowable SO_2 standard for solid fossil fuels expressed in lbs per million Btu (nanograms/joule).

B. When different fossil fuels are burned simultaneously in any combination, the applicable nitrogen oxides standard shall be determined by proration using the following formula:

$$w = \frac{x(c) + y(a) + z(b)}{x + y + z}$$

where:

w, x, y, and z mean the same as in the formula in item A, for determining the applicable sulfur dioxide standard;

a is the allowable NO_x standard for liquid fossil fuels expressed in lbs per million Btu (nanograms/joule);

b is the allowable NO_x standard for solid fossil fuels expressed in lbs per million Btu (nanograms/joule); and

c is the allowable NO_x standard for gaseous fossil fuels expressed in lbs per million Btu (nanograms/joule).

Subp. 4. **Exception.** When lignite or a solid fossil fuel containing 25 percent

by weight, or more, of coal refuse is burned in combination with gaseous, liquid, or other solid fossil fuel, the standard of performance for nitrogen oxides shall not apply.

Statutory Authority: *MS s 116.07 subd 4*

7005.0320 STANDARDS OF PERFORMANCE FOR EXISTING INDIRECT HEATING EQUIPMENT.

Subpart 1. **Particulate matter and sulfur dioxide.** No owner or operator of indirect heating equipment shall cause to be discharged into the atmosphere from said equipment any gases which contain particulate matter or sulfur dioxide in excess of the standards of performance shown in part 7005.0390.

Subp. 2. **Opacity.** No owner or operator of indirect heating equipment shall cause to be discharged into the atmosphere from said equipment any gases which exhibit greater than 20 percent opacity; except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.

Statutory Authority: *MS s 116.07 subd 4*

7005.0330 STANDARDS OF PERFORMANCE FOR NEW INDIRECT HEATING EQUIPMENT.

Subpart 1. **Particulate matter, sulfur dioxide, and nitrogen oxides.** No owner or operator of new indirect heating equipment shall cause to be discharged into the atmosphere from said equipment any gases which contain particulate matter, sulfur dioxide, or nitrogen oxides in excess of the standards of performance shown in part 7005.0400.

Subp. 2. **Opacity.** No owner or operator of new indirect heating equipment of greater than 250 million Btu per hour rated heat input shall cause to be discharged into the atmosphere from said equipment any gases which exhibit greater than 20 percent opacity; except that a maximum of 40 percent opacity shall be permissible for not more than two minutes in any 60-minute period.

No owner or operator of new indirect heating equipment of 250 million Btu per hour or less rated heat input shall cause to be discharged into the atmosphere from said equipment any gases which exhibit greater than 20 percent opacity; except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.

Statutory Authority: *MS s 116.07 subd 4*

7005.0340 ALLOWANCE FOR STACK HEIGHT FOR INDIRECT HEATING EQUIPMENT.

Subpart 1. **Requirement.** The owner or operator of any indirect heating equipment shall determine and install a stack of such height that will not cause pollutant concentrations at ground levels to exceed any applicable ambient air quality standard or rule.

Subp. 2. **Methodology.** The determination of the ground level concentrations shall be based upon applicable dispersion calculations approved by the agency.

Statutory Authority: *MS s 116.07 subd 4*

7005.0350 HIGH HEATING VALUE.

The high heating value of a fossil fuel shall mean the same as the gross heating value.

Statutory Authority: *MS s 116.07 subd 4*

7005.0360 PERFORMANCE TEST METHODS.

Unless another method is approved by the director, any person required to

submit performance tests for indirect heating equipment shall utilize the following test methods:

A. Method 1 for selection of sampling site and sample traverses;

B. Method 3 for gas analysis;

C. Method 5 for concentration of particulate matter and the associated moisture content;

D. Method 6 for concentration of SO_2;

E. Method 7 for concentration of NO_x; and

F. Method 9 for visual determination of opacity.

Statutory Authority: *MS s 116.07 subd 4*

7005.0370 PERFORMANCE TEST PROCEDURES.

Subpart 1. **Method 1.** The sampling site, as selected by Method 1, shall be the same for each pollutant during a performance test.

Subp. 2. **Method 5.** For Method 5, the sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the agency. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature between 120 degrees Celsius and 160 degrees Celsius (250 degrees Fahrenheit and 320 degrees Fahrenheit).

Subp. 3. **Methods 6 and 7.** For Methods 6 and 7, the sampling point in the duct shall be at the center of the cross section or at a point no closer to the walls than 1 m (3.28 feet). For Method 6 the sample shall be extracted at a rate proportional to the gas velocity at the sampling point.

Subp. 4. **Method 6.** For Method 6, the minimum sampling time shall be 20 minutes and the minimum sampling volume 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two samples shall constitute one run. Samples shall be taken at approximately 30-minute intervals.

Subp. 5. **Method 7.** For Method 7, each run shall consist of at least four grab samples taken at approximately 15-minute intervals. The arithmetic mean of the samples shall constitute the run value.

Subp. 6. **Nanograms.** For each performance test, the emissions expressed in nanograms/joule (lb/million Btu) shall be determined by the following procedure:

$$E = CF\left(\frac{20.90}{20.9 - \%O_2}\right)$$

where:

A. E = pollutant emission, g/million cal nanograms/joule (lb/million Btu);

B. C = pollutant concentration g/dscm (lb/dscf), determined by Method 5, 6, or 7;

C. $\%O_2$ = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated sampling procedures of Method 3 and by analyzing the sample with a continuous monitoring system, or with the Orsat analyzer. The sample shall be obtained as follows:

(1) For determination of sulfur dioxide and nitrogen oxides emissions, the oxygen sample shall be obtained at approximately the same point in the duct as used to obtain the samples for Methods 6 and 7 determinations, respectively.

(2) For determination of particulate emissions, the oxygen sample shall be obtained simultaneously by traversing the duct at the same sampling location used for each run of Method 5 in accordance with Method 1, except that 12 sample points shall be used in all cases;

D. F = factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted. Values of F are given as follows:

(1) for anthracitic coal according to A.S.T.M. D388-66, F = 2.723 x 10^{-7} dscm/J (10140 dscf/10^6 Btu);

(2) for subbituminous and bituminous coal according to A.S.T.M. D388-66, F = 2.637 x 10^{-7} dscm/J (9820 dscf/10^6 Btu); and

(3) For liquid fossil fuels including crude, residual, and distillate oils, F = 2.476 x 10^{-7} dscm/J (9220 dscf/10^6 Btu); and

(4) For gaseous fossil fuels including natural gas, propane, and butane, F = 2.347 x 10^{-7} dscm/J (8740 dscf/10^6 Btu).

E. An owner or operator may use the following equation to determine an F factor (dscf/10^6 Btu) in lieu of the F factors specified by item D:

$$F = \frac{10^6[3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O)]}{GVH}$$

where:

(1) H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined by ultimate analysis of the fuel fired, dry basis, using A.S.T.M. methods D3168-74 or D3176 (solid fuels) or D240-64(73) (liquid fuels) or computed from results using A.S.T.M. method D1137-53(70), D1945-64(73) or D1946-67(72) (gaseous fuels) as applicable; and

(2) GHV is the gross heating value (Btu/lb dry basis);

F. When combinations of fuels are fired, the F factors determined by item C or D shall be prorated in accordance with the following formula:

$$F = \frac{xF_1 + yF_2 + zF_3}{100}$$

where:

x = the percentage of total heat input derived from gaseous fossil fuel;

y = the percentage of total heat input derived from liquid fossil fuel;

z = the percentage of total heat input derived from solid fossil fuel;

F_1 = the value of F for gaseous fossil fuels according to item D or E;

F_2 = the value of F for liquid fossil fuels according to item D or E; and

F_3 = the value of F for solid fossil fuels according to item D or E;

G. When combinations of fossil fuels are fired, the actual heat input, expressed in cal/hr (Btu/hr), shall be determined during each testing period. The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the indirect heating system.

Subp. 7. **Alternate method.** When the emission factor cannot be calculated by means of the method outlined in subpart 6, the emission factors for all pollutants for all new and existing indirect heating equipment expressed in nanograms/joule (lb./million Btu) shall be determined by the following procedure:

$$E = \frac{E_1}{Z}$$

where:

E = pollutant emissions, in nanograms/joule (lb./million Btu);

E_1 = pollutant emission rate, in nanograms/hr. (lb./hr), determined by Method 5; and

z = actual heat input, in joules/hr., (million Btu/hr).

Subp. 8. **Operation of indirect heating equipment.** The indirect heating equipment shall be operated during the performance test at 90 percent or more of the rated heat input, or at 100 percent of peak operating load if an owner or operator intends to achieve compliance by derating.

Statutory Authority: *MS s 116.07 subd 4*

7005.0380 DERATE.

The owner or operator of indirect heating equipment who elects to achieve compliance with an applicable standard of performance by derating shall:

A. advise the director of the agency in writing of the intent to achieve compliance by derating and the capacity level at which the owner or operator intends to operate this equipment;

B. agree to a permit condition in the required operating permit that prohibits operation of the equipment in excess of the derate level;

C. install a boiler steam flow meter to continuously record, indicate, and integrate boiler steam flow, and shall:

(1) submit a written report to the director of the agency within ten days of any excess steam flow occurrence above the specified derate load;

(2) use a one-hour averaging period in determining an excess above derate with corrections for deviations in steam pressure or temperature if required;

(3) submit written yearly reports to the director of the agency confirming that no excesses have occurred during normal operations;

(4) retain and make available for inspection by the agency or its authorized employees or agents steam flow charts for a minimum period of two years following the date of measurement; and

D. an effective method of physical limitation of boiler load shall be submitted for approval by the director of the agency prior to authorization of a boiler derate. Such limitation may include but is not limited to, a tieback signal from the steam flow meter to the combustion control system cutting back fuel input at the derate load, a maximum limit stop on the fuel input control drive or valve, or such other equivalent physical means.

Statutory Authority: *MS s 116.07 subd 4*

7005.0390 TABLE I: EXISTING SOURCES.

RATED HEAT INPUT OF THE INDIRECT HEATING EQUIPMENT Million BTU/Hr.	RATED HEAT INPUT OF ALL DIRECT AND INDIRECT HEATING EQUIPMENT AT THE PARTICULAR LOCATION Million BTU/Hr.	EMISSION LIMITATIONS LBS. PER MILLION BTU		
		Particulate Matter All Fuels	SO_2 Solid Fuels	SO_2 Liquid Fuels
A. Within Minneapolis-St. Paul Air Quality Control Region				
Greater than 250	Greater than 250	0.4	3.0	1.6
Less than or equal to 250	Greater than 250	0.4	3.0	1.6
Less than or equal to 250	Less than or equal to 250	0.4	4.0	2.0
B. Within the City of Duluth				
Greater than 250	Greater than 250	0.4	4.0	2.0
Less than or equal to 250	Greater than 250	0.4	4.0	2.0
Less than or equal to 250	Less than or equal to 250	0.4	N.A.*	N.A.
C. Outside Minneapolis-St. Paul Air Quality Control Region and Outside the City of Duluth				
Greater than 250	Greater than 250	0.6	4.0	2.0
Less than or equal to 250	Greater than 250	0.6	4.0	2.0
Less than or equal to 250	Less than or equal to 250	0.6	N.A.	N.A.

*N.A.–Not applicable

Statutory Authority: *MS s 116.07 subd 4*

7005.0400 TABLE II: NEW SOURCES.

RATED HEAT INPUT OF THE INDIRECT HEATING EQUIPMENT Million BTU/Hr.	RATED HEAT INPUT OF ALL DIRECT AND INDIRECT HEATING EQUIPMENT AT THE PARTICULAR LOCATION Million BTU/Hr.	EMISSION LIMITATIONS LBS. PER MILLION BTU					
		Particulate Matter All Fuels	SO_2 Solid Fuels	SO_2 Liquid Fuels	NO_x* Solid Fuels	NO_x* Gaseous Fuels	NO_x* Liquid Fuels
A. Within Minneapolis-St. Paul Air Quality Control Region							
Greater than 250	Greater than 250	0.1	1.2	0.8	0.7	0.2	0.3
Greater than 100 but less than or equal to 250	Greater than 250	0.1	3.0	1.6	N.A.**	N.A.	N.A.
Less than or equal to 100	Greater than 250	0.4	3.0	1.6	N.A.	N.A.	N.A.
Less than or equal to 250	Less than or equal to 250	0.4	4.0	2.0	N.A.	N.A.	N.A.
B. Within the City of Duluth							
Greater than 250	Greater than 250	0.1	1.2	0.8	0.7	0.2	0.3
Greater than 100 but less than or equal to 250	Greater than 250	0.1	4.0	2.0	N.A.	N.A.	N.A.
Less than or equal to 100	Greater than 250	0.4	4.0	2.0	N.A.	N.A.	N.A.
Less than or equal to 250	Less than or equal to 250	0.4	N.A.	N.A.	N.A.	N.A.	N.A.
C. Outside Minneapolis-St. Paul Air Quality Control Region and Outside the City of Duluth							
Greater than 250	Greater than 250	0.1	1.2	0.8	0.7	0.2	0.3
Less than or equal to 250	Greater than 250	0.4	4.0	2.0	N.A.	N.A.	N.A.
Less than or equal to 250	Less than or equal to 250	0.4	N.A.	N.A.	N.A.	N.A.	N.A.

*NO_x expressed as NO_2
**N.A.–Not applicable

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR INDUSTRIAL PROCESS EQUIPMENT

7005.0450 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.0450 to 7005.0520, the following words shall have the meanings defined herein.

Subp. 2. **Collection efficiency.** "Collection efficiency" means the percent of the total amount of particulate matter entering the control equipment which is removed from the exhaust stream by the control equipment and is calculated by the following equation:

$$\text{collection efficiency} = \frac{100(A - B)}{A}$$

where:

A = the amount (grams or pounds) or the concentration (gr/SCF) of particulate matter entering the collection equipment; and

B = the amount (grams or pounds) or the concentration (gr/SCF) of particulate matter leaving the control equipment.

Subp. 3. **Industrial process equipment.** "Industrial process equipment" means any equipment, apparatus, or device embracing chemical, industrial, or manufacturing facilities such as ovens, mixing kettles, heating and reheating furnaces, kilns, stills, dryers, roasters, and equipment used in connection therewith, and all other methods or forms of manufacturing or processing that may emit any air contaminant such as smoke, odor, particulate matter, or gaseous matter. Industrial process equipment is an affected facility. An emission facility may consist of more than one unit of industrial process equipment.

Subp. 4. **Process weight.** "Process weight" means the total weight in a given time period of all materials introduced into any industrial process equipment that may cause any emission of particulate matter. Solid fuels charged are considered as part of the process weight, but liquid and gaseous fuels and combustion air are not. For a cyclical or batch operation, the process weight per hour is derived by dividing the total process weight by the number of hours in one complete operation from the beginning of any given process to the completion thereof, excluding any time during which the equipment is idle. For a continuous operation, the process weight per hour is derived by dividing the process weight for a typical period of time.

Statutory Authority: *MS s 116.07 subd 4*

7005.0460 SCOPE.

Parts 7005.0450 to 7005.0520 shall apply to industrial process equipment for which a standard of performance has not been promulgated in a specific rule.

Statutory Authority: *MS s 116.07 subd 4*

7005.0470 STANDARDS OF PERFORMANCE FOR PRE-1969 INDUSTRIAL PROCESS EQUIPMENT.

Subpart 1. **Prohibited discharge of gases.** No owner or operator of any industrial process equipment which was in operation before July 9, 1969, shall cause to be discharged into the atmosphere from the industrial process equipment any gases which:

A. in any one hour contain particulate matter in excess of the amount permitted in part 7005.0510 for the allocated process weight; provided that the owner or operator shall not be required to reduce the particulate matter emission below the concentration permitted in part 7005.0520 for the appropriate source gas volume; provided further that regardless of the mass emission permitted by part 7005.0510, the owner or operator shall not be permitted to emit particulate matter in a concentration in excess of 0.30 grains per standard cubic foot of exhaust gas; or

B. exhibit greater than 20 percent opacity, except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.

Subp. 2. **Compliance.** The owner or operator of any industrial process equipment which was in operation before July 9, 1969, which has control equipment with a collection efficiency of not less than 99 percent by weight shall be considered in compliance with the requirements of subpart 1, item A.

Subp. 3. **Equipment located outside of Saint Paul, Minneapolis, and Duluth.** The owner or operator of any industrial process equipment which was in operation before July 9, 1969, which is located outside the Minneapolis-Saint Paul Air Quality Control Region and the city of Duluth, which is located not less than one-fourth mile from any residence or public roadway, and which has control equipment with a collection efficiency of not less than 85 percent by weight, and the operation of the entire emission facility does not cause a violation of the ambient air quality standards, shall be considered in compliance with the requirements of subpart 1, item A.

Statutory Authority: *MS s 116.07 subd 4*

7005.0480 STANDARDS OF PERFORMANCE FOR POST-1969 INDUSTRIAL PROCESS EQUIPMENT.

Subpart 1. **Prohibited discharge of gases.** No owner or operator of any industrial process equipment which was not in operation before July 9, 1969, shall cause to be discharged into the atmosphere from the industrial process equipment any gases which:

A. in any one hour contain particulate matter in excess of the amount permitted in part 7005.0510 for the allocated process weight; provided that the owner or operator shall not be required to reduce the particulate matter emission below the concentration permitted in part 7005.0520 for the appropriate source gas volume; provided that regardless of the mass emission permitted by part 7005.0510, the owner or operator shall not be permitted to emit particulate matter in a concentration in excess of 0.30 grains per standard cubic foot of exhaust gas; or

B. exhibit greater than 20 percent opacity.

Subp. 2. **Compliance.** The owner or operator of any industrial process equipment which was not in operation before July 9, 1969, which has control equipment with a collection efficiency of not less than 99.7 percent by weight shall be considered in compliance with the requirements of subpart 1, item A.

Subp. 3. **Equipment located outside of Saint Paul, Minneapolis, and Duluth.** The owner or operator of any industrial equipment which was in operation after July 9, 1969, which is located outside the Minneapolis-Saint Paul Air Quality Control Region and the city of Duluth, which is located not less than one-fourth mile from any residence or public roadway, and which has control equipment with a collection efficiency of not less than 85 percent by weight, and the operation of the entire emission facility does not cause a violation of the ambient air quality standards, shall be considered in compliance with the requirements of subpart 1, item A.

Statutory Authority: *MS s 116.07 subd 4*

7005.0490 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any owner or operator required to submit performance tests for any industrial process equipment shall utilize the following test methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 3 for gas analysis;

D. Method 5 for the concentration of particulate matter and associated moisture content; and

E. Method 9 for visual determination of the opacity of emissions from stationary sources.

Statutory Authority: *MS s 116.07 subd 4*

7005.0500 PERFORMANCE TEST PROCEDURES.

In the event that emissions from any industrial process equipment contain organic vapors which condense at standard conditions of temperature and pressure, the following changes in method 5 for determining particulate emissions shall be made:

A. Paragraph 4.2, Sample Recovery in method 5 is amended to read as follows:

4.2 Sample Recovery. Exercise care in moving the collection train from the test site to the sample recovery area so as to minimize the loss of collected sample or the gain of extraneous particulate matter. Set aside a portion of the acetone and water used in the sample recovery as a blank for analysis. Place the samples in containers as follows:

Container #1. Remove the filter from its holder, place in this container, and seal.

Container #2. Place loose particulate matter and water and acetone washings from all sample-exposed surfaces preceding the filter paper in this container and seal. The probe and nozzle should be scrubbed with a stiff brush and distilled water, followed by an acetone rinse. If these solvents do not do a good cleaning job, an adequate solvent must be found and used. Use a razor blade or rubber policeman to loosen adhering particles if necessary.

Container #3. Measure the volume of water from the first three impingers and place the water in this container. Place water rinsings of all sample-exposed surfaces between the filter and fourth impinger in this container prior to sealing.

Container #4. Transfer the silica gel from the fourth impinger to the original container and seal. Use a rubber policeman as an aid in removing silica gel from the impinger.

Container #5. Thoroughly rinse all sample-exposed surfaces between the filter paper and fourth impinger with acetone, place the washings in this container, and seal.

B. Paragraph 4.3, Analysis in Method 5 is amended to read as follows:

4.3 Analysis. Record the data required on the example sheet shown in figure 5-3. Handle each sample container as follows:

Container #1. Transfer the filter and any loose particulate matter from the sample container to a tared glass weighing dish, desiccate, and dry to a constant weight. Report results to the nearest 0.5 milligram.

Container #2. Transfer the washings to a tared beaker and evaporate to dryness at ambient temperature and pressure. Desiccate and dry to a constant weight. Weigh to the nearest 0.5 milligram.

Container #3. Extract organic particulate matter from the impinger solution with three 25 ml portions of chloroform. Complete the extraction with three 25 ml portions of ethyl ether. Combine the ether and chloroform extracts, transfer to a tared beaker and evaporate at 70 degrees Fahrenheit until no solvent remains. Desiccate, dry to a constant weight, and report the results to the nearest 0.5 milligram.

Container #4. Weigh the spent silica gel and report to the nearest gram.

Container #5. Transfer the acetone washings to a tared beaker and evaporate to dryness at ambient temperature and pressure. Desiccate, dry to a constant weight, and report the results to the nearest 0.5 milligram.

Statutory Authority: *MS s 116.07 subd 4*

7005.0510 TABLE 1.

Process Weight Rate (pounds/hour)	Emission Rate (pounds/hour)
50	0.08
100	0.55
500	1.53
1,000	2.25
5,000	6.34
10,000	9.73
20,000	14.99
60,000	29.60
80,000	31.19
120,000	33.28
160,000	34.85
200,000	36.11
400,000	40.35
1,000,000	46.72

Interpolation of the data in this part for the process weight rates up to 60,000 pounds/hour shall be accomplished by the use of the equation:

$$E = 3.59P^{0.62}$$
$$<$$
$$P = 30 \text{ tons/hour}$$

and interpolation and extrapolation of the data for process weight rates in excess of 60,000 pounds/hour shall be accomplished by use of the equation:

$$E = 17.31P^{0.16}$$
$$P > 30 \text{ tons/hour}$$

where:

E = emissions in pounds per hour;

P = process weight rate in tons per hour.

Statutory Authority: *MS s 116.07 subd 4*

7005.0520 TABLE 2.

Source Gas Volume, SCFM[a]	Concentration GR/SCF[b]
7,000 or less	0.100
8,000	0.096
9,000	0.092
10,000	0.089
20,000	0.071
30,000	0.062
40,000	0.057
50,000	0.053
60,000	0.050
80,000	0.045
100,000	0.042
120,000	0.040
140,000	0.038
160,000	0.036
180,000	0.035

200,000	0.034
300,000	0.030
400,000	0.027
500,000	0.025
600,000	0.024
800,000	0.021
1,000,000 or more	0.020

[a]Standard cubic feet per minute

[b]Grains per standard cubic foot.

Statutory Authority: *MS s 116.07 subd 4*

CONTROL OF FUGITIVE PARTICULATE MATTER

7005.0550 PREVENTING PARTICULATE MATTER FROM BECOMING AIRBORNE.

No person shall cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne.

No person shall cause or permit a building or its appurtenances or a road, or a driveway, or an open area to be constructed, used, repaired, or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne. The director may require such reasonable measures as may be necessary to prevent particulate matter from becoming airborne including, but not limited to, paving or frequent clearing of roads, driveways, and parking lots; application of dust-free surfaces; application of water; and the planting and maintenance of vegetative ground cover.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR INCINERATORS

7005.0600 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.0600 to 7005.0650 the following words shall have the meanings defined herein.

Subp. 2. **Incinerator.** "Incinerator" means any furnace or other device used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter.

Subp. 3. **Solid waste.** "Solid waste" means garbage, refuse, and other discarded solid materials, except animal waste used as fertilizer, including solid waste materials resulting from industrial, commercial, and agricultural operations, and from community activities. Solid waste does not include earthen fill, boulders, rock, and other materials normally handled in construction operations, solids or dissolved material in domestic sewage, or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial waste water effluents, dissolved materials in irrigation return flows, or other common water pollutants.

Subp. 4. **Burning capacity.** "Burning capacity" means the manufacturer's or designer's maximum rate or such other rate that is considered good engineering practice and accepted by the director.

Statutory Authority: *MS s 116.07 subd 4*

7005.0610 STANDARDS OF PERFORMANCE FOR EXISTING INCINERATORS.

Subpart 1. **Maximum particulate matter; capacity less than 200 pounds per hour.** No owner or operator of an existing incinerator with a maximum refuse

burning capacity of less than 200 pounds per hour shall cause to be discharged into the atmosphere from the incinerator any gases which contain particulate matter in excess of 0.3 gr/dscf corrected to 12 percent CO_2.

Subp. 2. **Capacity of 200 to 2,000 pounds per hour.** No owner or operator of an existing incinerator with a maximum refuse burning capacity of 200 to 2,000 pounds per hour shall cause to be discharged into the atmosphere from the incinerator any gases which contain particulate matter in excess of 0.2 gr/dscf corrected to 12 percent CO_2.

Subp. 3. **Capacity of more than 2,000 pounds per hour.** No owner or operator of an existing incinerator with a maximum refuse burning capacity of more than 2,000 pounds per hour shall cause to be discharged into the atmosphere from the incinerator any gases which contain particulate matter in excess of 0.1 gr/dscf corrected to 12 percent CO_2.

Subp. 4. **Opacity.** No owner or operator of an existing incinerator of any burning capacity shall cause or permit the emission of smoke or any other air contaminant which is greater than 20 percent opacity, except that a maximum of 40 percent opacity shall be permissible for four minutes in any 60-minute period.

Subp. 5. **Requirements for afterburner.** No owner or operator of an existing incinerator of any burning capacity shall burn type 2, 3, 4, 5, or 6 waste as classified by the Incinerator Institute of America unless said incinerator utilizes auxiliary fuel burners that maintain a minimum temperature of 1,200 degrees Fahrenheit for a minimum retention time of 0.3 second.

Statutory Authority: *MS s 116.07 subd 4*

7005.0620 STANDARDS OF PERFORMANCE FOR NEW INCINERATORS.

Subpart 1. **Capacity less than 200 pounds per hour.** No owner or operator of a new incinerator with a maximum refuse burning capacity of less than 200 pounds per hour shall cause to be discharged into the atmosphere from the incinerator any gases which contain particulate matter in excess of 0.2 gr/dscf corrected to 12 percent CO_2.

Subp. 2. **Capacity of 200 to 2,000 pounds per hour.** No owner or operator of a new incinerator with a maximum refuse burning capacity of 200 to 2,000 pounds per hour shall cause to be discharged into the atmosphere from the incinerator any gases which contain particulate matter in excess of 0.15 gr/dscf corrected to 12 percent CO_2.

Subp. 3. **Capacity of 2,001 to 3,999 pounds per hour.** No owner or operator of a new incinerator with a maximum refuse burning capacity of more than 2,000 but less than 4,000 pounds per hour shall cause to be discharged into the atmosphere from the incinerator any gases which contain particulate matter in excess of 0.1 gr/dscf corrected to 12 percent CO_2.

Subp. 4. **Capacity greater than 4,000 pounds per hour.** No owner or operator of a new incinerator with a maximum refuse burning capacity of 4,000 pounds per hour or more shall cause to be discharged into the atmosphere from the incinerator any gases which contain particulate matter in excess of 0.08 gr/dscf corrected to 12 percent CO_2.

Subp. 5. **Opacity.** No owner or operator of a new incinerator of any burning capacity shall cause or permit the emission of smoke or any other contaminant which is greater than 20 percent opacity.

Subp. 6. **Requirements for afterburner.** No owner or operator of a new incinerator of any burning capacity shall burn type 2, 3, 4, 5, or 6 waste as classified by the Incinerator Institute of America unless said incinerator utilizes auxiliary fuel burners that maintain a minimum temperature of 1,200 degrees Fahrenheit for a minimum retention time of 0.3 second.

Statutory Authority: *MS s 116.07 subd 4*

7005.0630 MONITORING OF OPERATIONS.

The owner or operator of any incinerator shall record the daily charging rate and hours of operation.

Statutory Authority: *MS s 116.07 subd 4*

7005.0640 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any owner or operator required to submit performance tests for an incinerator shall utilize the following methods (defined in part 7005.0100):

A. Method 5 for the concentration of particulate matter and the associated moisture content;

B. Method 1 for sample and velocity traverses;

C. Method 2 for velocity and volumetric flow rate;

D. Method 3 for gas analysis and calculation of excess air, using the integrated sample technique; and

E. Method 9 for visual determination of opacity.

Statutory Authority: *MS s 116.07 subd 4*

7005.0650 PERFORMANCE TEST PROCEDURES.

Subpart 1. **Method 5.** For Method 5, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the agency.

Subp. 2. **Wet scrubber.** If a wet scrubber is used, the gas analysis sample shall reflect flue gas conditions after the scrubber, allowing for carbon dioxide absorption by sampling the gas on the scrubber inlet and outlet sides according to the following procedure:

A. The outlet sampling site shall be the same as for the particulate matter measurement. The inlet site shall be selected according to Method 1, or as specified by the agency.

B. Randomly select nine sampling points within the cross section at both the inlet and outlet sampling sites. Use the first set of three for the first run, the second set for the second run, and the third set for the third run.

C. Simultaneously with each particulate matter run, extract and analyze for CO_2 an integrated gas sample according to Method 3, traversing the three sample points and sampling at each point for equal increments of time. Conduct the runs at both inlet and outlet sampling sites.

D. Measure the volumetric flow rate at the inlet during each particulate matter run according to Method 2, using the full number of traverse points. For the inlet make two full velocity traverses approximately one hour apart during each run and average the results. The outlet volumetric flow rate may be determined from the particulate matter run (Method 5).

E. Calculate the adjusted CO_2 percentage using the following equation:

$(\%CO_2)$ adj = $(\%CO_2)$ di (Qdi/Qdo)

where:

$(\%CO_2)$ adj is the adjusted CO_2 percentage which removes the effect of CO_2 absorption and dilution air;

$(\%CO_2)$ di is the percentage of CO_2 measured before the scrubber, dry basis;

Qdi is the volumetric flow rate before the scrubber, average of two runs, dscf/min using Method 2; and

Qdo is the volumetric flow rate after the scrubber, dscf/min using Methods 2 and 5.

Subp. 3. **Alternate procedures.** The following procedures may be substituted for the procedures under items C to E:

A. Simultaneously with each particulate matter run, extract and analyze for CO_2, O_2, and N_2 an integrated gas sample according to Method 3, traversing the three sample points and sampling for equal increments of time at each point. Conduct the runs at both the inlet and outlet sampling sites.

B. After completing the analysis of the gas sample, calculate the percentage of excess air (EA) for both the inlet and outlet sampling sites using the following equation:

$$\%EA = \frac{(\%O_2) - 0.5(\%CO)}{0.264(\%N_2) - (\%O_2) + 0.5(\%CO)} \times 100$$

where:

%EA = percent excess air

$\%O_2$ = percent oxygen by volume, dry basis

$\%N_2$ = percent nitrogen by volume, dry basis

%CO = percent carbon monoxide volume, dry basis

0.264 = ratio of oxygen to nitrogen in air by volume

C. Calculate the adjusted CO_2 percentage using the following equation:

$$(\%CO_2)\,\text{adj} = (\%CO_2)\,\text{di} \frac{100 + (\%EA)_i}{100 + (\%EA)_0}$$

where:

$(\%CO_2)$ adj is the adjusted outlet CO_2 percentage;

$(\%CO_2)$ di is the percentage of CO_2 measured before the scrubber, dry basis;

$(\%EA)_i$ is the percentage of excess air at the inlet; and

$(\%EA)_0$ is the percentage of excess air at the outlet.

Subp. 4. **Particulate matter.** Particulate matter emissions, expressed in g/dscm, shall be corrected to 12 percent CO_2 by using the following formula:

$$c_{12} = \frac{12c}{\%CO_2}$$

where:

c_{12} is the concentration of particulate matter corrected to 12 percent CO_2;

c is the concentration of particulate matter as measured by Method 5; and

$\%CO_2$ is the percentage of CO_2 as measured by Method 3, or when applicable, the adjusted outlet CO_2 percentage as determined by subpart 2 or 3.

Statutory Authority: *MS s 116.07 subd 4*

OPEN BURNING RESTRICTIONS AND PERMITTING REQUIREMENTS

7005.0700 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.0700 to 7005.0820 the following words shall have the meanings defined herein.

Subp. 2. **Approved waste burner.** "Approved waste burner" means an incinerator or other burner constructed of fire resistant material having a capacity of not less than three bushels, a cover which is closed when in use, and maximum openings in the top or sides no greater than one inch in diameter.

Subp. 3. **Building material.** "Building material" means lumber, wood shakes, and other wood products but shall not include composite shingles, tar paper, insulation, wall board, wiring, or other similar smoke producing materials.

Subp. 4. **Diseased shade tree.** "Diseased shade tree" means any tree infected by dutch elm disease or oak wilt disease or any tree constituting a hazard to a disease control program established by the Department of Agriculture pursuant to Minnesota Statutes, section 18.023.

Subp. 5. **Disposal facility.** "Disposal facility" means a facility or site permitted by the Minnesota Pollution Control Agency for the intermediate or final disposal of solid waste.

Subp. 6. **Garbage.** "Garbage" means discarded material resulting from the handling, processing, storage, preparation, serving, and consumption of food.

Subp. 7. **Metropolitan area.** "Metropolitan area" means the area included within the counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington.

Subp. 8. **Open burning.** "Open burning" means the burning of any matter whereby the resultant combustion products are emitted directly to the atmosphere without passing through an adequate stack, duct, or chimney.

Subp. 9. **Refuse collection service.** "Refuse collection service" means a public or private operation engaged in solid waste collection and transportation.

Subp. 10. **Rubbish.** "Rubbish" means nonputrescible solid waste, such as paper, cardboard, yard clippings, and other natural matter not including garbage.

Subp. 11. **Wetland.** "Wetland" means natural marsh where water stands near, at, or above the soil surface during a significant portion of most years.

Statutory Authority: *MS s 116.07 subd 4*

7005.0710 OPEN BURNING RESTRICTION.

No person shall cause, allow, or permit open burning.

Statutory Authority: *MS s 116.07 subd 4*

7005.0720 EXEMPTIONS.

Subpart 1. **Unincorporated areas.** In unincorporated areas where no refuse collection service is available, the open burning of rubbish originating from single residential premises may be conducted in approved waste burners.

Subp. 2. **Cities without refuse collection service.** In any city where no refuse collection service is available, the local unit of government may apply to the director for permission to allow the open burning of rubbish originating from single residential premises in approved waste burners.

Subp. 3. **Availability of refuse collection service.** Refuse collection service shall be deemed available as delineated in the county solid waste management plan, as adopted by the county and approved by the agency.

Statutory Authority: *MS s 116.07 subd 4*

7005.0730 PROHIBITION OF SALVAGE OPERATIONS BY OPEN BURNING.

Subpart 1. **Restriction.** No person shall conduct, cause, or permit salvage operations by open burning.

Subp. 2. **Permit required.** No person shall possess, transport, or process motor vehicles or scrap metals which have been reduced by open burning or incineration in a device or equipment which has not received an operating permit from this agency.

Statutory Authority: *MS s 116.07 subd 4*

7005.0740 OPEN BURNING BY PERMIT.

Open burning may be conducted if an open burning permit is obtained pursuant to parts 7005.0700 to 7005.0820 and the open burning is conducted in accordance with the requirements of parts 7005.0700 to 7005.0820 and the conditions of the permit.

Statutory Authority: *MS s 116.07 subd 4*

7005.0750 PERMIT APPLICATIONS.

Subpart 1. **Application.** Application for open burning permits may be made in cases where fires are proposed to be set for the following purposes:

A. bona fide instruction and training of fire fighting personnel and for the testing of fire extinguishing equipment;

B. elimination of fire or health hazards which cannot be abated by any other practicable means;

C. activities in accordance with accepted forest or game management;

D. ground thawing for utility repair and construction;

E. the disposal of trees, brush, grass, and other vegetative matter in the development of land and right-of-way maintenance;

F. the disposal of diseased shade trees;

G. the disposal of trees and brush in areas outside the metropolitan area;

H. activities in accordance with accepted agricultural practices;

I. the disposal of building material generated by construction; and

J. the disposal of building material generated by the demolition of noncommercial or noninstitutional structures.

Subp. 2. **Restrictions.** A burning permit shall be issued on a prescribed form to the applicant if the burning is for one of the purposes set forth in subpart 1 and the applicant agrees that all burning shall be conducted under the following circumstances:

A. The prevailing wind at the time of the burning shall be away from nearby residences.

B. The burning shall be conducted as far away as practical from any highway or public road and controlled so that a traffic hazard is not created.

C. The burning may not be conducted during the duration of an air pollution alert, warning, or emergency.

D. The recipient of the permit or his authorized representative shall be present for the duration of any fire authorized by the permit.

E. Prior notice shall be given to the local department of natural resources forest officer, local fire marshal, or local fire chief of the time and location of any fire authorized by the permit.

F. Open burning for ground thawing shall be conducted in accordance with the following additional restrictions:

(1) Fuels and starting materials shall be of a kind which do not generate appreciable smoke.

(2) Coke used for ground thawing within 500 feet of dwellings or occupied buildings shall contain less than one percent sulfur.

(3) Ambient air quality standards for sulfur dioxide and carbon monoxide shall not be exceeded at occupied residences other than those located on the property on which the burning is being conducted.

(4) Propane gas thawing torches or other devices causing minimal pollution shall be used when practicable.

G. Open burning of materials pursuant to subpart 1, items E to J shall be conducted in accordance with the following additional restrictions:

(1) The location of the burning shall not be within 600 feet of an occupied residence other than those located on the property on which the burning is conducted.

(2) Oils, rubber, and other similar smoke producing materials shall not be burned or used as starting materials.

(3) The burning shall not be conducted within one mile of any airport or landing strip, unless approved by the director.

H. Open burning of materials pursuant to subpart 1, item I shall also only be conducted under controlled burning methods approved by the director.

I. The burning is conducted under such other reasonable conditions as the permit issuing authority may impose.

Statutory Authority: *MS s 116.07 subd 4*

7005.0760 PERMIT ISSUERS.

In addition to the agency, the following persons are authorized to accept applications and issue open burning permits:

A. a department of natural resources forest officer for locations within his jurisdiction;

B. a local department of natural resources fire warden for locations within his jurisdiction;

C. upon approval of the agency, a local pollution control agency for locations within its jurisdiction;

D. a person(s) designated by the county board of commissioners and approved by the director for locations within the county but outside the corporate limits of cities within the county;

E. upon the approval of the director, either a fire chief or a person designated by a township or city for locations within the jurisdiction of said governmental unit; and

F. a regional director of the agency or an employee of the agency authorized by the director, who may in their discretion refer the applicant to a local permit issuing authority.

Statutory Authority: *MS s 116.07 subd 4*

7005.0770 PERMIT DENIAL.

Any permit application submitted pursuant to parts 7005.0700 to 7005.0820 shall be denied if:

A. a reasonable, practical alternative method of disposal of the material is available; or

B. a nuisance condition would result from the burning.

Statutory Authority: *MS s 116.07 subd 4*

7005.0780 PERMIT REVOCATION.

Any permit is subject to revocation at the discretion of the director, a department of natural resources forest officer, the local fire marshal or fire chief, or the permit issuer, if:

A. a reasonable practical method of disposal of the material is found;

B. a fire hazard exists or develops during the course of the burning; or

C. any of the conditions of the permit are violated.

Statutory Authority: *MS s 116.07 subd 4*

7005.0790 LIABILITY.

Exemption to conduct open burning or the granting of an open burning permit under any provisions of parts 7005.0700 to 7005.0820 does not excuse a person from the consequences, damages, or injuries which may result therefrom.

Statutory Authority: *MS s 116.07 subd 4*

7005.0800 CONFLICTING LAWS.

Nothing in parts 7005.0700 to 7005.0820 shall be construed to allow open burning in those areas in which open burning is prohibited by other laws, regulations, or ordinances.

Statutory Authority: *MS s 116.07 subd 4*

7005.0810 RECREATIONAL FIRES.

Fires set for recreational, ceremonial, food preparation, or social purposes are permitted provided only wood, coal, or charcoal is burned.

Statutory Authority: *MS s 116.07 subd 4*

7005.0820 DISEASED SHADE TREE OPEN BURNING SITES.

Subpart 1. **Open burning permitted.** Open burning of diseased shade trees shall be permitted provided no reasonable alternate method of disposal exists as determined by the agency, a permit is obtained pursuant to parts 7005.0700 to 7005.0820, and the open burning is conducted in accordance with the requirements of parts 7005.0700 to 7005.0820 and the conditions of the permit.

Subp. 2. **Site location.** The site shall be located in accordance with the following conditions or as approved by the director of air quality:

A. not less than 1,000 feet from an occupied building;

B. not less than 1,000 feet from a public roadway;

C. not less than one mile from an airport or landing strip;

D. not less than 300 feet from a stream; and

E. not within wetland.

Subp. 3. **Site preparation.** The site shall be prepared in accordance with the following:

A. Access to the site shall be controlled by a gate which shall be locked when an attendant is not on duty.

B. Approach roads to the disposal site and access roads on the site shall be maintained so that they shall be passable at all specified times.

C. A permanent sign identifying the operation indicating the hours and days the site is open for use, rates, the penalty for nonconforming dumping, and other pertinent information shall be posted at the site entrance.

D. Surface water drainage shall be diverted around and away from the operating area and ash storage areas.

Subp. 4. **Site operation.** The site shall be operated in accordance with the following conditions:

A. Only diseased shade trees and/or tree trimmings shall be disposed of on the site.

B. Qualified personnel for general direction and operation of the site shall be on duty at all times while the site is open for use and for the duration of any fire on the site.

C. Burning shall be conducted only when weather conditions are such that a nuisance, health, or safety hazard will not be created.

D. Prior notice shall be given to the local fire authority of the time and duration of each fire.

E. Adequate dust control shall be provided on the site and on the roads leading to the site.

F. Ash residue shall be collected on a periodic basis and disposed of in an agency-permitted sanitary landfill.

Subp. 5. **Site termination.** The site shall be terminated in accordance with the following:

A. All materials extraneous to the site shall be removed and disposed of in an appropriate manner.

B. The site shall be returned to a state equal to its surroundings.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR ODOROUS EMISSIONS

7005.0900 DEFINITIONS.

Subpart 1. **Scope.** The following definitions shall apply in the interpretation and enforcement of parts 7005.0900 to 7005.0960 and the following words and terms wherever they occur in parts 7005.0900 to 7005.0960 are defined as follows.

Subp. 2. **Ambient air.** "Ambient air" shall mean that portion of the atmosphere external to buildings to which the general public has access.

Subp. 3. **Odor concentration unit.** "Odor concentration unit" shall mean the number of standard cubic feet of odor-free air needed to dilute each cubic foot of contaminated air so that at least 50 percent of the odor concentration test panel does not detect any odor in the diluted mixture.

Subp. 4. **Odor emission rate.** "Odor emission rate" shall mean the product of the number of standard cubic feet per minute of air or other gases emitted from a suspected odor pollution source and the number of odor concentration units determined for that source.

Subp. 5. **Odor source.** "Odor source" shall be defined as to include but not be limited to any stack, chimney, vent, window, opening, lagoon, basin, catchbasin, pond, open tank, storage tank, storage pile, or any organic or inorganic discharge and/or application which emits odorous gas, gases, or particulates.

Statutory Authority: *MS s 116.07 subd 4*

7005.0910 ODOROUS AIR POLLUTION PROHIBITED.

No person shall cause, permit, or allow emission into the ambient air of odorous air contaminants in excess of the standards and parameters of part 7005.0920. Such excessive emissions are air pollution in one or more of the ways enumerated in Minnesota Statutes, section 116.06, subdivisions 2 and 3.

Statutory Authority: *MS s 116.07 subd 4*

7005.0920 ODOR EMISSION LIMITS.

Violation of part 7005.0910 shall be any discharge of air contaminants in excess of the following odor emission limits:

A. Odor sources emitting from well-defined stacks 50 feet or more above grade elevation and with adequate dispersion characteristics as determined by the agency shall not emit odors in greater than 150 odor concentration units.

B. Odor sources of less than 50 feet elevation above grade or otherwise failing to create good dispersion conditions as determined by the agency shall not emit more than 25 odor concentration units.

C. No odor source shall have an odor emission rate in excess of 1,000,000 odor concentration units per minute.

D. No odor source shall emit air contaminants into the ambient air which cause odor outside the alleged polluter's property line in excess of the following limitations:

(1) one odor unit in areas zoned residential, recreational, institutional, retail sales, hotel, or educational;

(2) two odor units in areas zoned light industrial; and

(3) four odor units in areas zoned other than in subitems (1) and (2).

Statutory Authority: *MS s 116.07 subd 4*

7005.0930 ODOR TESTING.

Odor testing shall be conducted as follows:

A. Odor tests shall be conducted by the agency or under agency supervision and advisement.

B. Odor test panel members shall be selected or approved by the agency.

C. Ambient air samples containing the alleged odorous air pollution obtained downwind and outside the property line of the alleged polluter, and samples of the air contaminant from the odor source allegedly causing the odorous air pollution shall be obtained.

D. Procedures for obtaining such samples and presenting such samples to the test panel for tests shall be accomplished according to American Society

for Testing Materials Method D-1391-57, or by other method approved by the agency. The panel testing procedure shall be conducted by the method described by D. M. Benforado, W. J. Rotella, and D. L. Horton, "Development of an Odor Panel for Evaluation of Odor Control Equipment", Journal of the Air Pollution Control Association, Volume 19, Number 2, Pages 101-105, February 1969; or by other method approved by the agency.

E. All odor test panel members shall have a smell exposure to determine the odor concentration of the alleged air contaminant at the odor source and in the ambient air sample, and shall be questioned as to whether the air contaminant in the ambient air sample is contained in the sample obtained from the odor source of the alleged discharger. All responses shall be recorded under oath and notarized.

Statutory Authority: *MS s 116.07 subd 4*

7005.0940 EQUIPMENT BREAKDOWN.

No person shall operate any process, process equipment, fuel-burning equipment, or refuse-burning equipment when such process or equipment is out of repair and causing or permitting odorous air pollution. Emissions violating part 7005.0920 as a direct result of upset conditions in, or breakdown of any process, process equipment, fuel-burning equipment, or control equipment or related operating equipment beyond the control of the person owning or operating such equipment, shall not be deemed to be in violation of parts 7005.0910 and 7005.0920, provided that the owner or operator advises the agency of the circumstances within 24 hours of the breakdown, and outlines a corrective program within seven days of the breakdown. The agency may permit operation on a temporary basis during the period of such an emergency shutdown not to exceed 30 days from the breakdown if such operation will not create an immediate serious public health or safety hazard. No equipment as defined above shall be operated which has an unreasonable breakdown frequency as determined by the agency.

Statutory Authority: *MS s 116.07 subd 4*

7005.0950 AGRIBUSINESS EXCEPTION.

The odor of growing vegetation shall not be considered odorous air pollution. The odor of domestic (organic) fertilizer, industrial (inorganic) fertilizer, and pesticides shall not be considered odorous air pollution if such substances are used effectively according to their intended purposes and application. The open storage (piling) of such materials shall be accomplished in a nuisance-free manner and in compliance with the regulations of federal, state, and local government and their regulatory agencies.

Statutory Authority: *MS s 116.07 subd 4*

7005.0960 DEFENSE TO CIVIL ACTION.

Compliance with the provisions of parts 7005.0910 to 7005.0950 shall not operate as a defense to an action at law based upon a public and/or private nuisance theory.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR ODOROUS EMISSIONS FROM PROCESSING ANIMAL MATTER

7005.1000 DEFINITION: REDUCTION OF ANIMAL MATTER.

For purposes of parts 7005.1000 to 7005.1040 the word "reduction" is defined as any heated process, including rendering, cooking, drying, dehydrating, digesting, evaporating, and protein concentrating. "Animal matter" is defined as any product or derivative of animal life.

Statutory Authority: *MS s 116.07 subd 4*

7005.1010 SCOPE.

The provisions of parts 7005.1000 to 7005.1040 shall not apply to any device, machine, equipment, or other contrivance used exclusively for the processing of food for human consumption in food service establishments.

Statutory Authority: *MS s 116.07 subd 4*

7005.1020 FOOD SERVICE ESTABLISHMENT.

A food service establishment shall include: any fixed or mobile restaurant; coffee shop; cafeteria; short-order cafe; luncheonette; grill; tearoom; sandwich shop; soda fountain; tavern; bar; cocktail lounge; night club; roadside stand; industrial feeding establishment; private, public, or nonprofit organization or institution routinely serving food; catering kitchen, commissary, or similar place in which food or drink is placed for sale or for service on the premises or elsewhere; and any other eating or drinking establishment or operation where food is served or provided for the public with or without charge.

Statutory Authority: *MS s 116.07 subd 4*

7005.1030 ODOR CONTROL EQUIPMENT REQUIRED ON REDUCTION PROCESSES.

No person shall operate or use any device, machine, equipment, or other contrivance for the reduction of animal matter unless all gases, vapors, and gas-entrained effluents from such facility are incinerated at a temperature of not less than 1,500 degrees Fahrenheit for a period of not less than 0.3 second, or processed in such manner as determined by the director to be equally or more effective for the purpose of air pollution control.

A person incinerating or processing gases, vapors, or gas-entrained effluents pursuant to this part shall provide, properly install, and maintain in good working order and in operation, devices as specified by the director for indicating temperature, pressure, or other operating conditions.

Statutory Authority: *MS s 116.07 subd 4*

7005.1040 OTHER ODOR CONTROL MEASURES REQUIRED.

Subpart 1. **Installation and operation of devices and measures.** Effective devices and measures shall be installed and operated such that no vent, exhaust pipe, blow-off pipe, or opening of any kind shall discharge into the outdoor air any odorous matter, vapors, gases, dusts, or any combination thereof which create odors or other nuisances in the neighborhood of the plant.

Subp. 2. **Storage and handling of materials.** Odor-producing materials shall be stored and handled in such a manner that odors produced from such materials are confined. Accumulation of odor-producing materials resulting from spillage or other escape is prohibited.

Subp. 3. **Confinement.** Odor-bearing gases, vapors, fumes, or dusts arising from materials in process shall be confined at the point of origin so as to prevent liberation of odorous matter. Confined gases, vapors, fumes, or dusts shall be treated before discharge to the atmosphere, as required in subpart 1.

Subp. 4. **Enclosure of building.** Whenever dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof escape from a building used for processing of animal matter in such manner and amount as to cause a violation of parts 7005.0900 to 7005.0960, the director may instruct that the building or buildings utilized for processing, handling, and storage be tightly closed and ventilated so that all air, gases, and air or gas-borne material are treated by incineration or other effective means before discharge into the open air.

Statutory Authority: *MS s 116.07 subd 4*

EMISSION STANDARDS FOR VISIBLE AIR CONTAMINANTS

7005.1100 SCOPE.

The standards of performance in parts 7005.1100 to 7005.1130 apply to any emission facility for which a specific standard of performance has not been promulgated in another rule.

Statutory Authority: *MS s 116.07 subd 4*

7005.1110 VISIBLE EMISSION RESTRICTIONS FOR EXISTING FACILITIES.

No owner or operator of an existing emission facility to which parts 7005.1100 to 7005.1130 are applicable shall cause to be discharged into the atmosphere from the facility any gases which exhibit greater than 20 percent opacity; except that a maximum of 40 percent opacity shall be permissible for four minutes in any 60-minute period.

Statutory Authority: *MS s 116.07 subd 4*

7005.1120 VISIBLE EMISSION RESTRICTIONS FOR NEW FACILITIES.

No owner or operator of a new emission facility to which parts 7005.1100 to 7005.1130 are applicable shall cause to be discharged into the atmosphere from the facility any gases which exhibit greater than 20 percent opacity.

Statutory Authority: *MS s 116.07 subd 4*

7005.1130 PERFORMANCE TESTS.

Unless another method is approved by the agency, any person required to submit performance tests for emission facilities for which parts 7005.1100 to 7005.1130 are applicable shall utilize Method 9 for visual determination of opacity.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR MOTOR VEHICLES AND STATIONARY INTERNAL COMBUSTION ENGINES

7005.1150 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.1150 to 7005.1200, the following words shall have the meanings defined herein.

Subp. 2. **Air pollution control system.** "Air pollution control system" means any device or element of design installed on or in any motor vehicle or motor vehicle engine in order to comply with pollutant emission restrictions established for the motor vehicle or motor vehicle engine by federal statute or regulation.

Subp. 3. **Motor vehicle.** "Motor vehicle" means any self-propelled vehicle powered by an internal combustion engine and designed for use on the public highways including, but not limited to, automobiles, trucks, and buses.

Statutory Authority: *MS s 116.07 subd 4*

7005.1160 STANDARDS OF PERFORMANCE FOR MOTOR VEHICLES.

No person shall cause or permit the emission of visible air contaminants from a motor vehicle, other than one powered by a diesel cycle engine, for more than ten consecutive seconds.

No person shall cause or permit the emission of visible air contaminants from a motor vehicle powered by a diesel cycle engine:

A. in excess of 20 percent opacity for more than 20 consecutive seconds if the engine was manufactured prior to January 1, 1973; or

B. in excess of ten percent opacity for more than 20 consecutive seconds if the engine was manufactured after January 1, 1973.

Statutory Authority: *MS s 116.07 subd 4*

7005.1170 STANDARDS OF PERFORMANCE FOR TRAINS, BOATS, AND CONSTRUCTION EQUIPMENT.

No person shall cause or permit the emission of visible air contaminants from a train, boat, or construction equipment, which is powered by an internal combustion engine, in excess of the limits set forth in part 7005.1160.

Statutory Authority: *MS s 116.07 subd 4*

7005.1180 EXEMPTION.

The provisions of parts 7005.1150 to 7005.1200 do not apply to two-cycle internal combustion engines.

Statutory Authority: *MS s 116.07 subd 4*

7005.1190 AIR POLLUTION CONTROL SYSTEMS RESTRICTIONS.

No person shall remove, alter, or otherwise render inoperative any air pollution control system.

No person shall operate a motor vehicle unless all air pollution control systems are in place and in operating condition.

No person shall rent, lease, offer for sale, or in any manner transfer ownership of a motor vehicle unless all air pollution control systems are in place and in operating condition.

The requirements of this part shall not restrict or prohibit the removal of any air pollution control system for repair or replacement.

Statutory Authority: *MS s 116.07 subd 4*

7005.1200 STANDARDS OF PERFORMANCE FOR STATIONARY INTERNAL COMBUSTION ENGINES.

Subpart 1. **Visible air contaminants.** No owner or operator of any stationary internal combustion engine shall cause or permit the emission of visible air contaminants from the engine in excess of 20 percent opacity for more than ten consecutive seconds once operating temperatures have been obtained.

Subp. 2. **Sulfur dioxide.** No owner or operator of any stationary internal combustion engine shall cause to be discharged into the atmosphere from the engine any gases which contain sulfur dioxide in excess of 1.75 pounds per million Btu actual heat input if the engine is located in the Minneapolis-Saint Paul air quality control region or if the engine is located outside the Minneapolis-Saint Paul air quality control region but has a total rated heat input greater than 250 million Btu per hour.

Subp. 3. **Heat input.** The actual heat input and rated heat input of an internal combustion engine shall be determined in accordance with the provisions set forth in parts 7005.0300 to 7005.0400.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR LIQUID PETROLEUM STORAGE VESSELS

7005.1250 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.1250 to 7005.1280 the following words shall have the meanings defined herein.

Subp. 2. **Condensate.** "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

Subp. 3. **Custody transfer.** "Custody transfer" means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

Subp. 4. **Drilling and production facility.** "Drilling and production facility" means all drilling and servicing equipment, wells, flow lines, separators, equipment, gathering lines, and auxiliary nontransportation related equipment used in the production of petroleum but does not include natural gasoline plants.

Subp. 5. **Floating roof.** "Floating roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover, or covered floating roof, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

Subp. 6. **Hydrocarbon.** "Hydrocarbon" means any organic compound consisting predominantly of carbon and hydrogen.

Subp. 7. **Petroleum.** "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Subp. 8. **Petroleum liquids.** "Petroleum liquids" means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean number 2 through number 6 fuel oils as specified in A.S.T.M. D396-69, gas turbine fuel oils Numbers 2-GT through 4-GT as specified in A.S.T.M. D2880-71, or diesel fuel oils Numbers 2-D and 4-D as specified in A.S.T.M. D975-68.

Subp. 9. **Petroleum refinery.** "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives.

Subp. 10. **Reid vapor pressure.** "Reid vapor pressure" is the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids, except liquefied petroleum gases, as determined by A.S.T.M.-D-323-58 (reapproved 1968).

Subp. 11. **Storage vessel.** "Storage vessel" means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

A. pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions;

B. subsurface caverns or porous rock reservoirs; or

C. underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

Subp. 12. **Submerged fill pipe.** "Submerged fill pipe" means any fill pipe the discharge opening of which is entirely submerged when the liquid level is six inches above the bottom of the storage vessel. When applied to a storage vessel which is loaded from the side, "submerged fill pipe" means any fill pipe the discharge opening of which is entirely submerged when filling except for filling after the vessel has been emptied for cleaning and repairs.

Subp. 13. **True vapor pressure.** "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from Floating Roof Tanks, 1962.

Subp. 14. **Vapor recovery system.** "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

Statutory Authority: *MS s 116.07 subd 4*

7005.1260 STANDARDS OF PERFORMANCE FOR STORAGE VESSELS.

Subpart 1. **Pre-1969 storage vessels.** There are no standards of performance

promulgated in this rule for storage vessels for which construction was commenced prior to July 7, 1969.

Subp. 2. **July 7, 1969 to June 11, 1973 storage vessels.** July 7, 1969 to June 11, 1973:

A. There are no standards of performance promulgated in this rule for storage vessels with a storage capacity of 2,000 gallons (7,571 liters) or less for which construction was commenced after July 7, 1969, but prior to June 11, 1973.

B. The owner or operator of any storage vessel with a storage capacity of greater than 2,000 gallons (7,571 liters) but less than or equal to 65,000 gallons (246,405 liters) for which construction was commenced after July 7, 1969, but prior to June 11, 1973, shall equip the storage vessel with a permanent submerged fill pipe or comply with the requirements of subpart 3, item C.

C. The owner or operator of any storage vessel with a storage capacity of greater than 65,000 gallons (246,405 liters) for which construction was commenced after July 7, 1969, but prior to June 11, 1973, shall comply with the following requirements:

(1) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 128 mm Hg (2.5 psia) but not greater than 642 mm Hg (12.5 psia) the storage vessel shall be equipped with a floating roof, a vapor recovery system or their equivalents.

(2) If the true vapor pressure of the petroleum liquid, as stored, is greater than 642 mm Hg (12.5 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

Subp. 3. **Post-June 11, 1973 storage vessels.** Post-June 11, 1973:

A. There are no standards of performance promulgated in this part for storage vessels with a storage capacity of 2,000 gallons (7,571 liters) or less for which construction was commenced on or after June 11, 1973.

B. The owner or operator of any storage vessel with a storage capacity of greater than 2,000 gallons (7,571 liters) but less than or equal to 40,000 gallons (151,412 liters) for which construction was commenced on or after June 11, 1973, shall equip the storage vessel with a permanent submerged fill pipe or comply with the requirements of item C.

C. The owner or operator of any storage vessel with a storage capacity of greater than 40,000 gallons (151,412 liters) for which construction was commenced on or after June 11, 1973, shall comply with the following requirements:

(1) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(2) If the true vapor pressure of the petroleum liquid as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

Statutory Authority: *MS s 116.07 subd 4*

7005.1270 MONITORING OF OPERATIONS.

Subpart 1. **Records.** The owner or operator of any storage vessel, the construction or modification of which commenced on or after June 11, 1973, which has a storage capacity of greater than 40,000 gallons (151,412 liters) shall for each storage vessel:

A. maintain a file of each type of petroleum liquid stored, of the typical Reid vapor pressure of each type of petroleum liquid stored, of the dates of storage and withdrawals, and of the date on which the storage vessel is empty;

B. determine and record the average monthly storage temperature and true vapor pressure of the petroleum liquid stored at such temperature if:

(1) the petroleum liquid has a true vapor pressure, as stored, greater than 26 mm Hg (0.5 psia) but less than 78 mm Hg (1.5 psia) and is stored in a storage vessel other than one equipped with a floating roof, a vapor recovery system or their equivalents; or

(2) the petroleum liquid has a true vapor pressure, as stored, greater than 470 mm Hg (9.1 psia) and is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

Subp. 2. **Calculation.** The average monthly storage temperature is an arithmetic average calculated for each calendar month, or portion thereof if storage is for less than a month, from bulk liquid storage temperatures determined at least once every seven days.

Subp. 3. **Vapor pressure determination.** The true vapor pressure shall be determined by the procedure in American Petroleum Institute Bulletin 2517. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the agency or the director requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, that Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available on request of the agency or the director when typical Reid vapor pressure is used.

Statutory Authority: *MS s 116.07 subd 4*

7005.1280 EXCEPTION.

The provisions of parts 7005.1250 to 7005.1270 do not apply to storage vessels for petroleum or condensate stored, processed, or treated at a drilling and production facility prior to custody transfer.

Statutory Authority: *MS s 116.07 subd 4*

EMISSION STANDARDS FOR ACID AND ALKALINE FALLOUT

7005.1300 SCOPE.

Parts 7005.1310 to 7005.1320 shall apply to all emissions from any sources or premises.

Statutory Authority: *MS s 116.07 subd 4*

7005.1310 METHOD OF MEASUREMENT.

Subpart 1. **Sampling devices.** In determining compliance with part 7005.1320, fallout sampling devices shall consist of circular glass dishes 15 centimeters in diameter which shall be supported on a nearly horizontal surface not larger than the dish. The dish bottom shall be at least three feet above the earth or other surface on which its support is resting and the dish shall be coated with a solution of thymol blue, ammonia water solution, and gelatin dried to a yellow color in a vacuum oven at room temperature. Prepared dishes shall be stored in a desiccator at 40 percent relative humidity or in plastic bags.

Subp. 2. **Method.** Fallout sampling devices shall be placed at one or more locations beyond the premises on which a source or sources are located, upwind and downwind of such premises. The sampling devices shall be exposed to substances settling out of the ambient air for a period of one hour. The presence of red-colored spots on the gelatin indicates that acidic substances have settled out of the air while the presence of blue-colored spots on the gelatin indicates that alkaline substances have settled out of the air. The number of spots visible on samplers exposed upwind of premises to be subtracted from the number of spots visible on samplers exposed downwind of the same premises. The difference in the number of spots, if any, shall be construed to be attributable to emissions occurring on the premises under investigation.

Subp. 3. **Alternate method.** In lieu of the test methods specified in subparts 1 and 2, any other method approved by the director may be used.

Statutory Authority: *MS s 116.07 subd 4*

7005.1320 EMISSION RESTRICTION.

No person shall cause or permit the emission from any source or premises of substances having acidic or alkaline properties in such amounts that the downwind fallout rate of acidic or alkaline substances at any place where an adverse effect could occur, exceeds the upwind fallout rate by five or more spots per hour, measured in the manner prescribed in part 7005.1310.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR SULFURIC ACID PLANTS

7005.1350 DEFINITIONS.

As used in parts 7005.1350 to 7005.1450 the following words shall have the meanings defined herein:

A. Acid mist. "Acid mist" means sulfuric acid mist as measured by Method 8.

B. Sulfuric acid production unit. "Sulfuric acid production unit" means any emission facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge, but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds.

Statutory Authority: *MS s 116.07 subd 4*

7005.1360 STANDARDS OF PERFORMANCE OF EXISTING SULFURIC ACID PRODUCTION UNITS.

Subpart 1. **Pre-July 1, 1977 limit.** Prior to July 1, 1977, no owner or operator of an existing sulfuric acid production unit shall cause to be discharged into the atmosphere from any sulfuric acid production unit any gases which contain sulfur dioxide in excess of 42 pounds per ton of acid produced (21 kg per metric ton), production being expressed as 100 percent H_2SO_4.

Subp. 2. **Post-July 1, 1977 limit.** After July 1, 1977, no owner or operator of an existing sulfuric acid production unit shall cause to be discharged into the atmosphere from any sulfuric acid production unit any gases which contain sulfur dioxide in excess of 30 pounds per ton of acid produced (15 kg per metric ton), production being expressed as 100 percent H_2SO_4.

Subp. 3. **Acid mist.** No owner or operator of an existing sulfuric acid production unit shall cause to be discharged into the atmosphere from any sulfuric acid production unit any gases which contain acid mist, expressed as H_2SO_4, in excess of 1.70 pounds per ton of acid produced (0.85 kg per metric ton), the production being expressed as 100 percent H_2SO_4.

Statutory Authority: *MS s 116.07 subd 4*

7005.1370 STANDARDS OF PERFORMANCE FOR NEW SULFURIC ACID PRODUCTION UNITS.

Subpart 1. **Sulfur dioxide level.** No owner or operator of a new sulfuric acid production unit shall cause to be discharged into the atmosphere from any sulfuric acid production unit any gases which contain sulfur dioxide in excess of four pounds per ton of acid produced (two kg per metric ton), the production being expressed as 100 percent H_2SO_4.

Subp. 2. **Acid mist.** No owner or operator of a new sulfuric acid production unit shall cause to be discharged into the atmosphere from any sulfuric acid production unit any gases which:

A. contain acid mist, expressed as H_2SO_4, in excess of 0.15 pounds per ton of acid produced (0.075 kg per metric ton), the production being expressed as 100 percent H_2SO_4; or

B. exhibit ten percent opacity or greater.

Statutory Authority: *MS s 116.07 subd 4*

7005.1380 CONTINUOUS EMISSION MONITORING.

Subpart 1. **Instrumentalities.** The owner or operator of a sulfuric acid production unit shall install, calibrate, maintain, and operate an instrument for continuously monitoring and recording emissions of sulfur dioxide.

Subp. 2. **Calibration.** The pollutant gas used to prepare calibration gas mixtures and for calibration check shall be sulfur dioxide.

Subp. 3. **Method 8.** When conducting monitoring system performance evaluations only the sulfur dioxide portion of the Method 8 results shall be used.

Subp. 4. **Span set.** The span shall be set at 1,000 ppm of sulfur dioxide.

Subp. 5. **Conversion factor.** The owner or operator of a sulfuric acid production unit shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/short ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999-AP-13) and calculating the appropriate conversion factor for each eight-hour period as follows:

$$CF = k \left[\frac{1{,}000 - 0.015r}{r - s} \right]$$

where:

CF = conversion factor (kg/metric ton per ppm, lb/short ton per ppm).

k = constant derived from material balance. For determining CF in metric units, k = 0.0653. For determining CF in English units, k = 0.1306.

r = percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection.

s = percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under subpart 1.

Subp. 6. **Record of conversion factors.** The owner or operator of a sulfuric acid production unit shall record all conversion factors and values under subpart 5, i.e., CF, r, and s.

Subp. 7. **Record of production data.** The owner or operator of a sulfuric acid production unit shall record daily the production rate and hours of operation.

Subp. 8. **Periods of excess emissions.** For the purpose of reports under part 7005.1870, subpart 1, item B, periods of excess emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under these parts.

Statutory Authority: *MS s 116.07 subd 4*

7005.1390 PERFORMANCE TEST METHODS.

Unless another method is approved by the director, any person required to submit performance tests for a sulfuric acid production unit shall utilize the following test methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 3 for gas analysis; and

D. Method 8 for the concentrations of SO_2 and acid mist.

Statutory Authority: *MS s 116.07 subd 4*

7005.1400 PERFORMANCE TEST PROCEDURES.

Subpart 1. **Sampling time and volume.** In testing for sulfur dioxide and acid mist, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 40.6 dscf (1.15 dscm) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the agency.

Subp. 2. **Acid production rate.** Acid production rate, expressed in tons per hour of 100 percent H_2SO_4, shall be determined during each testing period by a suitable method approved by the agency. The agency may require the production rate to be confirmed by a material balance over the production system.

Subp. 3. **Acid mist and sulfur dioxide emissions.** Unless the director approves another method, acid mist and sulfur dioxide emissions, expressed in pounds per ton (kg/metric ton) of 100 percent $H_2 SO_4$, shall be determined by dividing the emission rate in lb/hr (kg/hr) by the acid production rate. The emission rate shall be determined by the equation, Q_s x c = lb/hr (kg/hr), where Q_s = volumetric flow rate of the effluent in dscf/hr (dscm/hr) as determined in accordance with part 7005.1390, item B, and c = acid mist and sulfur dioxide concentrations in lb/dscf (kg/dscm) as determined in accordance with part 7005.1390, item D.

Statutory Authority: *MS s 116.07 subd 4*

7005.1410 EXCEPTIONS.

Shutdowns and breakdowns of control equipment at any sulfuric acid production unit shall be governed by the provisions of parts 7005.1850 to 7005.1880.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR NITRIC ACID PLANTS

7005.1450 DEFINITIONS.

As used in parts 7005.1450 to 7005.1500 the following words shall have the meanings defined herein:

A. "Nitric acid production unit" means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

B. "Weak nitric acid" means acid which is 30 to 70 percent in strength.

Statutory Authority: *MS s 116.07 subd 4*

7005.1460 STANDARDS OF PERFORMANCE FOR EXISTING NITRIC ACID PRODUCTION UNITS.

Prior to July 1, 1977, no owner or operator of an existing nitric acid production unit shall cause to be discharged into the atmosphere from any nitric acid production unit any gases which contain nitrogen oxides, expressed as NO_2, in excess of 50 pounds per ton of acid produced (25 kg per metric ton), the production being expressed as 100 percent nitric acid.

After July 1, 1977, no owner or operator of an existing nitric acid production unit shall cause to be discharged into the atmosphere from any nitric acid production unit any gases which contain nitrogen oxides, expressed as NO_2, in excess of 40 pounds per ton of acid produced (20 kg per metric ton), the production being expressed as 100 percent nitric acid.

No owner or operator of an existing nitric acid production unit shall cause to be discharged into the atmosphere from any nitric acid production unit any gases which exhibit greater than ten percent opacity.

Statutory Authority: *MS s 116.07 subd 4*

7005.1470 STANDARDS OF PERFORMANCE FOR NEW NITRIC ACID PRODUCTION UNITS.

No owner or operator of a new nitric acid production unit shall cause to be discharged into the atmosphere from the nitric acid production unit any gases which:

A. contain nitrogen oxides, expressed as NO_2, in excess of 3.0 lb/per ton of acid produced (1.5 kg per metric ton), the production being expressed as 100 percent nitric acid; and

B. exhibit ten percent opacity or greater.

Statutory Authority: *MS s 116.07 subd 4*

7005.1480 EMISSION MONITORING.

The owner or operator of a nitric acid production unit shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement and recording of nitrogen oxides emissions.

The pollutant gas used to prepare calibration gas mixtures and for calibration checks shall be nitrogen dioxide (NO_2).

Reference Method 7 shall be used for conducting monitoring system performance evaluations.

The span shall be set at 500 ppm of nitrogen dioxide.

The owner or operator of a nitric acid plant shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be established by measuring emissions with the continuous monitoring system concurrent with measuring emissions with the applicable Reference Method tests. Using only that portion of the continuous monitoring emission data that represents emission measurements concurrent with the reference method test periods, the conversion factor shall be determined by dividing the reference method test data averages by the monitoring data averages to obtain a ratio expressed in units of the applicable standards to units of the monitoring data, i.e., (kg/metric ton per ppm, lb/ton per ppm). The conversion factor shall be reestablished during any performance test or any continuous monitoring system performance evaluation.

The owner or operator of a nitric acid production unit shall record the daily production rate and hours of operation.

For the purpose of reports under part 7005.1870, subpart 1, item B, periods of excess emissions that shall be reported are defined as any three-hour period during which the average nitrogen oxides emissions (arithmetic average of three contiguous one-hour periods) are measured by a continuous monitoring system exceed the applicable standards under parts 7005.1460 and 7005.1470.

Statutory Authority: *MS s 116.07 subd 4*

7005.1490 PERFORMANCE TEST METHODS.

Unless another method is approved by the director, any person required to submit performance tests for a nitric acid production unit shall utilize the following test methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 3 for gas analysis; and

D. Method 7 for the concentration of NO_2.

Statutory Authority: *MS s 116.07 subd 4*

7005.1500 PERFORMANCE TEST PROCEDURES.

For Method 7, the same site shall be selected according to Method 1 and the sampling point shall be the centroid of the stack or duct or at a point no closer

to the walls than 1 meter (3.28 feet). Each run shall consist of at least four grab samples taken at approximately 15-minute intervals. The arithmetic mean of the samples shall constitute the run value. A velocity traverse shall be performed once per run.

Acid production rate, expressed in metric tons per hour of 100 percent nitric acid, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

For each run, nitrogen oxides, expressed in lb/ton of 100 percent nitric acid (kg/metric ton), shall be determined by dividing the emission rate in lb/hr (kg/hr) by the acid production rate. The emission rate shall be determined by the equation:

$Q_s \times c$ = lb/hr (kg/hr)

where Q_s = volumetric flow rate of the effluent in dscf/hr (dscm/hr), as determined in accordance with part 7005.1490, item B, and c = NO_2 concentration in lb/dscf (kg/dscm), as determined in accordance with part 7005.1490, item D.

Statutory Authority: *MS s 116.07 subd 4*

EMISSION STANDARDS FOR ASBESTOS

7005.1550 DEFINITIONS.

Subpart 1. **Scope.** The following definitions of words and phrases are controlling for the purposes of parts 7005.1550 to 7005.1610:

Subp. 2. **Air flow permeability.** "Air flow permeability" means the volumetric rate of air flow in cfm, produced by a pressure decrease of 0.5 inches water gage across a new, clean filtering fabric, divided by the area of the fabric in ft^2. Tests of air flow permeability must be performed as specified in ASTM Designation D737-69.

Subp. 3. **Agency.** "Agency" means the Minnesota Pollution Control Agency as constituted pursuant to Minnesota Statutes, section 116.02.

Subp. 4. **Asbestos.** "Asbestos" means any of six naturally occurring, hydrated mineral silicates: actinolite, amosite, anthophyllite, chrysotile, crocidolite, and tremolite.

Subp. 5. **Debris.** "Debris" means waste produced by the demolition of a building or structure.

Subp. 6. **Director.** "Director" means the executive director of the agency.

Subp. 7. **Local exhaust ventilation system.** "Local exhaust ventilation system" means the capture of particulate matter generated by a process through the application of an air stream induced at the process and a device which encloses the process, partially encloses the process, or guides the capturing air flow at the process. The design and operation of ventilation devices must conform with ANSI Z9.2-1971, published by the American National Standards Institute.

Subp. 8. **Manufacturing operation.** "Manufacturing operation" means the processing of asbestos or the production of any product containing asbestos, with the exception of any process in which an asbestos containing material is sprayed.

Subp. 9. **Particulate matter.** "Particulate matter" means any material, other than uncombined water, which exists in a finely divided form as a liquid or solid.

Subp. 10. **Spraying.** "Spraying" means any operation in which material is conveyed in the form of, or by the means of, a fluid stream from an application device to a receiving surface.

Subp. 11. **Visible emission.** "Visible emission" means any emission which is visually detectable.

Subp. 12. **Detectable amount of asbestos.** For purposes of parts 7005.1550 to 7005.1610 a product shall be deemed to contain asbestos if a detectable amount of asbestos is present in the product or in any material that goes into the product. A detectable amount of asbestos is defined as that amount detectable by the

methods of x-ray diffraction, petrographic optical microscopy, or other method approved by the director.

Statutory Authority: *MS s 116.07 subd 4*

7005.1560 MANUFACTURING OPERATIONS.

Subpart 1. **Emissions from local exhaust ventilation system.** Emissions of particulate matter to the atmosphere from a local exhaust ventilation system in a building, structure, facility, or installation within which any manufacturing operation is carried on shall not exceed the amount which would be emitted if such emissions were treated in a fabric filter installation as described in part 7005.1590.

Subp. 2. **Other emissions.** All other visible emissions of particulate matter to the atmosphere from a building, structure, facility, or installation within which any manufacturing operation is carried on shall not exceed the amount which would be emitted if such emissions were treated in a fabric filter installation as described in part 7005.1590.

Subp. 3. **Emissions externally generated.** Visible emissions of particulate matter to the atmosphere from any manufacturing operation located outside a building, structure, facility, or installation are prohibited.

Statutory Authority: *MS s 116.07 subd 4*

7005.1570 SPRAYING.

Subpart 1. **Open area.** The spraying in any area open to the outdoor atmosphere of any acoustical insulating, thermal insulating, or fireproofing product which contains asbestos is prohibited.

Subp. 2. **Emissions to outdoor atmosphere.** Emissions to the outdoor atmosphere of particulate matter from the spraying of any acoustical insulating, thermal insulating, or fireproofing product which contains asbestos, if such spraying is not otherwise prohibited by law, shall not exceed the amounts which would be emitted to the atmosphere if the area containing such emissions were treated by a fabric filter installation as described in part 7005.1590.

Statutory Authority: *MS s 116.07 subd 4*

7005.1580 DEMOLITION.

The demolition of any building or structure, except single family and two family dwellings, involving the dislodging of asbestos-containing materials, shall occur only under the following conditions and procedures:

A. Boilers, pipes, steel members, ducts, and where practicable, all other surfaces covered or lined with asbestos-containing materials, shall be thoroughly wetted before demolition. All surfaces likely to come in contact with such asbestos-containing materials during toppling of walls, roofs, and floors shall be thoroughly wetted before toppling is begun.

B. In all cases, and at all stages, of demolition and of loading, transportation, and unloading of debris, wetting procedures shall be sufficient to prevent particulate matter from becoming airborne. Trucks shall be adequately covered or enclosed to prevent particulate matter from becoming airborne while in transit.

C. Asbestos-containing debris shall not be dropped or thrown from any floor of the building, but shall be lowered to the ground by dust-tight chutes or buckets. Asbestos-containing debris in chutes or buckets shall be sufficiently wetted to preclude particulate matter from becoming airborne.

D. In the event particulate matter becomes airborne for a continuous period of 15 minutes, despite the application of the above procedures, or because freezing temperatures preclude the use of water for wetting, the demolition shall cease at once until alternative procedures can be taken to prevent particulate

matter from becoming airborne. Such procedures shall be evaluated and approved by the director and these procedures shall be effected before the demolition is continued.

E. The director shall be notified in writing of all planned demolition at least 20 days prior to commencement of the demolition. Such notification shall include:

(1) the location of the building or structure;

(2) the date of commencement of demolition;

(3) the method of demolition, whether by toppling or other means;

(4) a description and general location of the asbestos-containing materials in the building or structure;

(5) a statement of the method by which the above procedures shall be effected to prevent asbestos particulate matter from becoming airborne; and

(6) such other items as the director deems necessary to determine that the above procedures will be followed to prevent asbestos particulate matter from becoming airborne.

F. The director may disapprove the demolition of any building or structure and order that the demolition cease. The demolition shall not occur until subsequent approval by the director of the agency.

Statutory Authority: *MS s 116.07 subd 4*

7005.1590 FABRIC FILTER SPECIFICATIONS.

Subpart 1. **Requirements.** Fabric filter collection devices referred to in parts 7005.1560, subparts 1 and 2 and 7005.1570, subpart 2 shall be operated at not more than four inches water gage pressure decrease as measured across the filter fabric. No bypass devices are permitted. Such collection devices shall be equipped with either of the following classes of fabrics:

A. woven fabrics which have an air flow permeability not exceeding 30 cfm/ft^2 and which, if constructed of synthetic materials, contain no fill yarn other than that which is spun; or

B. felted fabrics which have an average density of not less than 14 oz/yd_2, an average thickness of not less than 1/16 inch, and an air flow permeability of not more than 35 cfm/ft^2.

Subp. 2. **Failure to meet requirements.** Fabric filter devices do not meet the requirements of this part if any of the following conditions exist: leakage of gases, containing particulate matter, from the control system prior to filtration; torn or ruptured bags; improperly positioned bags; badly worn or threadbare bags; or presence of visible emissions of particulate matter during the emptying of collection hoppers.

Statutory Authority: *MS s 116.07 subd 4*

7005.1600 SUBSTITUTE DEVICES FOR FABRIC FILTERS.

Subpart 1. **Wet collectors.** Where an owner or operator deems that the use of fabric filter installations for operations subject to parts 7005.1560, subparts 1 and 2 and 7005.1570, subpart 2 would create a fire or explosive hazard, application for approval to use wet collectors shall be made to the director. Such application shall include sufficient information to demonstrate that fabric filters cannot be used. The director shall authorize the use of wet collectors if the director determines that fabric filters cannot be used.

Wet collectors must be operated with a unit contacting energy of not less than 40 inches water gage. Unit contacting energy is the sum of the gas static pressure head decrease across the contact chamber of the collector, the energy per unit weight of gas handled which is required to introduce scrubbing liquid into the contact chamber, and the shaft energy per unit weight of gas handled which is

applied to effect contact between the scrubbing liquid and the gas stream. No bypass devices are permitted.

Wet collectors do not meet the requirements of this subpart if either of the following conditions exist:

A. leakage of gases, containing particulate matter, from the control system prior to passage through the wet collector; or

B. operation at a gas static pressure head decrease, a scrubbing medium flow rate, or a mechanical energy level less than specified by the manufacturer for optimum collection efficiency.

Subp. 2. **Other control equipment.** Compliance with any applicable provision of parts 7005.1550 to 7005.1610 which refers to a control equipment specification shall be demonstrated in accordance with this section if the referenced control equipment is not used.

A. The owner or operator of the emission source, or vendor of emission control equipment, shall make available to the director sufficient information as may be required to demonstrate that the substitute equipment will provide the degree of emission control which, in the judgment of the director, is at least as stringent as that which would be achieved by using the equipment specified in the applicable standard. To the maximum extent practicable, the determination of equivalent degree of emission control will be based upon operation at the actual conditions at which the substitute device is, or will be, operated on the emission source. Factors which will be considered include, but are not limited to, total mass collection efficiency, collection efficiency versus particle size reliability, and maintenance practices associated with proper operation of the substitute device. The method used to determine the total mass collection efficiency and particle size distribution must be approved by the director.

B. The owner or operator of the emission source, or vendor of emission control equipment, shall submit to the director performance data including, but not limited to, total mass collection efficiency and collection efficiency versus particle size of the substitute control device under actual operating conditions which are representative of those of the existing or planned operating conditions.

C. In cases for which it is not reasonable, in the judgment of the director, to require an owner or operator, or vendor of emission control equipment, to submit performance data which are based upon actual operating conditions which are representative thereof, the owner or operator, or vendor of emission control equipment, shall submit to the director performance data on comparative tests, using subtle standard test aerosols, of the substitute device and the device specified by the applicable standard. The performance data shall include, but is not limited to, the total mass collection efficiency and the collection efficiency versus particle size of the substitute device and the device specified by the applicable standard.

Subp. 3. **Collection efficiency of substitute devices for fabric filters.** The total mass collection efficiency of any substitute device for a fabric filter shall not be less than 99.9 percent.

The total mass collection efficiency of any substitute device for a wet collector shall not be less than 99.5 percent.

Statutory Authority: *MS s 116.07 subd 4*

7005.1610 INSTALLATION AND OPERATION OF CONTROL EQUIPMENT.

Whenever a fabric filter, wet collector, or other control device is required by parts 7005.1550 to 7005.1610, the filter, collector, or other device shall be properly installed, used, and maintained at all times during the operation of the asbestos generating facility.

Statutory Authority: *MS s 116.07 subd 4*

EMISSION STANDARDS FOR INORGANIC FIBROUS MATERIALS

7005.1650 DEFINITIONS.

Subpart 1. **Scope.** The following definitions of words and phrases are controlling for purposes of parts 7005.1650 and 7005.1660.

Subp. 2. **Inorganic fibrous material.** "Inorganic fibrous material" means glass fibers, glass wool, rock wool, and aluminum oxide fibers having a length-to-diameter ratio of equal to or greater than three to one.

Subp. 3. **Spraying.** "Spraying" means an operation in which material is conveyed in the form of, or by the means of, a fluid stream from an application device to a receiving surface.

Statutory Authority: *MS s 116.07 subd 4*

7005.1660 SPRAYING OF INORGANIC FIBROUS MATERIALS.

The spraying on any portion of a building or structure open to the outdoor atmosphere of any acoustical insulating, thermal insulating, or fireproofing product which does not contain asbestos but which contains inorganic fibrous material shall occur only under the following procedures:

A. The entire floor area where the spraying is to occur shall be enclosed with plastic-coated tarpaulins or by other means in a manner which shall prevent the escape of sprayed material from the enclosure. All interior areas, such as elevator shafts and stairwells, shall be enclosed in a manner which shall prevent the escape of sprayed material from the working area.

B. The entire area in which spraying has occurred, including all ledges, surfaces, equipment, and protective tarpaulins within the enclosure, shall be thoroughly cleaned by means of scraping, sweeping, vacuuming, or other acceptable methods upon completion of the spraying operation and before the enclosure is dismantled; provided, however, that all such cleaning procedures shall be followed by thorough vacuuming. The collected material shall be placed in a sealed container or bag strong enough to resist breaking and tearing under normal handling conditions and shall be transported directly to a disposal site approved by the director.

C. All areas for opening containers of the material to be sprayed and for loading the material to be sprayed into hoppers, or other containers shall be enclosed in a manner which shall prevent the escape of the material to be sprayed to the outdoor atmosphere.

Statutory Authority: *MS s 116.07 subd 4*

7005.1700 [Renumbered 7001.1260]

7005.1710 [Renumbered 7001.1270]

7005.1720 [Renumbered 7001.1280]

7005.1730 [Renumbered 7001.1290]

7005.1740 Subpart 1. [Repealed by amendment, 8 SR 2277]
Subp. 2. [Renumbered 7001.1310, subp. 2]
Subp. 3. [Renumbered 7001.1310, subp. 3]
Subp. 4. [Renumbered 7001.1310, subp. 4]
Subp. 5. [Repealed by amendment, 8 SR 2277]

7005.1750 Subpart 1. [Renumbered 7001.1330]
Subp. 2. [Repealed by amendment, 8 SR 2277]
Subp. 3. [Repealed by amendment, 8 SR 2277]
Subp. 4. [Repealed by amendment, 8 SR 2277]

7005.1760 [Repealed by amendment, 8 SR 2277]

7005.1770 Subpart 1. [Renumbered 7001.1340, subpart 1]
Subp. 2. [Repealed by amendment, 8 SR 2277]
Subp. 3. [Repealed by amendment, 8 SR 2277]
Subp. 4. [Repealed by amendment, 8 SR 2277]
Subp. 5. [Renumbered 7001.1340, subp. 2]
Subp. 6. [Repealed by amendment, 8 SR 2277]
Subp. 7. [Repealed by amendment, 8 SR 2277]
Subp. 8. [Repealed by amendment, 8 SR 2277]
Subp. 9. [Repealed by amendment, 8 SR 2277]

7005.1780 [Repealed by amendment, 8 SR 2277]

7005.1790 [Repealed by amendment, 8 SR 2277]

7005.1800 [Repealed by amendment, 8 SR 2277]

MONITORING, TESTING, AND REPORTING REQUIREMENTS

7005.1850 CONTINUOUS MONITORING.

Subpart 1. **Requirement.** The owner or operator of any emission facility, whether or not continuous monitoring is required by another rule, may be required to establish a continuous monitoring system, upon order of the director, when in his judgment other methods of measurement or calculation do not provide adequate information on the level or variation of emissions to assure compliance with applicable regulations.

Subp. 2. **Monitoring system specifications.** Any owner or operator of an emission facility who is required by applicable rule or by order of the director to install a continuous monitoring system shall install a system which meets the following performance evaluations:

A. Continuous monitoring systems for measuring opacity of emissions shall comply with Performance Specification 1.

B. Continuous monitoring systems for measuring nitrogen oxides emissions shall comply with Performance Specification 2.

C. Continuous monitoring systems for measuring sulfur dioxide emissions shall comply with Performance Specification 2.

D. Continuous monitoring systems for measuring the oxygen content or carbon dioxide content of effluent gases shall comply with Performance Specification 3.

Subp. 3. **Performance evaluation.** The agency or the director may order any owner or operator who has installed a continuous monitoring system to conduct performance evaluations of the system. The performance evaluations shall be conducted under such conditions as the agency or the director may impose.

Subp. 4. **Old monitoring systems.** Any owner or operator of an emission facility who installed or entered into a binding contract to purchase a specific continuous monitoring system prior to September 11, 1974, may be exempt from meeting the performance evaluations set forth in subpart 2 provided the following requirements are met:

A. Continuous monitoring systems for measuring opacity of emissions shall be capable of measuring emission levels within ±20 percent of the correct value with a confidence level of 95 percent. The calibration error test and associated calculation procedures set forth in Performance Specification 1 shall be used for demonstrating compliance with this specification.

B. Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within ±20

percent of the correct value with a confidence level of 95 percent. The calibration error test, the field test for accuracy (relative), and associated operating and calculation procedures set forth in Performance Specification 2 shall be used for demonstrating compliance with this specification. All continuous monitoring systems installed under this item shall be upgraded or replaced with new continuous monitoring systems which comply with the performance evaluations set forth in subpart 2 by September 11, 1979.

Subp. 5. **Zero and span drift.** Owners or operators who are required to install continuous monitoring systems shall check the zero and span drift at least once daily in accordance with the method prescribed by the manufacturer of such systems unless the manufacturer recommends adjustments at shorter intervals, in which case such recommendations shall be followed. The zero and span shall, as a minimum, be adjusted whenever the 24-hour zero drift or 24-hour calibration drift limits of the performance specifications in Performance Specification 1, 2, or 3, whichever is applicable, are exceeded. For continuous monitoring systems measuring opacity of emissions, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero or span drift adjustments except that for systems using automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds four percent opacity. Unless otherwise approved by the agency, the following procedures, as applicable, shall be followed:

A. For extractive continuous monitoring systems measuring gases, minimum procedures shall include introducing applicable zero and span gas mixtures into the measurement system as near the probe as is practical. Span and zero gases certified by their manufacturer to be traceable to National Bureau of Standards reference gases shall be used whenever these reference gases are available. The span and zero gas mixtures shall be the same composition as specified in Performance Specification 1, 2, or 3, whichever is applicable. Every six months from date of manufacture, span and zero gases shall be reanalyzed by conducting triplicate analyses with Reference Method 6 for SO_2, Reference Method 7 for NO_x, and Reference Method 3 for O_2 and CO_2, respectively. The gases may be analyzed at less frequent intervals if longer shelf lives are guaranteed by the manufacturer.

B. For nonextractive continuous monitoring systems measuring gases, minimum procedures shall include upscale check(s) using a certified calibration gas cell or test cell which is functionally equivalent to a known gas concentration. The zero check may be performed by computing the zero value from upscale measurements or by mechanically producing a zero condition.

C. For continuous monitoring systems measuring opacity of emissions, minimum procedures shall include a method of producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

Subp. 6. **Operation requirements.** Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

A. All continuous monitoring systems for measuring opacity of emissions shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive ten-second period.

B. All continuous monitoring systems, except those old systems installed under subpart 4, for measuring oxides of nitrogen, sulfur dioxide, carbon dioxide, or oxygen shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

All old continuous monitoring systems installed under subpart 4 for measuring oxides of nitrogen, sulfur dioxide, carbon dioxide, or oxygen shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive one-hour period.

Subp. 7. **Location of system.** All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable performance specifications shall be used.

Subp. 8. **Number of sources of emissions.** When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install applicable continuous monitoring systems on each separate effluent unless the installation of fewer systems is approved by the agency.

Subp. 9. **Monitoring data.** Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to six-minute averages except that a one minute averaging period as described in part 7005.1860, subpart 7, item B shall be used in the event an applicable standard of performance for opacity allows an excursion above the standard for a specified number of minutes in a one-hour period. Opacity averages shall be calculated from all equally spaced consecutive 15 second (or shorter) data points in the applicable averaging period. For systems other than opacity, the data shall be reduced to one hour averages, which shall be computed from four or more data points equally spaced over each one hour period.

Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this subpart. An arithmetic or integrated average of all data may be used. The data output of all continuous monitoring systems may be recorded in reduced or nonreduced form (e.g. ppm pollutant and percent O_2 or lb of pollutant/million Btu). All excess emissions shall be converted into units of the standard using the conversion procedures specified in the applicable regulation. After conversion into units of the standard, the data may be rounded to the same number of significant digits used in the regulation to specify the applicable standard (e.g. rounded to the nearest one percent opacity).

Subp. 10. **Exceptions.** Upon written application by an owner or operator, the director may approve alternatives to any monitoring procedures or requirements including, but not limited to, the following:

A. Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances with the effluent gases.

B. Alternative monitoring requirements when the affected facility is infrequently operated.

C. Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct for stack moisture conditions.

D. Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

E. Alternative methods of converting pollutant concentration measurements to units of the standards.

F. Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells.

G. Alternatives to the A.S.T.M. test methods or sampling procedures specified by any rule.

H. Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1 but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The director may require that such demonstration be performed for each affected facility.

I. Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities are released to the atmosphere through more than one point.

Statutory Authority: *MS s 116.07 subd 4*

7005.1860 PERFORMANCE TESTS.

Subpart 1. **Testing requirements.** The agency or the director may order the owner or operator of an emission facility to conduct or have conducted performance tests to determine the characteristics and amount of emissions of air contaminants from any affected facility.

Subp. 2. **Test method.** Unless another method is specified in an applicable rule, any owner or operator required to conduct performance tests shall utilize the following methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for stack gas velocity and volumetric flow rate;

C. Method 3 for gas analysis for carbon dioxide, excess air, and dry molecular weight;

D. Method 4 for moisture in stack gases;

E. Method 5 for concentration of particulate matter and associated moisture content;

F. Method 6 for concentration of sulfur dioxide;

G. Method 7 for concentration of nitrogen oxides;

H. Method 8 for concentration of sulfuric acid mist and sulfur dioxide;

I. Method 9 for opacity;

J. Method 10 for concentration of carbon monoxide;

K. Method 11 for concentration of hydrogen sulfide;

L. Method 101-Reference Method for Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources (Air Streams), Method 102-Reference Method for Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources (Hydrogen Streams), or Method 105-Reference Method for Determination of Mercury in Wastewater Treatment Sewage Sludges, set forth in Code of Federal Regulations, title 40, part 61, appendix B, whichever is applicable, for mercury emissions; and

M. Method 103-Beryllium Screening Method or Method 104-Reference Method for Determination of Beryllium Emissions from Stationary Sources, set forth in Code of Federal Regulations, title 40, part 61, appendix B, whichever is applicable.

Subp. 3. **Alternative test methods.** In lieu of the test method described in subpart 2, the director may:

A. specify or approve minor changes in the Reference Method set forth in subpart 2 or the applicable rule;

B. approve the use of an equivalent method; or

C. approve the use of an alternative method the results of which he has

determined to be adequate for indicating whether an affected facility is in compliance.

Subp. 4. **Testing conditions.** Performance tests shall be conducted under such conditions as the director shall specify. The owner or operator shall make available to the director such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions of performance tests unless otherwise specified in an applicable regulation.

Subp. 5. **Test runs.** Each performance test shall consist of three separate runs using the applicable test method. However, the director reserves the right to require more than three runs under unusual circumstances. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the director's approval, be determined using the arithmetic of the results of the two other runs.

Subp. 6. **Notification.** The owner or operator shall notify the director not less than 30 days prior to conducting any performance tests, unless a shorter time is accepted by the director.

Subp. 7. **Opacity.** Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards. The results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the owner or operator shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1, has been properly maintained and (at the time of the alleged violation) calibrated, and that the resulting data have not been tampered with in any way.

The opacity standards set forth in a regulation shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

Paragraph 2.5 of Method 9 (data reduction) is amended to read as follows, and this language shall be used whenever Method 9 is referenced in the rules:

A. 2.5 Data reduction. Except as provided in item B, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals. Divide the observations recorded on the record sheet into sets of 24 consecutive observations. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time and in no case shall sets overlap. For each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24. Record the average opacities on a record sheet.

B. In the event that an applicable standard of performance for opacity allows an excursion above the standard for a specified number of minutes in a one-hour period, determine the opacity as an average of four consecutive observations recorded at 15-second intervals. Determine the number of minutes in any one-hour period that the opacity exceeds a given opacity and record this information.

Subp. 8. **Agency tests.** Upon order of the agency or the director, the owner or operator of an emission facility shall allow the agency, or any authorized employee or agent of the agency, to enter upon the premises of the owner or

operator for the purposes of conducting performance tests. The owner or operator shall provide performance testing facilities which will enable the agency or its agents or employees to conduct performance tests. Such performance testing facilities shall include:

A. sampling ports adequate for test methods applicable to such facility;

B. safe sampling platform(s);

C. safe access to sampling platform(s); and

D. utilities for sampling and testing equipment;

Subp. 9. **Additional requirements.** The owner or operator shall meet any other requirements imposed by the agency or the director in ordering the running of the performance tests.

Statutory Authority: *MS s 116.07 subd 4*

7005.1870 REPORTS.

Subpart 1. **Excess emissions.** Any owner or operator of an affected facility who is required to install a continuous monitoring system shall submit a written report of excess emissions for every calendar quarter.

The report shall be submitted to the director of the division of air quality of the agency.

The report shall be submitted in accordance with the following requirements:

A. The report shall be postmarked by the 30th day following the end of each calendar quarter; and

B. The report shall contain the following information:

(1) the magnitude of excess emissions, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions;

(2) specific identification of each period of excess emissions that occurred during startups, shutdowns, and malfunctions of the affected facility, the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted;

(3) the date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and

(4) when no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

Subp. 2. **Other data.** The owner or operator of any affected facility shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by any regulation and shall keep that file in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.

Subp. 3. **Breakdowns.** The owner or operator of an affected facility shall maintain records of the occurrence and duration of any startup, shutdown, breakdown, or malfunction in operation of the facility or any air pollution control equipment. The owner or operator shall maintain records of any periods of time in which a continuous monitoring system or monitoring device is inoperative. These records shall be retained for at least two years following the date of such shutdown, startup, breakdown, malfunction, or inoperation. These records shall be submitted to the agency at such times as the director may require.

Subp. 4. **Emission inventory.** All owners or operators of emission facilities which emit more than 25 tons per year of particulate matter, sulfur oxides, nitrogen oxides, carbon monoxide, or hydrocarbons shall submit on or before April 1 of each year an emission inventory report covering the previous calendar year.

Statutory Authority: *MS s 116.07 subd 4*

7005.1880 SHUTDOWNS AND BREAKDOWNS.

Subpart 1. **Shutdown.** The owner or operator of an emission facility shall notify the director at least 24 hours in advance of shutdown of any control equipment and, if the shutdown would cause an increase in the emission of air contaminants, of a shutdown of any process equipment. At the time of notification, the owner or operator shall also notify the director of the cause of the shutdown and the estimated duration. The owner or operator shall notify the director when the shutdown is over.

Subp. 2. **Breakdown.** The owner or operator of an emission facility shall notify the director immediately of a breakdown of more than one hour duration of any control equipment and, if the breakdown causes an increase in the emission of air contaminants, of a breakdown of any process equipment. At the time of notification or as soon thereafter as possible, the owner or operator shall also notify the director of the cause of the breakdown and the estimated duration. The owner or operator shall notify the director when the breakdown is over.

Subp. 3. **Operation changes.** In any shutdown or breakdown covered by subpart 1 or 2, the owner or operator shall immediately take all practical steps to modify operations to reduce the emission of air contaminants. The director may require feasible and practical modifications in the operation to reduce emissions of air contaminants. No affected facility which has an unreasonable breakdown frequency of control equipment shall be permitted to operate. Nothing in this part shall permit the operation of an affected facility which may cause an immediate public health hazard.

Subp. 4. **Monitoring equipment.** The owner or operator of a continuous monitoring system or monitoring device shall notify the director of any breakdown or malfunction of such system or device.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR PORTLAND CEMENT PLANTS

7005.1900 DEFINITION.

As used in parts 7005.1900 to 7005.1950, "portland cement plant" means any facility manufacturing portland cement by either the wet or dry process.

Statutory Authority: *MS s 116.07 subd 4*

7005.1910 STANDARDS OF PERFORMANCE FOR EXISTING PORTLAND CEMENT PLANTS.

No owner or operator of an existing portland cement plant shall cause or allow the discharge into the atmosphere of any gases which:

A. contain particulate matter in excess of the limits established by parts 7005.0450 to 7005.0520; or

B. exhibit greater than 20 percent opacity, except that a maximum of 40 percent opacity shall be permissible for not more than four minutes in any 30-minute period and a maximum of 60 percent opacity shall be permissible for not more than four minutes in any 60-minute period.

The requirements of this part are applicable to the kiln, the clinker cooler, the raw mill system, the raw mill dryer, raw material storage, the finish mill system, clinker storage, finished product storage, conveyor transfer points, and bagging and bulk loading and unloading systems.

Statutory Authority: *MS s 116.07 subd 4*

7005.1920 STANDARDS OF PERFORMANCE FOR NEW PORTLAND CEMENT PLANTS.

No owner or operator of a new portland cement plant shall cause or allow the discharge into the atmosphere from the kiln any gases which contain particulate matter in excess of 0.15 kilogram per metric ton (0.30 pound per ton) of feed (dry basis) to the kiln, or exhibit greater than 20 percent opacity.

No owner or operator of a new portland cement plant shall cause or allow the discharge into the atmosphere from the clinker cooler of any gases which contain particulate matter in excess of 0.050 kg per metric ton of feed (dry basis) to the kiln (0.10 lb per ton), or exhibit greater than ten percent opacity.

No owner or operator of a new portland cement plant shall cause or allow the discharge into the atmosphere from the raw mill system, the raw mill dryer, raw mill storage, the finish mill system, clinker storage, finished product storage, conveyor transfer points, or the bagging and bulk loading and unloading systems of any gases which exhibit greater than ten percent opacity.

Statutory Authority: *MS s 116.07 subd 4*

7005.1930 MONITORING OF OPERATIONS.

The owner or operator of any portland cement plant shall record the daily production rates and kiln feed rates.

Statutory Authority: *MS s 116.07 subd 4*

7005.1940 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any owner or operator required to submit performance tests for a portland cement plant shall utilize the following test methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 3 for gas analysis;

D. Method 5 for the concentration of particulate matter and the associated moisture content; and

E. Method 9 for visual determination of opacity.

Statutory Authority: *MS s 116.07 subd 4*

7005.1950 PERFORMANCE TEST PROCEDURES.

In testing for the concentration of particulate matter and the associated moisture content, the minimum sampling time and minimum sample volume for each run, except when other times and volumes are approved by the agency, shall be as follows: 60 minutes and 30 dscf (0.85 dscm) for the kiln, and 60 minutes and 40.6 dscf (1.15 dscm) for the clinker cooler.

Total kiln feed rate (except fuels) expressed in tons per hour on a dry basis, shall be determined during each testing period by a method approved by the agency, and shall be confirmed by a material balance over the production system.

For each run, particulate matter emissions, expressed in pounds per ton of kiln feed, shall be determined by dividing the emission rate in pounds per hour by the kiln feed rate. The emission rate shall be determined by the equation, lb/hr $= Q_s \times c$, where Q_s = volumetric flow rate of the total effluent in dscf/hr as determined in accordance with part 7005.1940, item B, and c = particulate concentration in lb/dscf as determined in accordance with part 7005.1940, item D.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR ASPHALT CONCRETE PLANTS

7005.2000 DEFINITION.

"Asphalt concrete plant" means any facility used to manufacture asphalt concrete by heating and drying aggregate and mixing with asphalt cements. "Asphalt concrete plant" includes dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing asphalt concrete; and the loading, transfer, and storage systems associated with emission control systems.

Statutory Authority: *MS s 116.07 subd 4*

7005.2010 STANDARDS OF PERFORMANCE FOR EXISTING ASPHALT CONCRETE PLANTS.

No owner or operator of an existing asphalt concrete plant shall cause to be discharged into the atmosphere from the asphalt concrete plant any gases which:

A. contain particulate matter in excess of the limits allowed by parts 7005.0450 to 7005.0520; or

B. exhibit greater than 20 percent opacity, except that a maximum of 40 percent opacity shall be permissible for not more than four minutes in any 30-minute period and a maximum of 60 percent opacity shall be permissible for not more than four minutes in any 60-minute period.

Statutory Authority: *MS s 116.07 subd 4*

7005.2020 STANDARDS OF PERFORMANCE FOR NEW ASPHALT CONCRETE PLANTS.

No owner or operator of a new asphalt concrete plant shall cause to be discharged into the atmosphere from the asphalt concrete plant any gases which:

A. contain particulate matter in excess of 90 mg/dscm (0.04 gr/dscf); or

B. exhibit 20 percent opacity or greater.

Statutory Authority: *MS s 116.07 subd 4*

7005.2030 TEST METHODS.

Unless another method is approved by the agency, any owner or operator required to submit performance tests for an asphalt concrete plant shall utilize the following test methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 3 for gas analysis; and

D. Method 5 for the concentration of particulate matter and the associated moisture content.

Statutory Authority: *MS s 116.07 subd 4*

7005.2040 PERFORMANCE TEST PROCEDURES.

For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the agency.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR PETROLEUM REFINERIES

7005.2100 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2100 to 7005.2160 the following words shall have the meanings defined herein.

Subp. 2. **Coke burn-off.** "Coke burn-off" means the coke removed from the surface of the fluid catalytic cracking unit catalyst by combustion in the catalyst regenerator. The rate of coke burn-off is calculated by the formula specified in part 7005.2160, subpart 5.

Subp. 3. **Fossil fuel.** "Fossil fuel" means natural gas, petroleum, coal, wood, and any form of solid, liquid, or gaseous fuel derived from such materials.

Subp. 4. **Fuel gas.** "Fuel gas" means any gas which is generated by a petroleum refinery process unit and which is combusted, including any gaseous mixture of a natural gas and fuel gas which is combusted.

Subp. 5. **Fuel gas combustion device.** "Fuel gas combustion device" means any equipment, such as process heaters, boilers, and flares used to combust fuel gas, but does not include fluid coking units and fluid catalytic cracking unit incinerator-waste heat boilers and facilities in which gases are combusted to produce sulfur or sulfuric acid.

Subp. 6. **Heat input.** "Heat input" means the number of Btu per hour (cal/hr) determined by multiplying the high heating value (Btu/lb) (cal/gm) of each fossil fuel or fuel gas that is fired in the indirect heating equipment or fuel gas combustion device (at the time of determining the heat input) times the rate of each fuel burned (lb/hr) (gm/hr).

Subp. 7. **High heating value.** "High heating value" means the number of (Btu/lb) (cal/gm) of a fossil fuel as determined by the A.S.T.M. test methods described in part 7005.0350.

Subp. 8. **Indirect heating equipment.** "Indirect heating equipment" means a furnace, boiler, or other unit of combustion equipment used in the process of burning fossil fuel for the purpose of producing steam, hot water, hot air, or other hot liquid, gas, or solid, where the products of combustion do not have direct contact with the heated medium. "Indirect heating equipment" includes all fuel gas combustion devices which burn a liquid or solid fossil fuel but does not include fluid catalytic cracking unit incinerator-waste heat boilers, fluid coking units, and facilities in which gases are combusted to produce sulfur or sulfuric acid.

Subp. 9. **Petroleum.** "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Subp. 10. **Petroleum refinery.** "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oil, lubricants, or other products through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives. "Petroleum refinery" includes fluid catalytic cracking unit catalyst regenerators, fluid catalytic cracking unit incinerator-waste heat boilers, fuel gas combustion devices, and all indirect heating equipment associated with the refinery.

Subp. 11. **Process gas.** "Process gas" means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this part.

Subp. 12. **Process upset gas.** "Process upset gas" means any gas generated by a petroleum refinery process unit as a result of start-up, shutdown, upset, or malfunction.

Subp. 13. **Refinery process unit.** "Refinery process unit" means any segment of the petroleum refinery in which a specific processing operation is conducted.

Subp. 14. **Steam generating unit.** "Steam generating unit" means indirect heating equipment used to produce steam.

Statutory Authority: *MS s 116.07 subd 4*

7005.2110 STANDARDS OF PERFORMANCE FOR EXISTING AFFECTED FACILITIES AT PETROLEUM REFINERIES.

Subpart 1. **Fluid catalytic cracking unit catalyst regenerator and incinerator-waste heat boiler.** No owner or operator of an existing fluid catalytic cracking unit

catalyst regenerator or its incinerator-waste heat boiler at a petroleum refinery shall cause to be discharged into the atmosphere from such regenerator or its incinerator-waste heat boiler any gases which:

A. contain particulate matter in excess of 10.0 lb/1000 lb (10.0 kg/1000 kg) of coke burn-off in the catalyst regenerator; or

B. exhibit greater than 30 percent opacity, except that 30 percent opacity may be exceeded for three minutes in any 60-minute period and except that this opacity standard shall not apply during periods of soot blowing.

If auxiliary liquid or solid fossil fuels are burned in the fluid catalytic cracking unit incinerator-waste heat boiler, particulate matter in excess of that permitted by item A may be emitted provided that the incremental rate of particulate emissions shall not exceed 0.4 pounds per million Btu (0.72 grams per million cal) of heat input attributable to such liquid or solid fossil fuel.

Subp. 2. **Fuel gas combustion device and indirect heating equipment.** No owner or operator of existing fuel gas combustion devices and indirect heating equipment at a petroleum refinery shall cause to be discharged into the atmosphere from such devices and equipment any gases which contain sulfur dioxide in excess of 1.75 pounds per million Btu (3.15 grams per million cal) heat input. The total emissions of sulfur dioxide from all existing fuel gas combustion devices and all indirect heating equipment shall be divided by the total heat input of all such devices and equipment to determine compliance with this section; provided that no owner or operator shall cause to be discharged from any one fuel gas combustion device or any one unit of indirect heating equipment any gases which contain sulfur dioxide in excess of 3.0 pounds per million Btu (5.4 grams per million cal) heat input.

Subp. 3. **Indirect heating equipment.** No owner or operator of existing indirect heating equipment at a petroleum refinery shall cause to be discharged into the atmosphere from such equipment any gases which:

A. contain particulate matter in excess of 0.4 pounds per million Btu (0.72 grams per million cal) heat input; or

B. exhibit greater than 20 percent opacity, except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.

Statutory Authority: *MS s 116.07 subd 4*

7005.2120 STANDARDS OF PERFORMANCE FOR NEW AFFECTED FACILITIES AT PETROLEUM REFINERIES.

Subpart 1. **Fluid catalytic cracking unit catalyst regenerator and incinerator-waste heat boiler.** No owner or operator of a new fluid catalytic cracking unit catalyst regenerator or its incinerator-waste heat boiler at a petroleum refinery shall cause to be discharged into the atmosphere from such regenerator or incinerator-waste heat boiler any gases which:

A. contain particulate matter in excess of 1.0 lb/1000 lb (1.0 kg/1000 kg) of coke burn-off in the catalyst regenerator; or

B. exhibit greater than 30 percent opacity, except that 30 percent opacity may be exceeded for three minutes in any 60-minute period.

If auxiliary liquid or solid fossil fuels are burned in the fluid catalytic cracking unit incinerator-waste heat boiler, particulate matter in excess of that permitted by item A may be emitted provided that the incremental rate of particulate emissions shall not exceed 0.1 pound per million Btu of heat input attributable to such liquid or solid fossil fuel.

No owner or operator of a new fluid catalytic cracking unit catalyst regenerator at a petroleum refinery shall cause to be discharged into the atmosphere from such regenerator any gases which contain carbon monoxide in excess of 0.050 percent by volume.

Subp. 2. **Fuel gas combustion device.** No owner or operator of a new fuel gas combustion device at a petroleum refinery shall burn in any such device any fuel gas which contains H_2S in excess of 0.10 gr/dscf, (230 mg/dscm) except as provided herein. The owner or operator may elect to treat the gases resulting from the combustion of fuel gas in a manner which limits the release of SO_2 to the atmosphere if it is shown to the satisfaction of the director that this prevents SO_2 emissions as effectively as compliance with the H_2S restriction set forth above.

Subp. 3. **Indirect heating equipment.** Indirect heating equipment:

A. No owner or operator of new indirect heating equipment at a petroleum refinery shall cause to be discharged into the atmosphere from such equipment any gases which contain sulfur dioxide in excess of 1.75 pounds per million Btu (3.15 grams per million cal) heat input. The total emissions of sulfur dioxide from all existing and new fuel gas combustion devices and indirect heating equipment shall be divided by the total heat input of all such devices and equipment to determine compliance with this part; provided that no owner or operator shall cause to be discharged from any one unit of new indirect heating equipment any gases which contain sulfur dioxide in excess of 3.0 pounds per million Btu (5.4 grams per million cal) heat input.

B. No owner or operator of new indirect heating equipment at a petroleum refinery shall cause to be discharged into the atmosphere from such equipment any gases which:

(1) contain particulate matter in excess of 0.4 pounds per million Btu (0.72 grams per million cal) heat input; or

(2) exhibit greater than 20 percent opacity, except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.

C. The owner or operator of a new steam generating unit of more than 250 million Btu per hour (63 million cal per hour) heat input at a petroleum refinery shall comply with the following requirements:

(1) No gases shall be discharged from the steam generating unit which contain particulate matter in excess of 0.1 pounds per million Btu (0.18 grams per million cal) heat input.

(2) No gases shall be discharged which exhibit greater than 20 percent opacity, except that a maximum of 40 percent opacity shall be permissible for two minutes in any hour.

(3) No gases shall be discharged which contain sulfur dioxide in excess of 0.80 pounds per million Btu (1.4 grams per million cal) heat input if a liquid fossil fuel is burned and 1.2 pounds per million Btu (2.2 grams per million cal) heat input if a solid fossil fuel is burned. When different fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula:

$$x = \frac{y(0.8) + z(1.2)}{y + z}$$

where:

x is the maximum allowable emissions of sulfur dioxide gases in lbs/per million Btu;

y is the percentage of total heat input derived from liquid fossil fuel;

z is the percentage of total heat input derived from solid fossil fuel; and

Compliance shall be based on the total heat input from all fossil fuel burned including gaseous fuels.

Statutory Authority: *MS s 116.07 subd 4*

7005.2130 EXEMPTIONS.

The combustion of process upset gas in a flare, or the combustion in a flare of process gas or fuel gas which is released to the flare as a result of relief valve leakage, is exempt from the standards of performance set forth in these parts.

The standards of performance promulgated in parts 7005.2100 to 7005.2160 for indirect heating equipment shall not apply to indirect heating equipment at a petroleum refinery. Only those standards of performance for indirect heating equipment set forth in these parts shall apply to such equipment.

Statutory Authority: *MS s 116.07 subd 4*

7005.2140 EMISSION MONITORING.

Subpart 1. **Fluid catalytic cracking unit catalyst regenerators.** Fluid catalytic cracking unit catalyst regenerators:

A. Opacity.

(1) The owner or operator of any new fluid catalytic unit catalyst regenerator and the owner or operator of an existing fluid catalytic cracking unit catalyst regenerator for fluid bed catalyst cracking units of greater than 20,000 barrels per day fresh feed capacity shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity of emissions discharged into the atmosphere from the regenerator.

(2) The continuous monitoring system shall be spanned at 60, 70, or 80 percent opacity.

B. Coke burn-off. The average coke burn-off rate (thousands of pounds per hour or thousands of kilograms per hour) and hours of operation of any fluid catalytic cracking unit catalyst regenerator shall be recorded daily.

Subp. 2. **Fuel gas combustion devices.** Fuel gas combustion devices:

A. Sulfur dioxide.

(1) The owner or operator of a new fuel gas combustion device at a petroleum refinery shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of sulfur dioxide in the gases discharged into the atmosphere.

(2) The pollutant gas used to prepare calibration gas mixtures and for calibration checks shall be sulfur dioxide (SO_2).

(3) The span shall be set at 100 ppm.

(4) Reference Method 6 shall be used for conducting monitoring system performance specifications.

(5) For the purpose of reports under part 7005.1870, subpart 1, item B, periods of excess emissions that shall be reported are defined as any six-hour period during which the average emissions (arithmetic average of six continuous one-hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the applicable standards of performance in part 7005.2120.

B. Hydrogen sulfide. The owner or operator of a new fuel gas combustion device at a petroleum refinery may elect to install a continuous monitoring system for the measurement of hydrogen sulfide in the fuel gas instead of the sulfur dioxide monitor described in item A. The owner or operator shall notify the director in writing of such election. The owner or operator who elects to install the hydrogen sulfide monitor shall not be required to do so until monitoring requirements for such a system are promulgated; provided, however, the director may require the installation of a sulfur dioxide monitor under the provisions of part 7005.1850, subpart 1.

Subp. 3. **Incinerator waste heat boilers.** The owner or operator of any fluid catalytic cracking unit catalyst regenerator at a petroleum refinery which utilizes an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator shall record daily the rate of combustion of liquid or solid fossil fuels

(gallons per hour or liters per hour, pounds per hour or kilograms per hour) and the hours of operation during which liquid or solid fossil fuels are combusted in the incinerator-waste heat boiler.

Statutory Authority: *MS s 116.07 subd 4*

7005.2150 PERFORMANCE TEST METHODS.

Subpart 1. **In general.** Unless another method is approved by the director, any person required to submit performance tests for a petroleum refinery shall utilize the following test methods.

Subp. 2. **Gases released to atmosphere from fluid catalytic cracking unit catalyst regenerator.** For gases released to the atmosphere from the fluid catalytic cracking unit catalyst regenerator:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 5 for the concentration of particulate matter and moisture content;

D. Method 9 for visual determination of the opacity of emissions from stationary sources;

E. Method 10 for carbon monoxide.

Subp. 3. **Exhaust gases.** For exhaust gases from the fluid catalytic cracking unit catalyst regenerator prior to the emission control system:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate.

C. Method 3 for gas analysis;

D. Method 4 for moisture content.

Subp. 4. **Determination of concentration.** For determining the concentration of H_2S in any fuel gas, Method 11 shall be used.

Subp. 5. **Gases to atmosphere from combustion.** For gases released to the atmosphere from the combustion of fuel gas, fossil fuel, and the combination of fuel gas and fossil fuel:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 5 for the concentration of particulate matter and moisture content;

D. Method 6 for concentration of SO_{O2};

E. Method 9 for visual determination of the opacity of emissions from stationary sources.

Statutory Authority: *MS s 116.07 subd 4*

7005.2160 PERFORMANCE TEST PROCEDURES.

Subpart 1. **Sampling time.** For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm (0.53 dscf/min), except that shorter sampling times may be approved by the agency when process variable or other factors preclude sampling for at least 60 minutes.

Subp. 2. **Extraction rate.** For Method 10, the sample shall be extracted at a rate proportional to the gas velocity at a sampling point near the centroid of the duct. The sampling time shall not be less than 60 minutes.

Subp. 3. **Introduction of gases into sampling train.** For Method 11, when refinery fuel gas lines are operating at pressures substantially above atmospheric, the gases sampled must be introduced into the sampling train at approximately atmospheric pressure. This may be accomplished with a flow control valve. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall

be drawn from a point near the centroid of the fuel gas line. The minimum sampling time shall be ten minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples shall constitute one run. Samples shall be taken at approximately one-hour intervals. For most fuel gases, sample times exceeding 20 minutes may result in depletion of the collecting solution, although fuel gases containing low concentrations of hydrogen sulfide may necessitate sampling for longer periods of time.

Subp. 4. **Sampling to determine SO_2 concentration.** The sampling site for determining SO_2 concentration by Method 6 shall be the same as for determining volumetric flow rate by Method 2. The sampling point in the duct for determining SO_2 concentration by Method 6 shall be at the centroid of the cross section if the cross sectional area is less than 5 m^2 (54 ft^2) or at a point no closer to the walls than 1 meter (39 inches) if the cross sectional area is 5 m^2 or more and the centroid is more than one meter from the wall. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be ten minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples shall constitute one run. Samples shall be taken at approximately one-hour intervals.

Subp. 5. **Coke burn-off rate.** Coke burn-off rate shall be determined by the following formula:

$$R_c = 0.2982\, Q_{re}\,(\%CO_2 + \%CO) + 2.088\, Q_{ra} - 0.0994\, Q_{re}\left(\frac{\%CO}{2} + \%CO_2 + \%O_2\right) \text{(Metric Units)}$$

$$R_c = 0.0186\, Q_{re}\,(\%CO_2 + \%CO) + 0.1303\, Q_{ra} - 0.0062\, Q_{re}\left(\frac{\%CO}{2} + CO_2 + O_2\right) \text{(English Units)}$$

R_c = coke burn-off rate, kg/hr (English units lb/hr).

0.2982 = metric units material balance factor divided by 100, kg-min/hr-m^3;

0.0186 = English units material balance factor divided by 100, lb-min/hr-ft^3;

Q_{re} = fluid catalytic cracking unit catalyst regenerator exhaust gas flow rate before entering the emission control system, as determined by Method 2, dscm/min (English units: dscf/min);

$\%CO_2$ = percent carbon dioxide by volume, dry basis, as determined by Method 3;

%CO = percent carbon monoxide by volume, dry basis, as determined by Method 3;

$\%O_2$ = percent oxygen by volume, dry basis, as determined by Method 3;

2.088 = metric units material balance factor divided by 100, kg-min/hr-m^3;

0.1303 = English units material balance factor divided by 100, lb-min/hr-ft^3;

Q_{ra} = air rate to fluid catalytic cracking unit catalyst regenerator, as determined from fluid catalytic cracking unit control room instrumentation, dscm/min (English units: dscf/min);

0.0994 = metric units material balance factor divided by 100, kg-min/hr-m^3;

0.0062 = English units material balance factor divided by 100, lb-min/hr-ft^3;

Subp. 6. **Particulate emissions.** Particulate emissions shall be determined by the following equation:

$R_e = (60x10^{-6}) Q_{rv}C_x$ (metric units); or

$R_e = (8.57x10^{-3}) Q_{rv}C_s$ (English units)

where:

R_e = particulate emission rate, kg/hr (English units: lb-hr);

$60x10^{-6}$ = metric units conversion factor, min-kg/hr-gr;

$8.57x10^{-3}$ = English units conversion factor, min-lb/hr.gr;

Q_{rv} = volumetric flow rate of gases discharged into the atmosphere from the fluid catalytic cracking unit catalyst regenerator following the emission control system, as determined by Method 2, dscm/min (English units: dscf/min);

C_s = particulate emission concentration discharged in the atmosphere, as determined by Method 5, mg/dscm (English units: gr/dscf).

Subp. 7. **Coke burn-off.** For each run, emissions expressed in kg/1000 kg (lb/1000 lb) of coke burn-off in the catalyst regenerator shall be determined by the following equation:

$$R_s = 1000 \frac{R_e}{R_c} \text{(Metric or English Units)}$$

where:

R_s = particulate emission rate, kg/1000 kg (lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator;

1000 = conversion factor, kg to 1000 kg (lb to 1000 lb);

R_e = particulate emission rate, kg/hr (lb/hr);

R_c = coke burn-off rate, kg/hr (lb/hr).

Subp. 8. **Rate of particulate matter emissions permitted.** In those instances in which auxiliary liquid or solid fossil fuels are burned in an incinerator-waste heat boiler, the rate of particulate matter emissions permitted must be determined. Auxiliary fuel heat input, expressed in millions of cal/hr (English units: millions of Btu/hr) shall be calculated for each run by fuel flow rate measurement and analysis of the liquid or solid auxiliary fossil fuels. For each run, the rate of particulate emissions permitted shall be calculated from the following equation:

New Affected Facilities	Existing Affected Facilities	
$R_a = 1.0 + \frac{0.18\ H}{R_c}$	$R_a = 10.0 + \frac{0.72\ H}{R_c}$	(Metric Units)
or		
$R_a = 1.0 + \frac{0.10\ H}{R_c}$	$R_a = 10.0 + \frac{0.4\ H}{R_c}$	(English Units)

where:

R_a = allowable particulate emission rate, kg/1000 kg (English units: lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator;

1.0 = emission standard for new affected facilities, 1.0 kg/1000 kg (English units: 1.0 lb/1000 lb) of coke burn-off in the fluid catalytic cracking unit catalyst regenerator;

10.0 = emission standard for existing affected facilities;

0.18 = metric units maximum allowable incremental rate of particulate emissions for new affected facilities gm/million cal;

0.10 = English units maximum allowable incremental rate of particulate emissions for new affected facilities, lb/million Btu;

0.72 = metric units maximum allowable incremental rate of particulate emissions for existing affected facilities gm/million cal;

0.4 = English units maximum allowable incremental rate of particulate emissions for existing affected facilities, lb/million Btu;

H = heat input from solid or liquid fossil fuel, million cal/hr (English units: million Btu/hr);

R_c = coke burn-off rate, kg/hr (English units: lb/hr).

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR SECONDARY LEAD SMELTERS

7005.2200 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2200 to 7005.2230, the following words shall have the meanings defined herein.

Subp. 2. **Lead.** "Lead" means elemental lead or alloys in which the predominant component is lead.

Subp. 3. **Reverberatory furnace.** "Reverberatory furnace" includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

Subp. 4. **Secondary lead smelter.** "Secondary lead smelter" means any facility producing lead from a lead-bearing scrap material by smelting to the metallic form.

Statutory Authority: *MS s 116.07 subd 4*

7005.2210 STANDARDS OF PERFORMANCE FOR SECONDARY LEAD SMELTERS.

No owner or operator of a secondary lead smelter shall cause to be discharged into the atmosphere from a blast (cupola) furnace or reverberatory furnace any gases which:

A. contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf);

B. exhibit 20 percent opacity or greater.

No owner or operator of a secondary lead smelter shall cause to be discharged into the atmosphere from any pot furnace of more than 250 kg (550 lb) any gases which exhibit ten percent opacity or greater.

Statutory Authority: *MS s 116.07 subd 4*

7005.2220 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any owner or operator required to submit performance tests for a secondary lead smelter shall utilize the following test methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 3 for gas analysis; and

D. Method 5 for the concentration of particulate matter and the associated moisture content.

Statutory Authority: *MS s 116.07 subd 4*

7005.2230 PERFORMANCE TEST PROCEDURES.

In testing for the concentration of particulate matter and the associated moisture content, the minimum sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the agency. Particulate sampling shall be conducted during representative periods of furnace operation, including charging and tapping.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR SECONDARY BRASS AND BRONZE INGOT PRODUCTION PLANTS

7005.2250 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2250 to 7005.2280, the following words shall have the meanings defined herein.

Subp. 2. **Blast furnace.** "Blast furnace" means any furnace used to recover metal from slag.

Subp. 3. **Brass or bronze.** "Brass or bronze" means any metal alloy containing copper as its predominant constituent, and lesser amounts of zinc, tin, lead, or other metals.

Subp. 4. **Brass or bronze ingot production plant.** "Brass or bronze ingot production plant" means any facility producing brass or bronze from a copper alloy-bearing scrap material by smelting to the metallic form.

Subp. 5. **Electric furnace.** "Electric furnace" means any furnace which uses electricity to produce over 50 percent of the heat required in the production of refined brass or bronze.

Subp. 6. **Reverberatory furnace.** "Reverberatory furnace" includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

Statutory Authority: *MS s 116.07 subd 4*

7005.2260 STANDARDS OF PERFORMANCE FOR SECONDARY BRASS AND BRONZE INGOT PRODUCTION PLANTS.

No owner or operator of a secondary brass or bronze ingot production plant shall cause to be discharged into the atmosphere from a reverberatory furnace any gases which:

A. contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf);

B. exhibit 20 percent opacity or greater.

No owner or operator of a secondary brass or bronze ingot production plant shall cause to be discharged into the atmosphere from any electric furnace of 1,000 kg (2,205 lbs) or greater production capacity any gases which exhibit ten percent opacity or greater.

No owner or operator of a secondary brass or bronze ingot production plant shall cause to be discharged into the atmosphere from any blast (cupola) furnace of 250 kg/hr (550 lb/hr) or greater production capacity any gases which exhibit ten percent opacity or greater.

No owner or operator of a secondary brass or bronze ingot production plant shall cause to be discharged into the atmosphere from any electric furnace of less than 1,000 kg (2,205 lbs) production capacity or any blast (cupola) furnace of less than 250 kg/hr (550 lb/hr) production capacity any gases which exceed the limits of parts 7005.0450 to 7005.0520 for particulate emissions, and exhibit 20 percent opacity or greater.

Statutory Authority: *MS s 116.07 subd 4*

7005.2270 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any owner or operator required to submit performance tests for a brass or bronze ingot production plant shall utilize the following test methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for velocity and volumetric flow rate;

C. Method 3 for gas analysis;

D. Method 5 for the concentration of particulate matter and the associated moisture content.

Statutory Authority: *MS s 116.07 subd 4*

7005.2280 PERFORMANCE TEST PROCEDURES.

In testing for the concentration of particulate matter and the associated moisture content, the minimum sampling time for each run shall be at least 120 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the agency. Particulate matter sampling shall be conducted during representative periods of charging and refining, but not during pouring of the heat.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR IRON AND STEEL PLANTS

7005.2300 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2300 to 7005.2330, the following words shall have the meanings defined herein.

Subp. 2. **Basic oxygen process furnace.** "Basic oxygen process furnace (BOPF)" means any furnace producing steel by charging scrap metal, hot metal, and flux materials into a vessel and introducing a high volume of an oxygen-rich gas.

Subp. 3. **Steel production cycle.** "Steel production cycle" means the operations required to produce each batch of steel and includes the following major functions: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, additional oxygen blowing (when used), and tapping.

Statutory Authority: *MS s 116.07 subd 4*

7005.2310 STANDARDS OF PERFORMANCE FOR IRON AND STEEL PLANTS.

No owner or operator of an iron and steel plant shall cause to be discharged into the atmosphere from any basic oxygen process furnace any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

Statutory Authority: *MS s 116.07 subd 4*

7005.2320 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any owner or operator required to submit performance tests for an iron and steel plant shall utilize the following test methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for volumetric flow rate;

C. Method 3 for gas analysis;

D. Method 5 for concentration of particulate matter and associated moisture content.

Statutory Authority: *MS s 116.07 subd 4*

7005.2330 PERFORMANCE TEST PROCEDURES.

In testing for the concentration of particulate matter and the associated moisture content, the sampling for each run shall continue for an integral number of steel production cycles with total duration of at least 60 minutes. The sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the agency. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR SEWAGE SLUDGE INCINERATORS

7005.2350 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2350 to 7005.2400, the following words shall have the meanings defined herein.

Subp. 2. **Burning capacity.** "Burning capacity" means the manufacturer's or designer's maximum rate or such other rate that is considered good engineering practice and accepted by the director.

Subp. 3. **Sewage sludge incinerator.** "Sewage sludge incinerator" means any furnace or other device used in the process of burning sludge produced by a sewage treatment facility.

Statutory Authority: *MS s 116.07 subd 4*

7005.2360 STANDARDS OF PERFORMANCE FOR EXISTING SEWAGE SLUDGE INCINERATORS.

No owner or operator of an existing sewage sludge incinerator shall cause to be discharged into the atmosphere from the sewage sludge incinerator any gases which:

A. contain particulate matter in excess of 0.3 gr/dscf corrected to 12 percent CO_2 if the incinerator has a burning capacity of less than 200 pounds per hour;

B. contain particulate matter in excess of 0.2 gr/dscf corrected to 12 percent CO_2 if the incinerator has a burning capacity of 200 to 2,000 pounds per hour;

C. contain particulate matter in excess of 0.1 gr/dsf corrected to 12 percent CO_2 if the incinerator has a burning capacity of greater than 2,000 pounds per hour.

No owner or operator of an existing sewage sludge incinerator shall cause to be discharged into the atmosphere from the incinerator any gases which exhibit greater than 20 percent opacity, except that a maximum of 40 percent opacity shall be permissible for four minutes in any 60-minute period.

No owner or operator of an existing sewage sludge incinerator shall operate such incinerator unless such incinerator utilizes auxiliary fuel burners that maintain a minimum temperature of 1,200 degrees Fahrenheit for a minimum retention time of 0.3 second or other method of odor control as approved by the director.

Statutory Authority: *MS s 116.07 subd 4*

7005.2370 STANDARDS OF PERFORMANCE FOR NEW SEWAGE SLUDGE INCINERATORS.

No owner or operator of a new sewage sludge incinerator shall cause to be discharged into the atmosphere from the incinerator any gases which:

A. contain particulate matter in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input); or

B. exhibit 20 percent opacity or greater.

No owner or operator of a new sewage sludge incinerator shall operate such incinerator unless such incinerator utilizes auxiliary fuel burners that maintain a minimum temperature of 1200 degrees Fahrenheit for a minimum retention time of 0.3 second or other method of odor control as approved by the director.

Statutory Authority: *MS s 116.07 subd 4*

7005.2380 MONITORING OF OPERATIONS.

The owner or operator of any sewage sludge incinerator shall:

A. Install, calibrate, maintain, and operate a flow measuring device

which can be used to determine either the mass or volume of sludge charged to the incinerator. The flow measuring device shall have an accuracy of plus or minus five percent over its operating range.

B. Provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

Statutory Authority: *MS s 116.07 subd 4*

7005.2390 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any owner or operator required to submit performance tests for a sewage sludge incinerator shall utilize the following methods:

A. Method 1 for sample and velocity traverses;

B. Method 2 for volumetric flow rate;

C. Method 3 for gas analysis; and

D. Method 5 for concentration of particulate matter and associated moisture content.

Statutory Authority: *MS s 116.07 subd 4*

7005.2400 PERFORMANCE TEST PROCEDURES.

Subpart 1. **Sampling time for Method 5.** For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the agency.

Subp. 2. **Dry sludge charging rate.** Dry sludge charging rate shall be determined as follows:

A. Determine the mass (S_m) or volume (S_v) of sludge charged to the incinerator during each run using a flow measuring device meeting the requirements of part 7005.2380, item A. If total input during a run is measured by a flow measuring device, such readings shall be used. Otherwise, record the flow measuring device readings at five-minute intervals during a run. Determine the quantity charged during each interval by averaging the flow rates at the beginning and end of the interval and then multiplying the average for each interval by the time for each interval. Then add the quantity for each interval to determine the total quantity charged during the entire run, (S_m) or (S_v).

B. Collect samples of the sludge charged to the incinerator in nonporous collecting jars at the beginning of each run and at approximately one-hour intervals thereafter until the test ends, and determine for each sample the dry sludge content (total solids residue) in accordance with "224 G. Method for Solid and Semisolid Samples," Standard Methods for the Examination of Water and Wastewater, Thirteenth Edition, American Public Health Association, Inc., New York, N.Y., 1971, pp. 539-41, except that:

(1) evaporating dishes shall be ignited to at least 103 degrees Celsius rather than the 550 degrees Celsius specified in step 3(a)(1);

(2) determination of volatile residue, step 3(b) may be deleted;

(3) the quantity of dry sludge per unit sludge charged shall be determined in terms of either R_{dv} (metric units: mg dry sludge/liter sludge charged or English units: lb/ft^3) or R_{dm} (metric units: mg dry sludge/mg sludge charged or English units: lb/lb).

C. Determine the quantity of dry sludge per unit sludge charged in terms of either R_{dv} or R_{dm}:

(1) If the volume of sludge charged is used:

$$S_d = (60 \times 10^{-3}) \frac{R_{dv} S_v \text{ (Metric Units)}}{T}$$

or

$$S_d = (8.021)\ \frac{R_{dv}S_v}{T}\ \text{(English Units)}$$

where:

S_d = average dry sludge charging rate during the run, kg/hr (English units: lb/hr);

R_{dv} = average quantity of dry sludge per unit volume of sludge charged to the incinerator, mg/l (English units: lb/ft^3);

S_v = sludge charged to the incinerator during the run, m^3 (English units: gal);

T = duration of run, min (English units: min);

$60x10^{-3}$ = metric units conversion factor, 1-kg-min/m_3-mg-hr;

8.021 = English units conversion factor, ft^3-min/gal-hr.

(2) If the mass of sludge charged is used:

$$S_d = (60)\ \frac{R_{dm}S_m}{T}\ \text{(Metric or English Units)}$$

where:

S_d = average dry sludge charging rate during the run, kg/hr (English units: lb/hr);

R_{dm} = average ratio of quantity of dry sludge to quantity of sludge charged to the incinerator, mg/mg (English units: lb/lb);

S_m = sludge charged during the run, kg (English units: lb);

T = duration of run, min (metric or English units);

60 = conversion factor, min/hr (metric or English units).

Subp. 3. **Particulate emission rate.** Particulate emission rate shall be determined by:

$C_{aw} = C_sQ_3$ (metric or English units)

where:

C_{aw} = Particulate matter mass emissions, mg/hr (English units: lb/hr).

C_s = Particulate matter concentration, mg/m^3 (English units: lb/dscf).

Q_s = Volumetric stack gas flow rate, dscm/hr (English units: dscf/hr). Q_s and c_s shall be determined using methods 2 and 5, respectively.

Subp. 4. **Compliance with standards.** Compliance with part 7005.2370 shall be determined as follows:

$$C_{ds} = (10^{-3})\ \frac{C_{aw}}{S_d}\ \text{(Metric Units)}$$

or

$$C_{ds} = (2000)\ \frac{C_{aw}}{S_d}\ \text{(English Units)}$$

where:

C_{ds} = particulate emission discharge, g/kg dry sludge (English units: lb/ton dry sludge).

10^{-3} = Metric conversion factor, g/mg.

2,000 = English conversion factor, lb/ton.

Statutory Authority: *MS s 116.07 subd 4*

7005.2450 [Repealed, 8 SR 1675]

7005.2460 [Repealed, 8 SR 1675]

7005.2470 [Repealed, 8 SR 1675]

7005.2480 [Repealed, 8 SR 1675]

7005.2490 [Repealed, 8 SR 1675]

7005.2500 [Repealed, 8 SR 1675]

7005.2510 [Repealed, 8 SR 1675]

STANDARDS OF PERFORMANCE FOR DRY BULK AGRICULTURAL COMMODITY FACILITIES

7005.2520 DEFINITIONS.

Subpart 1. **Scope.** For the purposes of parts 7005.2520 to 7005.2523 the following terms have the meanings given them.

Subp. 2. **Capture system.** "Capture system" means equipment such as hoods, ducts, fans, and dampers used to capture particulate matter.

Subp. 3. **Column dryer.** "Column dryer" means equipment used to reduce the moisture content of grain in which the grain flows from the top to the bottom in one or more continuous packed columns between two perforated metal sheets.

Subp. 4. **Dry bulk agricultural commodity, commodity.** "Dry bulk agricultural commodity" or "commodity" includes grain, grain by-products, seed, beet pulp or pellets, and alfalfa meal or pellets.

Subp. 5. **Dry bulk agricultural commodity facility.** "Dry bulk agricultural commodity facility" means a facility where bulk commodities are unloaded, handled, cleaned, dried, stored, ground, or loaded. "Dry bulk agricultural commodity facility" does not include a facility located on a family farm or family farm corporation, as defined in Minnesota Statutes, section 116B.02, which handles commodities from the farm or used on the farm.

Subp. 6. **Grain.** "Grain" means corn, wheat, sorghum, rice, rye, oats, barley, flax, soybeans, and sunflower seeds.

Subp. 7. **Grain storage elevator.** "Grain storage elevator" means a grain elevator located at a wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant that has a permanent grain storage capacity of more than 35,200 cubic meters, which is approximately 1,000,000 bushels.

Subp. 8. **Grain terminal elevator.** "Grain terminal elevator" means a grain elevator that has a permanent storage capacity of more than 88,100 cubic meters, which is approximately 2,500,000 bushels, except a grain elevator located at animal food manufacturers, pet food manufacturers, cereal manufacturers, breweries, and livestock feedlots.

Subp. 9. **Handling operation.** "Handling operation" includes the use of bucket elevators, scale hoppers, conveyors, trippers, and spouts for the distribution and weighing of commodities within a commodity facility.

Subp. 10. **Loading station.** "Loading station" means the part of a commodity facility where the commodities are transferred from the facility to a truck, railcar, barge, or ship.

Subp. 11. **Normal loading procedure.** "Normal loading procedure" means that part of a barge or ship loading operation where the spout and associated dust suppression systems are capable of distributing the commodity in the hold as needed without making modifications to the loading procedure, such as removing the dust suppressor, raising the spout, slowing the loading rate below the design capability of the spout, or attaching equipment at the end of the spout.

Subp. 12. **Rack dryer.** "Rack dryer" means equipment used to reduce the moisture content of grain in which the grain flows from the top to the bottom in a cascading flow around rows of baffles (racks).

Subp. 13. **Reasonably available control technology (RACT).** "Reasonably available control technology (RACT)" means the lowest emission limit that a

particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

Subp. 14. **Throughput.** "Throughput" means the number of tons of commodities received, plus the number of tons of commodities shipped, divided by two, determined on the basis of an average year. An average year is determined by averaging the actual receipts and shipments for the last three consecutive fiscal years. For facilities less than three years old, actual and anticipated receipts and shipments must be used.

Subp. 15. **Topping-off.** "Topping-off" means the placing of grain in the final three feet of void in a barge, nine feet in a ship, between the fore and aft center line of the hatch and the outboard side of the vessel. The depth is determined by vertical measurement along the outboard side of the vessel from the top of the hatch opening.

Subp. 16. **Trimming.** "Trimming" means the part of ship loading that requires the use of spoons, slingers, and other equipment attached to the loading spout to ensure that a ship is loaded to capacity.

Subp. 17. **Unloading station.** "Unloading station" means the part of a commodity facility where the commodities are transferred from a truck, railcar, barge, or ship to a receiving hopper.

Statutory Authority: *MS s 116.07 subd 1*

History: *8 SR 1675*

7005.2521 STANDARDS OF PERFORMANCE FOR DRY BULK AGRICULTURAL COMMODITY FACILITIES.

Subpart 1. **Owner or operator duties.** The owner or operator of a commodity facility shall:

A. clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT; and

B. maintain air pollution control equipment in proper operating condition and utilize the air pollution control systems as designed.

Subp. 2. **Federal requirements.** The owner, operator, or other person who conducts activities at a grain terminal elevator or grain storage elevator, of which construction, modification, or reconstruction commenced after August 3, 1978, shall meet the requirements of Code of Federal Regulations, title 40, part 60.300, subpart DD, (August 3, 1978) entitled "Standards of Performance for Grain Elevators."

Subp. 3. **Prohibited discharges.** A commodity facility that is not required to be controlled under subpart 2 must be controlled if the facility meets one of the descriptions listed in part 7005.2523 where the table indicates "control required." For a facility where control is required under this section, no owner, operator, or other person who conducts activities at the facility may allow:

A. a discharge of fugitive emissions that exhibit greater than five percent opacity from a truck unloading station, railcar unloading station, railcar loading station, or handling operation;

B. a discharge of fugitive emissions that exhibit greater than ten percent opacity from a truck loading station;

C. a discharge of fugitive emissions that exhibit greater than 20 percent opacity from a ship or barge loading or unloading station, except that during trimming or topping-off, when normal loading procedures cannot be used, no opacity standard applies; and

D. a discharge of particulate matter from control equipment that exceeds the limits set forth in part 7005.0520 or that exhibits greater than ten percent opacity, except that facilities constructed prior to January 1, 1984, with an

annual commodity throughput of more than 180,000 tons and located in an unincorporated area or in a city with a population of less than 7,500, outside the Minneapolis-Saint Paul Air Quality Control Region, is in compliance if the control equipment has a collection efficiency of not less than 85 percent by weight.

Subp. 4. **Capture systems and control equipment.** The owner or operator of a commodity facility not required to control emissions under subpart 2 or 3 is not required to install capture systems and control equipment but shall unload, handle, clean, dry, and load commodities to minimize fugitive emissions to a level consistent with RACT. If a capture system is used, the particulate matter must be conveyed through control equipment that has a collection efficiency of not less than 85 percent by weight.

Subp. 5. **Grain dryer specifications.** A grain dryer must meet the following design specifications:

A. the perforations of a column dryer screen must not exceed 3/32 inches in diameter; and

B. the emissions from a rack dryer must pass through a 50-mesh screen enclosure before discharge to the atmosphere.

Statutory Authority: *MS s 116.07 subd 1*

History: *8 SR 1675*

7005.2522 NUISANCE.

Notwithstanding any provisions in parts 7005.2520 to 7005.2523, no owner or operator of a dry bulk agricultural commodity facility may operate or maintain a facility that creates a public nuisance. If the director determines that operation or maintenance of a commodity facility creates a public nuisance, the director may require the owner or operator to take measures necessary to eliminate the nuisance.

Statutory Authority: *MS s 116.07 subd 1*

History: *8 SR 1675*

7005.2523 CONTROL REQUIREMENTS SCHEDULE.

Facility Description	Date Construction, Modification or Reconstruction Commenced	
	Prior to 1/1/84	After 1/1/84
Facility located in Minneapolis-Saint Paul Air Quality Control Region or located in a city with a population of 7,500 or more or with annual commodity throughput of more than 180,000 tons	Control required	Control required
Facility with annual commodity throughput of 120,000 to 180,000 tons and located in a city with a population of less than 7,500	No control required	Control required
Facility with annual	No control	No control

commodity throughput and location other than those described above	required	required

Statutory Authority: *MS s 116.07 subd 1*

History: *8 SR 1675*

EMISSION STANDARDS FOR BERYLLIUM

7005.2550 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2550 to 7005.2590, the following words shall have the meanings defined herein.

Subp. 2. **Beryllium.** "Beryllium" means the element beryllium. Where weights or concentrations are specified, such weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.

Subp. 3. **Beryllium alloy.** "Beryllium alloy" means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

Subp. 4. **Beryllium-containing waste.** "Beryllium-containing waste" means material contaminated with beryllium and/or beryllium compounds used or generated during any process or operation performed by a source subject to parts 7005.2550 to 7005.2590.

Subp. 5. **Beryllium facility.** "Beryllium facility" means an extraction plant, ceramic plant, foundry, incinerator, or propellant plant which processes beryllium ore, beryllium, beryllium oxide, beryllium alloys, or beryllium-containing wastes, or a machine shop which processes beryllium, beryllium oxides, or any alloy when such alloy contains more than five percent beryllium by weight.

Subp. 6. **Beryllium ore.** "Beryllium ore" means any naturally occurring material mined or gathered for its beryllium content.

Subp. 7. **Beryllium propellant.** "Beryllium propellant" means any propellant incorporating beryllium.

Subp. 8. **Ceramic plant.** "Ceramic plant" means a manufacturing plant producing ceramic items.

Subp. 9. **Extraction plant.** "Extraction plant" means a facility chemically processing beryllium ore to beryllium metal, alloy, or oxide, or performing any of the intermediate steps in these processes.

Subp. 10. **Foundry.** "Foundry" means a facility engaged in the melting or casting of beryllium metal or alloy.

Subp. 11. **Incinerator.** "Incinerator" means any furnace used in the process of burning waste for the primary purpose of reducing the volume of the waste by removing combustible matter.

Subp. 12. **Machine shop.** "Machine shop" means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electro-chemical machining, etching, or other similar operations.

Subp. 13. **Propellant.** "Propellant" means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

Subp. 14. **Propellant plant.** "Propellant plant" means any facility engaged in the mixing, casting, or machining of propellant.

Subp. 15. **Rocket motor test site.** "Rocket motor test site" means any building, structure, facility, or installation where the static test firing of a beryllium rocket motor and/or the disposal of beryllium propellant is conducted.

Statutory Authority: *MS s 116.07 subd 4*

7005.2560 EMISSION STANDARDS FOR BERYLLIUM.

Subpart 1. **Beryllium facilities.** No owner or operator of a beryllium facility

shall cause to be discharged into the atmosphere from such facility more than ten grams of beryllium per 24-hour period.

Subp. 2. **Burning of beryllium.** No person shall burn beryllium or beryllium-containing waste, except propellants, except in incinerators which comply with the emission standard in subpart 1.

Subp. 3. **Rocket motor test sites.** No owner or operator of a rocket motor test site shall cause to be discharged into the atmosphere from such site:

A. emissions which cause time-weighted atmospheric concentrations of beryllium to exceed 75 microgram minutes per cubic meter of air within the limits of ten to 60 minutes, accumulated during any two consecutive weeks, in any area in which an effect adverse to public health could occur;

B. more than two grams of beryllium per hour or more than ten grams of beryllium per 24-hour period from a closed tank used to collect the combustion products from the firing of beryllium propellants, if such a tank is used.

Statutory Authority: *MS s 116.07 subd 4*

7005.2570 EMISSION MONITORING.

Subpart 1. **Beryllium facilities.** The owner or operator of a beryllium facility shall install a continuous monitoring system to determine the concentration of beryllium in the ambient air. The continuous monitoring system shall be installed at air sampling sites which have been approved by the director and which are designed to detect the maximum concentrations of beryllium in the ambient air. The director may require changes in, or expansion of, any sampling network.

The owner or operator of a beryllium facility shall report the concentrations measured at all sampling sites to the director every 30 days by registered letter.

Subp. 2. **Rocket motor test sites.** The owner or operator of a rocket motor test site shall measure the concentration of beryllium in the ambient air during and after firing of a rocket motor and during and after disposal of a beryllium propellant. Prior to the firing or disposal the owner or operator shall obtain the approval of the director for the measuring technique which is proposed to be used. The technique shall be adequate to enable the director to determine whether the emissions are in compliance with the standard.

If combustion products from the rocket motor firing or propellant disposal are collected in a closed tank, emissions from the tank shall be continuously sampled during release of combustion products from the tank, in such a manner to enable the director to determine whether the emissions are in compliance with the standard.

All samples shall be analyzed and results shall be calculated within 30 days after samples are taken and before any subsequent rocket motor firing or propellant disposal at the given site. All results shall be reported to the director by a registered letter dispatched before the close of the next business day following determination of such results.

The owner or operator of a rocket motor test site shall notify the director in writing at least 30 days prior to a rocket motor firing or propellant disposal.

Statutory Authority: *MS s 116.07 subd 4*

7005.2580 PERFORMANCE TEST METHOD.

Unless another method is approved by the agency, any person required to submit performance test results for a beryllium facility or rocket motor test site shall use Method 103. Beryllium Screening Method, set forth in appendix B to Code of Federal Regulations, title 40, part 61, or Method 104, Reference Method for Determination of Beryllium Emissions from stationary sources set forth in appendix B to Code of Federal Regulations, title 40, part 61.

Statutory Authority: *MS s 116.07 subd 4*

7005.2590 PERFORMANCE TEST PROCEDURES.

Subpart 1. **Notice to director.** The director shall be notified in writing at least 30 days prior to an emission test.

Subp. 2. **Sampling.** Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in any 24-hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities, or other factors, the calculation of maximum 24-hour-period emissions shall be based on that combination of factors which is likely to occur during the subject period and which results in the maximum emissions. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until a new emission level has been estimated by calculation and the results reported to the director.

Subp. 3. **Analysis.** All samples shall be analyzed and beryllium emissions shall be determined within 30 days after the source test. All determinations shall be reported to the director by a registered letter dispatched before the close of the next business day following such determination.

Statutory Authority: *MS s 116.07 subd 4*

EMISSION STANDARDS FOR MERCURY

7005.2650 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2650 to 7005.2690, the following words shall have the meanings defined herein.

Subp. 2. **Cell room.** "Cell room" means a structure(s) housing one or more mercury electrolytic chlor-alkali cells.

Subp. 3. **Condenser stack gases.** "Condenser stack gases" means the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury metal from mercury ore.

Subp. 4. **Denuder.** "Denuder" means a horizontal or vertical container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.

Subp. 5. **End box.** "End box" means a container(s) located on one or both ends of a mercury chlor-alkali electrolyzer which serves as a connection between the electrolyzer and denuder for rich and stripped amalgam.

Subp. 6. **End box ventilation system.** "End box ventilation system" means a ventilation system which collects mercury emissions from the end boxes, the mercury pump sumps, and their water collection systems.

Subp. 7. **Hydrogen gas stream.** "Hydrogen gas stream" means a hydrogen stream formed in the chlor-alkali cell denuder.

Subp. 8. **Mercury.** "Mercury" means the element mercury, excluding any associated elements, and includes mercury in particulates, vapors, aerosols, and compounds.

Subp. 9. **Mercury chlor-alkali cell.** "Mercury chlor-alkali cell" means a device which is basically composed of an electrolyzer section and a denuder (decomposer) section and utilizes mercury to produce chlorine gas, hydrogen gas, and alkali metal hydroxide.

Subp. 10. **Mercury chlor-alkali electrolyzer.** "Mercury chlor-alkali electrolyzer" means an electrolytic device which is part of a mercury chlor-alkali cell and utilizes a flowing mercury cathode to produce chlorine gas and alkali metal amalgam.

Subp. 11. **Mercury chlor-alkali plant.** "Mercury chlor-alkali plant" means an emission facility which uses mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide.

Subp. 12. **Mercury ore.** "Mercury ore" means a mineral mined specifically for its mercury content.

Subp. 13. **Mercury ore processing facility.** "Mercury ore processing facility" means a facility processing mercury ore to obtain mercury.

Subp. 14. **Sludge.** "Sludge" means sludge produced by a treatment plant that processes municipal or industrial wastewaters.

Subp. 15. **Sludge dryer.** "Sludge dryer" means a device used to reduce the moisture content of sludge by heating to temperatures above 65 degrees Celsius (150 degrees Fahrenheit) with combustion gases.

Subp. 16. **Sludge incineration and drying plant.** "Sludge incineration and drying plant" means an emission facility which incinerates or drys wastewater treatment plant sludge.

Statutory Authority: *MS s 116.07 subd 4*

7005.2660 EMISSION STANDARDS FOR MERCURY.

Subpart 1. **Mercury ore processing facility.** No owner or operator of a mercury ore processing facility shall cause to be discharged into the atmosphere from such facility more than 2,300 grams of mercury per 24-hour period.

Subp. 2. **Mercury chlor-alkali plant.** No owner or operator of a mercury chlor-alkali plant shall cause to be discharged into the atmosphere from such plant more than 2,300 grams of mercury per 24-hour period.

Subp. 3. **Sludge incineration and drying plants.** No owner or operator of a sludge incineration and drying plant shall cause to be discharged into the atmosphere from such plant more than 3,200 grams of mercury per 24-hour period.

Statutory Authority: *MS s 116.07 subd 4*

7005.2670 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any person required to submit performance test results for a mercury ore processing facility, a mercury chlor-alkali plant, or a sludge incineration and drying plant shall use Method 101, Reference Method for Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources (Air Streams), set forth in appendix B to Code of Federal Regulations, title 40, part 61, or Method 102, Reference Method for Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources (Hydrogen Streams), set forth in appendix B to Code of Federal Regulations, title 40, part 61, whichever is applicable.

Statutory Authority: *MS s 116.07 subd 4*

7005.2680 PERFORMANCE TEST PROCEDURES.

Subpart 1. **Notice to director.** The director shall be notified in writing at least 30 days prior to an emission test.

Subp. 2. **Sampling.** Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission level has been estimated by calculation and the results reported to the director.

Subp. 3. **Analysis.** All samples shall be analyzed, and mercury emissions shall be determined within 30 days after the source test. Each determination shall be reported to the director by a registered letter dispatched before the close of the next business day following such determination.

Subp. 4. **Cell room emissions.** Cell room emissions at a mercury chlor-alkali plant shall be determined by passing all cell room air in forced gas streams through stacks suitable for testing.

Subp. 5. **Substitute for cell room performance tests.** In lieu of performance

tests for cell room emissions at a mercury chlor-alkali plant, the owner or operator may elect to carry out design, maintenance, and housekeeping practices approved by the director and assume that emissions from the cell room ventilation system contain 1,300 grams of mercury per day.

Subp. 6. **Substitute for sludge incineration and drying plant performance tests.** In lieu of performance tests for sludge incineration and drying plants, the owner or operator of such a plant may elect to carry out a sludge sampling program according to Method 105, Method for Determination of Mercury in Wastewater Treatment Plant Sewage Sludges, set forth in appendix B of Code of Federal Regulations, title 40, part 61, and according to the procedures set forth below:

A. The director shall be notified in writing at least 30 days prior to the sludge sampling test.

B. The sludge shall be sampled after dewatering and before incineration or drying at a location that provides a representative sample of the sludge that is charged to the incinerator or dryer. Eight consecutive grab samples shall be obtained at intervals of between 45 and 60 minutes and thoroughly mixed into one sample. Each of the eight grab samples shall have a volume of at least 200 ml but shall not exceed 400 ml. A total of three composite samples shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples shall not be exposed to any condition that may result in mercury contamination or loss.

C. The maximum 24-hour period sludge incineration or drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the incinerator or dryer with an accuracy of plus or minus five percent over its operating range. Other methods of measuring sludge mass charging rates, approved by the director, may be used.

D. The handling, preparation, and analysis of sludge samples shall be accomplished according to method 105.

E. The mercury emissions shall be determined by use of the following equation:

$E_{Hg} = 1 \times 10^{-3} c Q$

where E_{Hg} = mercury emissions, g/day;

c = mercury concentration of sludge on a dry solids basis, ug/g (ppm);

Q = sludge charging rate, kg/day.

F. No changes in the operation of a plant shall be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emission level has been estimated by calculation and the results reported to the director.

G. All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected. Each determination shall be reported to the director by a registered letter dispatched before the close of the next business day following such determination.

Statutory Authority: *MS s 116.07 subd 4*

7005.2690 EMISSION MONITORING.

The owner or operator of a sludge incineration and drying plant for which mercury emissions exceed 1,600 g/day, demonstrated either by performance tests or sludge sampling shall monitor mercury emissions at intervals of at least once per year using method 105 and the procedures under part 7005.2680, subpart 6.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR DIRECT HEATING FOSSIL FUEL-BURNING EQUIPMENT

7005.2750 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2750 to 7005.2790, the following words shall have the meanings defined herein.

Subp. 2. **Actual heat input.** "Actual heat input" means the number of Btu per hour (cal/hr) determined by multiplying the gross heating value of the fuel by the rate of fuel burned.

Subp. 3. **Direct heating equipment.** "Direct heating equipment" means a furnace, kiln, dryer, or other combustion equipment used in the burning of a fossil fuel for the purpose of processing a material where the products of combustion have direct contact with the heated material.

Subp. 4. **Fossil fuel.** "Fossil fuel" means natural gas, petroleum, coal, wood, peat, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

Subp. 5. **Gross heating value.** "Gross heating value" means the gross calorific value (cal/g or Btu/lb) of the fuel combusted as determined by A.S.T.M. test methods D 2015-66(72) for solid fuels; D 1826-64(70) for gaseous fuels, and D 240-64(73) for liquid fuels.

Subp. 6. **Indirect heating equipment.** "Indirect heating equipment" means a furnace, a boiler or other unit of combustion equipment used in the process of burning fossil fuel for the purpose of producing steam, hot water, hot air, or other hot liquid, gas, or solid, where the products of combustion do not have direct contact with the heated medium.

Subp. 7. **Rated heat input.** "Rated heat input" means the number of Btu per hour (cal/hr) which the manufacturer has determined to be the continuous rated capability of the direct heating equipment.

Statutory Authority: *MS s 116.07 subd 4*

7005.2760 DETERMINATION OF APPLICABLE STANDARDS OF PERFORMANCE.

Parts 7005.2750 to 7005.2790 shall apply to direct heating equipment for which a standard of performance has not been promulgated in a specific rule.

The applicable standard of performance for sulfur dioxide shall be determined by using the total rated heat input of all indirect heating equipment and all direct heating equipment of one owner or operator at that particular location.

When different fossil fuels are burned simultaneously in any combination, the applicable sulfur dioxide (SO_2) standard shall be determined by proration using the following formula:

$$w = \frac{y(a) + z(b)}{x + y + z}$$

where:

w is the maximum allowable emissions of sulfur dioxide gases in lbs/per million Btu (g/million cal);

x is the percentage of total heat input derived from gaseous fossil fuel;

y is the percentage of total heat input derived from liquid fossil fuel;

z is the percentage of total heat input derived from solid fossil fuel;

a is the allowable SO_2 standard for liquid fossil fuels expressed in lbs per million Btu (g/million cal); and

b is the allowable SO_2 standard for solid fossil fuels expressed in lbs per million Btu (g/million cal).

Statutory Authority: *MS s 116.07 subd 4*

7005.2770 STANDARDS OF PERFORMANCE FOR FOSSIL FUEL-BURNING DIRECT HEATING EQUIPMENT.

Subpart 1. **Particulate limitations.** Particulate limitations:

A. No owner or operator of any direct heating equipment shall cause to be discharged into the atmosphere from the direct heating equipment any gases which:

(1) contain particulate matter in excess of the limits allowed by parts 7005.0450 to 7005.0520; or

(2) exhibit greater than 20 percent opacity, except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.

B. No owner or operator of an existing gray iron cupola with a melting capacity of less than 1-1/2 per hour shall allow emissions which exceed 0.3 grain per standard cubic foot, dry basis, and the owner or operator shall incinerate all gases, vapors, and gas entrained effluents from such cupolas at a temperature of not less than 1,200 degrees Fahrenheit for a period of not less than 0.3 seconds. The owner or operator of any other gray iron cupola shall meet the requirements of item A.

Subp. 2. **Sulfur oxide limitations.** Sulfur oxide limitations:

A. Within Minneapolis-Saint Paul Air Quality Control Region. No owner or operator of direct heating equipment located within the Minneapolis-Saint Paul Air Quality Control Region shall cause to be discharged into the atmosphere from such equipment any gases which contain sulfur dioxide:

(1) in excess of three pounds per million Btu heat input if a solid fossil fuel is burned or 1.6 pounds per million Btu heat input if a liquid fossil fuel is burned, if the total rated heat input of all indirect and direct heating equipment of the owner or operator at that particular location exceeds 250 million Btu per hour;

(2) in excess of four pounds per million Btu heat input if a solid fossil fuel is burned or two pounds per million Btu heat input if a liquid fossil fuel is burned, if the total rated heat input of all indirect and direct heating equipment of the owner or operator at that particular location is equal to or less than 2.50 million Btu per hour.

B. Outside Minneapolis-Saint Paul Air Quality Control Region. No owner or operator of direct heating equipment located outside the Minneapolis-Saint Paul Air Quality Control Region shall cause to be discharged into the atmosphere from such equipment any gases which contain sulfur dioxide in excess of four pounds per million Btu heat input if a solid fossil fuel is burned or two pounds per million Btu heat input if a liquid fossil fuel is burned, if the total rated heat input of all indirect and direct heating equipment of the owner or operator at that particular location is greater than 250 million Btu per hour.

Statutory Authority: *MS s 116.07 subd 4*

7005.2780 PERFORMANCE TEST METHODS.

Unless another method is approved by the agency, any person required to submit performance tests for direct heating equipment shall utilize the following test methods:

A. Method 1 for selection of sampling site and sample traverses;

B. Method 3 for gas analysis;

C. Method 5 for concentration of particulate matter and the associated moisture content;

D. Method 6 for concentration of SO_2; and

E. Method 9 for visual determination of opacity.

Statutory Authority: *MS s 116.07 subd 4*

7005.2790 PERFORMANCE TEST PROCEDURES.

Subpart 1. **Sampling site.** The sampling site, as selected by Method 1, shall be the same for each pollutant during a performance test.

Subp. 2. **Sampling time for Method 5.** For Method 5, the sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors may be approved by the agency. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature between 120 degrees Celsius and 160 degrees Celsius (250 degrees Fahrenheit and 320 degrees Fahrenheit).

Subp. 3. **Sampling point for Method 6.** For Method 6, the sampling point in the duct shall be at the center of the cross section or at a point no closer to the walls than one meter (3.28 ft.). The sample shall be extracted at a rate proportional to the gas velocity at the sampling point.

Subp. 4. **Sampling time for Method 6.** For Method 6, the minimum sampling time shall be 20 minutes and the minimum sampling volume 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two samples shall constitute one run. Samples shall be taken at approximately 30-minute intervals.

Subp. 5. **Sulfur dioxide emissions.** For each performance test for sulfur dioxide emissions, the emissions expressed in g/million cal (lb/million Btu) shall be determined by the following procedure if the actual heat input is used:

$$E = CF \left(\frac{20.90}{20.9 - \%O_2}\right)$$

where:

A. E = pollutant emission, g/million cal (lb/million Btu);

B. C = pollutant concentration, g/dscm (lb/dscf);

C. $\%O_2$ = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated sampling procedures of Method 3 or with the Orsat analyzer. The sample shall be obtained at approximately the same point in the duct as used to obtain the samples for Method 6;

D. F = factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted. Values of F are given as follows:

(1) For anthracitic coal according to A.S.T.M. D388-66, F = 0.01139 dscm/10^4 cal (101.4 dscf/10^4 Btu);

(2) For subbituminous and bituminous coal according to A.S.T.M. D388-66, F = 0.01103 dscm/10^4 cal (98.2 dscf/10^4 Btu);

(3) For liquid fossil fuels including crude, residual, and distillate oils, F = 0.01036 dscm/10^4 cal (92.2 dscf/10^4 Btu);

(4) For gaseous fossil fuels including natural gas, propane, and butane, F = 0.00982 dscm/10^4 cal (87.4 dscf/10^4 BTU).

E. An owner or operator may use the following equation to determine an F factor (dscf/10^4 Btu) in lieu of the F factors specified by item D or E:

$$F = \frac{10^6\ 3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%)}{GVH}$$

where:

(1) H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined by ultimate analysis of the fuel fired, dry basis, using A.S.T.M. methods D3178-74 or D3176 (solid fuels) or D240-64(73) (liquid fuels) or computed from results using A.S.T.M. method D1137-53(70), D1945-64(73) or D1946-67(72) (gaseous fuels) as applicable; and

(2) GHV is the gross heating value.

F. When combinations of fuels are fired, the F factors determined by item D or E shall be prorated in accordance with the following formula:

$$F = \frac{xF_1 + yF_2 + zF_3}{100}$$

where:

x = the percentage of total heat input derived from gaseous fossil fuel;

y = the percentage of total heat input derived from liquid fossil fuel;

z = the percentage of total heat input derived from solid fossil fuel;

F_1 = the value of F for gaseous fossil fuels according to item D or E;

F_2 = the value of F for liquid fossil fuels according to item D or E;

F_3 = the value of F for solid fossil fuels according to item D or E.

G. When combinations of fossil fuels are fired, the actual heat input, expressed in cal/hr (Btu/hr), shall be determined during each testing period. The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the direct heating system.

Statutory Authority: *MS s 116.07 subd 4*

STANDARDS OF PERFORMANCE FOR COAL HANDLING FACILITIES

7005.2850 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2850 to 7005.2930, the following words shall have the meanings defined herein.

Subp. 2. **Coal.** "Coal" means any solid fossil fuel described as anthracite, bituminous, subbituminous, lignite, or coke (as derived from coal).

Subp. 3. **Coal handling.** "Coal handling" means operations including, but not limited to, operations such as dumping, loading, unloading, storing, reclaiming, transferring, and conveying.

Subp. 4. **Coal handling facility.** "Coal handling facility" means a facility where coal is handled such as coal transshipment terminals, electric generating plants, boiler plants, or steam plants.

Subp. 5. **Coal throughput.** "Coal throughput" means the number of tons of coal received plus the number of tons of coal shipped by an owner or operator of a coal transshipment facility in any one calendar year. In the case of facilities where coal is consumed at the same facility where received, such as electric generating plants, boiler plants, or steam plants, coal throughput means the number of tons of coal received at the facility.

Subp. 6. **Dust suppression methods.** "Dust suppression methods" mean dust control equipment or measures including, but not limited to, hoppers, hoods, screens, enclosures, wetting or chemical agents, foam agents, surfactants, precleaning treatment, utilizing induced draft and air pollution control equipment, watering, and other equivalent methods approved by the director.

Subp. 7. **Hauler.** "Hauler" means any vehicle engaged in reclaiming, moving, or dumping coal within a coal handling facility.

Subp. 8. **Minimize.** "Minimize" means, with respect to the control of fugitive emissions, to reduce such emissions to a level consistent with RACT.

Subp. 9. **Pneumatic coal-cleaning equipment.** "Pneumatic coal-cleaning equipment" means any equipment which classifies coal by size or separates coal from refuse by application of air stream(s).

Subp. 10. **Reasonably available control technology (RACT).** "Reasonably available control technology (RACT)" is the lowest emission limit that a particu-

lar source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

Subp. 11. **Thermal dryer.** "Thermal dryer" means any device in which the moisture content of coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere.

Statutory Authority: *MS s 116.07 subd 4*

7005.2860 STANDARDS OF PERFORMANCE FOR CERTAIN COAL HANDLING FACILITIES.

The owner or operator of a new or existing coal handling facility which is located within the Minneapolis-Saint Paul Air Quality Control Region or within the boundaries of the city of Duluth shall perform the following abatement measures unless otherwise exempt by portions of these parts:

A. Access areas, roads, parking facilities.

(1) Install asphalt or concrete surfaces or chemical agents on all active truck haul roads of the coal handling facility when the coal throughput by truck is 200,000 tons or greater. All paved roads and areas shall be cleaned to minimize the discharge to the atmosphere of fugitive particulate emissions. Such cleaning shall be accomplished in a manner which minimizes resuspension of particulate matter. Access areas surrounding coal stockpiles and parking facilities which are located within a coal handling facility shall be treated with water, oils, or chemical agents.

(2) No person shall cause or permit the use of access areas surrounding coal stockpiles and use of all active truck haul roads and parking facilities which are located within a coal handling facility whose coal throughput by truck is less than 200,000 tons unless such areas and roads are treated with water, oils, or chemical agents.

B. Coal loading stations. Control fugitive particulate emissions from the loading of trucks, haulers, and railcars by dust suppression methods so that emissions from such sources are minimized.

C. Truck and hauler unloading stations. Control fugitive particulate emissions from the unloading of trucks or haulers by dust suppression methods so that emissions from such sources are minimized.

D. Barge or vessel loading stations.

When the amount of coal loaded into barges or vessels at a given facility is 200,000 tons per year or greater, conveyor systems shall utilize loadout spouts with remote control capability for movement sideways, up and down, and telescoping so as to decrease as much as practical the vertical free fall of coal at all times during the loadout operation. Choke feeding devices, flood loading, or other equivalent equipment or methods may be installed as alternates on conveyor systems to control fugitive emissions. Crane and shovels shall be operated so as to minimize the vertical free fall of coal.

When the amount of coal loaded into barges or vessels at a given facility is less than 200,000 tons per year, control fugitive particulate emissions by dust suppression methods so that emissions from such sources are minimized.

E. Barge or vessel unloading station. Cranes, shovels, and conveyors shall be operated in a manner which decreases as much as practical the vertical free fall of coal. Control fugitive particulate emissions during unloading so that fugitive particulate emissions are minimized.

F. Stockpiles, stockpile construction, and reclaiming.

(1) Control fugitive particulate emissions by dust suppression methods on such operations so that fugitive particulate emissions are minimized.

(2) In the alternative, use an underground bottom feed (plow) of coal to an underground conveyor system provided the exhaust gases from the

enclosed spaces do not contain particulate matter in excess of 0.020 grains per dry standard cubic foot (gr/dscf).

G. Enclosed coal handling facilities or emission sources not specifically covered by any other provision in these parts. If exhaust gases from any enclosed coal handling facility exceed 20 percent opacity, then the owner or operator of such facility shall select and implement one of the following further controls:

(1) install exhaust air system and control exhaust gases so that particulate emissions in such gases do not exceed 0.020 gr/dscf;

(2) control exhaust gases using dust suppression methods so that particulate emissions do not exhibit greater than 20 percent opacity.

H. Railcar unloading. When the amount of coal unloaded by rail is 200,000 tons per year or greater, unload railcars only within a permanent building or structure. If exhaust gases from such building or structure exceed 20 percent opacity, then the owner or operator of such facility shall select and implement one of the following further controls: install an exhaust air system and control exhaust gases so that particulate emissions in such gases do not exceed 0.020 gr/dscf; or control exhaust gases using dust suppression methods so that particulate emissions do not exhibit greater than 20 percent opacity.

When the amount of coal unloaded by rail is less than 200,000 tons per year control fugitive particulate emissions during unloading so that fugitive particulate emissions are minimized.

I. Operating practices. Clean up all coal spilled on roads or access areas as soon as practicable using methods that minimize the amount of dust suspended.

Maintain air pollution control equipment in proper operating condition and utilize air pollution control systems as designed.

Statutory Authority: *MS s 116.07 subd 4*

7005.2870 STANDARDS OF PERFORMANCE FOR EXISTING OUTSTATE COAL HANDLING FACILITIES.

The owner or operator of an existing coal handling facility which is located outside the Minneapolis-Saint Paul Air Quality Control Region and outside the boundaries of the city of Duluth shall comply with the requirements of existing rules (part 7005.0550) for the control of fugitive particulate emissions.

Statutory Authority: *MS s 116.07 subd 4*

7005.2880 STANDARDS OF PERFORMANCE FOR PNEUMATIC COAL-CLEANING EQUIPMENT AND THERMAL DRYERS AT ANY COAL HANDLING FACILITY.

Subpart 1. **Pneumatic coal-cleaning equipment.** The owner or operator of a coal handling facility shall not cause to be discharged into the atmosphere from any pneumatic coal-cleaning equipment any gases which:

A. contain particulate matter in excess of 0.040 g/dscm (0.018 gr/dscf); or

B. exhibit ten percent opacity or greater.

Subp. 2. **Thermal dryers.** The owner or operator of a coal handling facility shall not cause to be discharged into the atmosphere from any thermal dryer any gases which:

A. contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf); or

B. exhibit 20 percent opacity or greater.

Subp. 3. **Installation.** The owner or operator shall install pneumatic coal-cleaning equipment and thermal dryers in a manner that performance tests for particulate matter can be run in accordance with applicable procedures and methods set forth in parts 7005.2910 to 7005.2920.

Subp. 4. **Monitoring.** The owner or operator of any coal handling facility that contains a thermal dryer shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

A. A monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device shall be certified by the manufacturer to be accurate within three degrees Fahrenheit.

B. In the event venturi scrubber emission control equipment is utilized:

(1) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device shall be certified by the manufacturer to be accurate within one inch water gauge.

(2) A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device shall be certified by the manufacturer to be accurate within five percent of design water supply pressure. The pressure sensor or tap shall be located close to the water discharge point.

C. The owner or operator of a coal handling facility who is required to maintain monitoring devices shall recalibrate each device annually in accordance with the manufacturer's written requirements for checking the operation and calibration of the device.

Statutory Authority: *MS s 116.07 subd 4*

7005.2890 EXEMPTION.

During freezing temperatures, owners or operators shall not be required to apply water or dust suppressants.

Statutory Authority: *MS s 116.07 subd 4*

7005.2900 CESSATION OF OPERATIONS.

The owner or operator of a coal handling facility shall not conduct any nonessential coal handling operations that are not shielded from the wind or enclosed in a building when steady wind speeds exceed 30 miles per hour as determined at the nearest official station of the United States Weather Bureau or by wind speed instruments on or adjacent to the site.

Statutory Authority: *MS s 116.07 subd 4*

7005.2910 PERFORMANCE TEST METHOD.

Unless another equivalent method is approved by the director, any person required to conduct performance tests for coal handling facilities shall utilize the following test methods, as referenced in Code of Federal Regulations, title 40, part 60, appendix A as in force on the effective date of these parts:

A. Method 1 for sample and velocity traverses;

B. Method 5 for the concentration of particulate material and moisture content;

C. Method 9 for the visual determination of the opacity of emission from stationary sources.

Statutory Authority: *MS s 116.07 subd 4*

7005.2920 PERFORMANCE TEST PROCEDURES.

For Method 5, the sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, shall be approved by the director. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature between 100 degrees Celsius and 120 degrees Celsius (212 degrees Fahrenheit

and 250 degrees Fahrenheit). Sampling shall not be started until at least 30 minutes after start up and shall be terminated before shutdown procedures commence. The owner or operator shall eliminate cyclonic flow during performance tests.

Statutory Authority: *MS s 116.07 subd 4*

7005.2930 DUST SUPPRESSANT AGENTS.

Nothing in these parts shall authorize the use of surface hardening agents, wetting or chemical agents, foam agents, and oils that may cause ground water or surface water contamination in violation of any applicable water pollution law.

Statutory Authority: *MS s 116.07 subd 4*

AIR POLLUTION EPISODES

7005.2950 AIR POLLUTION EPISODES.

Parts 7005.2950 to 7005.3006 apply to any owner or operator of any emission facility having allowable emissions of any air pollutant of 250 or more tons per year located within or having air pollutant emissions affecting any area within the state of Minnesota for which an air pollution alert, air pollution warning, air pollution emergency, or air pollution significant harm episode has been declared by the director.

Statutory Authority: *MS s 116.07 subd 4*

7005.2960 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7005.2950 to 7005.3006, the following words shall have the meaning defined herein.

Subp. 2. **Air pollutant.** "Air pollutant" means particulate matter, sulfur dioxide, nitrogen oxides, ozone, carbon monoxide, or nonmethane hydrocarbons.

Subp. 3. **Alert level.** "Alert level" means the concentration of pollutants, as specified in part 7005.2970, at which first stage control actions are to be taken.

Subp. 4. **Allowable emission.** "Allowable emission" means the emission rate calculated using the maximum rated capacity of the emission facility, unless the emission facility is subject to enforceable permit conditions which limit the operating rate or hours of operation or both, and the applicable standard of performance set forth in agency rules or the standard set forth in the permit, whichever is more stringent.

Subp. 5. **Declaration.** "Declaration" means the formal public notification of an episode made by the director.

Subp. 6. **Director.** "Director" means the executive director of the Minnesota Pollution Control Agency or the director's designee.

Subp. 7. **Emergency level.** "Emergency level" means that concentration of pollutants, as specified in part 7005.2970, at which third stage control actions are to be taken.

Subp. 8. **Episode.** "Episode" means that period of time during which ambient air concentrations of air pollutants equal or exceed the alert level and meteorological conditions are such that the air pollutant concentrations can be expected to persist or to increase in the absence of control actions.

Subp. 9. **Significant harm level.** "Significant harm level" means that concentration of pollutants, as specified in part 7005.2970, at which fourth stage control actions are to be taken.

Subp. 10. **Warning level.** "Warning level" means that concentration of pollutants, as specified in part 7005.2970, at which second stage control actions are to be taken.

Statutory Authority: *MS s 116.07 subd 4*

7005.2970 EPISODE LEVELS.

The level at which the director shall declare an air pollutant alert, warning, emergency, or significant harm episode shall be determined by table 1 in part 7005.3001.

Statutory Authority: *MS s 116.07 subd 4*

7005.2980 EPISODE DECLARATION.

Subpart 1. **Alert.** An air pollution alert shall be declared by the director when the director finds that the concentration of any air pollutant has reached the alert level at any monitoring site and meteorological conditions are such that the air pollutant concentration can be expected to remain at, or exceed, the alert level for 12 or more hours or, in the case of ozone, to recur the following day at the same or higher levels unless control actions are taken.

Subp. 2. **Warning.** An air pollution warning shall be declared by the director when the director finds that the concentration of any air pollutant has reached the warning level at any monitoring site and meteorological conditions are such that the air pollutant concentration can be expected to remain at, or exceed, the warning level for 12 or more hours or, in the case of ozone, to recur the following day at the same or higher levels unless control actions are taken. An air pollution warning shall also be declared by the director when the director finds that the alert level concentrations for any air pollutant have persisted in the area for 48 hours and are expected to continue for the subsequent 12 hours.

Subp. 3. **Emergency.** An air pollution emergency shall be declared by the director when the concentration of any air pollutant has reached the emergency level at any monitoring site and meteorological conditions are such that the air pollutant concentration can be expected to remain at, or exceed, the emergency level for 12 or more hours or, in the case of ozone, to recur the following day at the same or higher levels unless control actions are taken. An air pollution emergency shall also be declared by the director when the director finds that the warning level concentrations for any air pollutant have persisted in the area for 48 hours and are expected to continue for the subsequent 12 hours.

Subp. 4. **Significant harm episode.** An air pollution significant harm episode shall be declared by the director when the concentration of any air pollutant has reached the significant harm level at any monitoring site and meteorological conditions are such that the air pollutant concentration can be expected to remain at, or exceed, the significant harm level for 12 or more hours or, in the case of ozone, to recur the following day at the same or higher levels unless control actions are taken.

Subp. 5. **Geographical area.** The geographical area subject to episode levels of any air pollutant shall be delineated to the extent feasible and shall be identified in the director's declaration.

Subp. 6. **End of episode.** The director shall terminate the episode by declaration when:

A. the measured air pollutant concentrations no longer satisfy the criteria specified in part 7005.2970; and

B. the meteorological conditions indicate that there will not be a recurrence of episode levels of air pollutants within 24 hours of control actions are reduced or eliminated.

Statutory Authority: *MS s 116.07 subd 4*

7005.2990 CONTROL ACTIONS.

Subpart 1. **Compliance required.** Notwithstanding the provisions of other rules or of any installation permit, operating permit, stipulation agreement, variances, or order of the agency, all persons shall, upon notification by the director or the director's designee, comply with episode control directives issued by the director.

Subp. 2. **Control directive.** Control directives issued to any owner or operator of an emission facility shall be based on the emission reduction plan submitted to the director pursuant to subpart 3; provided, however, that in the event that no emission reduction plan has been approved for such facility, the episode control directives shall be based upon the emission reduction objectives set forth at subpart 4.

Subp. 3. **Episode emission reduction plan.** The owner or operator of each emission facility located within the state having allowable air pollutant emissions of at least 250 tons per year shall within 90 days of the effective date of these parts submit to the director an episode emission reduction plan to be implemented at the facility in the event of a declaration by the director of an air pollution episode. The plan shall be consistent with the emission reduction objectives set forth in subpart 4 and shall designate at least two individuals to be notified in the event of the declaration of an air pollution episode. The plan shall be subject to the approval of the director. If the director finds that the plan is inconsistent with such emission reduction objectives the plan shall be returned to the owner or operator along with a written statement of the reason(s) for disapproval. The owner or operator shall correct the deficiency within 30 days of notification of disapproval and shall resubmit the plan to the director.

Subp. 4. **Emission reduction objectives.** For the purpose of these parts, emission reduction objectives shall be as indicated in tables 2 through 6 in parts 7005.3002 to 7005.3006. In the event of episode levels of both particulate matter and sulfur dioxide the director shall direct coal fired electric power generating facilities which pollutant is to be reduced at each facility.

Subp. 5. **Right to enter.** During the time that an air pollution episode declaration is in effect and has not been terminated, the owner or operator of any emission facility who has been directed to implement any portion of the facility's emission reduction plan shall allow the agency, or any authorized employee or agent of the agency, when authorized by law and upon the presentation of proper credentials to enter upon the property of the owner or operator for the purpose of obtaining information or examining records or conducting surveys or investigations pertaining to the operation of the emission facilities and the control equipment. The owner or operator shall make available on the premises to such agency employee a copy of the episode emission reduction plan for the emission facility and shall, upon request of the agency employee, demonstrate that the control directives issued to the owner or operator are being implemented.

Statutory Authority: *MS s 116.07 subd 4*

7005.3000 EMERGENCY POWERS.

Nothing in these parts shall be interpreted to preempt the agency's emergency powers as provided in Minnesota Statutes, section 116.11 or to preclude appropriate actions from being taken by the agency to protect the public health.

Statutory Authority: *MS s 116.07 subd 4*

7005.3001 TABLE 1.

	Alert	Warning	Emergency	Significant Harm
SO_2 24 hr. avg.	300 ppb 800 $\mu g/m^3$	600 ppb 1600 $\mu g/m^3$	800 ppb 2100 $\mu g/m^3$	1000 ppb 2620 $\mu g/m^3$
Part. 24 hr. avg.	375 $\mu g/m^3$	625 $\mu g/m^3$	875 $\mu g/m^3$	1000 $\mu g/m^3$
CO 8 hr. avg.	15 ppb 17 mg/m^3	30 ppb 34 mg/m^3	40 ppb 46 mg/m^3	50 ppb 57.5 mg/m^3

	Alert	Warning	Emergency	Significant Harm
NO_2 24 hr. avg.	150 ppb 282 $\mu g/m^3$	300 ppb 565 $\mu g/m^3$	400 ppb 750 $\mu g/m^3$	500 ppb 938 $\mu g/m^3$
NO_2 1 hr. avg.	600 ppb 1130 $\mu g/m^3$	1200 ppb 2260 $\mu g/m^3$	1600 ppb 3000 $\mu g/m^3$	2000 ppb 3750 $\mu g/m^3$
Ozone 1 hr. avg.	200 ppb 400 $\mu g/m^3$	400 ppb 800 $\mu g/m^3$	500 ppb 1000 $\mu g/m^3$	600 ppb 1200 $\mu g/m^3$
SO_2 x Part. $\mu g/m^3$ x $\mu g/m^3$ 24 hr. x 24 hr.	65×10^3	261×10^3	393×10^3	490×10^3

Statutory Authority: *MS s.116.07 subd 4*

7005.3002 TABLE 2: EMISSION REDUCTION OBJECTIVES FOR PARTICULATE MATTER.

EMISSION FACILITY	AIR POLLUTION ALERT	AIR POLLUTION WARNING	AIR POLLUTION EMERGENCY
1. Coal or oil-fired electric power generating facilities.	a. Substantial reduction by utilization of fuels having lowest available ash content.	a. Maximum reduction by utilization of fuels having lowest available ash content.	a. Maximum reduction by utilization of fuels having lowest available ash content.
	b. Maximum utilization of midday (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.	b. Maximum utilization of midday (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.	b. Maximum utilization of midday (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.
	c. Substantial reduction by diverting electric power generation to facilities outside of Alert Area.	c. Maximum reduction by diverting electric power generation to facilities outside of Warning Area.	c. Maximum reduction by diverting electric power generation to facilities outside of Emergency Area.
2. Coal or oil-fired process steam generating facilities.	a. Substantial reduction by utilization of fuels having lowest available ash content.	a. Maximum reduction by utilization of fuels having lowest available ash content.	a. Maximum reduction by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage.
	b. Maximum utilization of midday (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.	b. Maximum utilization of midday (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.	b. Maximum utilization of midday (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.
	c. Reduction of steam load demands consistent with continuing plant operation.	c. Reduction of steam load demands consistent with continuing plant operations.	c. Taking the action called for in the emergency plan.
		d. Making ready for use a plan of action to be taken if an emergency develops.	

3. A—Manufacturing, processing, and mining industries. AND B—Other persons required by this rule to prepare standby plans.	a. Substantial reduction of air contaminants from manufacturing operations by curtailing, postponing, or deferring production and allied operations.	a. Maximum reduction of air contaminants from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.	a. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.
	b. Maximum reduction by deferring trade waste disposal operations which emit particles.	b. Maximum reduction by deferring trade waste disposal operations which emit particles.	b. Elimination of air contaminants from trade waste disposal processes which emits particles.
	c. Reduction of particulate producing heat load demands for processing consistent with continuing plant operations.	c. Reduction of particulate producing heat load demands for processing consistent with continuing plant operations.	c. Maximum reduction of particulate producing heat load demands for processing.
4. Refuse disposal operations.	a. Maximum reduction by prevention of open burning.	a. Maximum reduction by prevention of open burning.	a. Maximum reduction by prevention of open burning.
	b. Substantial reduction by limiting burning of refuse in incinerators to the hours between 12:00 noon and 4:00 p.m.	b. Complete elimination of the use of incinerators.	b. Complete elimination of the use of incinerators.

7005.3003 TABLE 3: EMISSION OBJECTIVES FOR SULFUR OXIDES.

EMISSION FACILITY	AIR POLLUTION ALERT	AIR POLLUTION WARNING	AIR POLLUTION EMERGENCY
1. Coal or oil-fired electric power generating facilities.	a. Substantial reduction by utilization of fuels having lowest available sulfur content.	a. Maximum reduction by utilization of fuels having lowest available sulfur content.	a. Maximum reduction by utilization of fuels having lowest available sulfur content.
	b. Substantial reduction by diverting electric power generation to facilities outside of Alert Area.	b. Maximum reduction by diverting electric power generation to facilities outside of Warning Area.	b. Maximum reduction by diverting electric power generation to facilities outside of Emergency Area.
2. Coal or oil-fired process steam generating facilities.	a. Substantial reduction by utilization of fuels having lowest available sulfur content.	a. Maximum reduction by utilization of fuels having the lowest available sulfur content.	a. Maximum reduction by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage.
	b. Reduction of steam load demands consistent with continuing plant operations.	b. Reduction of steam load demands consistent with continuing plant operations.	b. Taking the action called for in the emergency plan.
		c. Making ready for use a plan of action to be taken if an emergency develops.	
3. A–Manufacturing and processing industries AND B–Other persons required by this rule to prepare standby plans.	a. Substantial reduction of air contaminants from manufacturing operations by curtailing, postponing, or deferring production and allied operations.	a. Maximum reduction of air contaminants from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.	a. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.
	b. Maximum reduction by deferring trade waste disposal operations which emit sulfur dioxide.	b. Maximum reduction by deferring trade waste disposal operations which emit sulfur dioxide	b. Elimination of air contaminants from trade waste disposal processes which emit sulfur dioxide
	c. Reduction of sulfur dioxide producing heat load demands for processing consistent with *continuing plant operations.*	c. Reduction of sulfur dioxide producing heat load demands for processing consistent with *continuing plant operations.*	c. Maximum reduction of sulfur dioxide producing load demands for processing.

Statutory Authority: *MS s 116.07 subd 4*

7005.3004 TABLE 4: EMISSION REDUCTION OBJECTIVES FOR NITROGEN OXIDES.

EMISSION FACILITY	AIR POLLUTION ALERT	AIR POLLUTION WARNING	AIR POLLUTION EMERGENCY
1. Steam-electric power generating facilities.	a. Substantial reduction by utilization of fuel which results in the formation of less air contaminant.	a. Maximum reduction by utilization of fuel which results in the formation of less air contaminant.	a. Maximum reduction by diverting electric power generation to facilities outside of Emergency Area.
	b. Substantial reduction by diverting electric power generation to facilities outside of Alert Area.	b. Maximum reduction by diverting electric power generation facilities outside of Warning Area.	
2. Process steam generating facilities.	a. Substantial reduction by utilization of fuel which results in the formation of less air contaminant.	a. Maximum reduction by utilization of fuel which results in the formation of less air contaminant.	a. Maximum reduction by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage.
	b. Reduction of steam load demands consistent with continuing plant operations.	b. Reduction of steam load demands consistent with continuing plant operations.	
		c. Making ready for use a plan of action to be taken if an emergency develops.	
3. A–Manufacturing and processing industries. AND B–Other persons required by this rule to prepare standby plans.	a. Substantial reduction of air contaminants from manufacturing operations by curtailing, postponing, or deferring production and allied operations.	a. Maximum reduction of air contaminants from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.	a. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.

	b. Maximum reduction by deferring trade waste disposal operations which emit nitrogen oxides.	b. Maximum reduction by deferring trade waste disposal operations which emit nitrogen oxides.	b. Elimination of air contaminants from trade waste disposal processes which emit nitrogen oxides.
	c. Reduction of nitrogen oxide producing heat load demands for processing consistent with continuing plant operations.	c. Reduction of nitrogen oxide producing heat load demands for processing consistent with continuing plant operations.	c. Maximum reduction of nitrogen oxide producing heat load demands for processing.
4. Stationary internal combustion engines.	a. Reduction of power demands consistent with continuing operations.	a. Reduction of power demands consistent with continuing operations.	a. Maximum reduction by reducing power demands to absolute necessities consistent with personnel safety and preventing equipment damage.
		b. Maximum reduction by utilization of fuels or power source which results in the formation of less air contaminants.	b. Maximum reduction by utilization of fuels or power source which results in the formation of less air contaminants.
5. Refuse disposal operations.	a. Maximum reduction by prevention of open burning.	a. Maximum reduction by prevention of open burning.	a. Maximum reduction by prevention of open burning.
	b. Substantial reduction by limiting burning of refuse in incinerators to the hours between 12:00 noon and 4:00 p.m.	b. Complete elimination of the use of incinerators.	b. Complete elimination of the use of incinerators.

Statutory Authority: *MS s 116.07 subd 4*

7005.3005 TABLE 5: EMISSION REDUCTION OBJECTIVES FOR HYDROCARBONS.

EMISSION FACILITY	AIR POLLUTION ALERT	AIR POLLUTION WARNING	AIR POLLUTION EMERGENCY
1. Petroleum products storage and distribution.	a. Substantial reduction of air contaminants by curtailing, postponing, or deferring transfer operations.	a. Maximum reduction of air contaminants by assuming reasonable economic hardship by postponing transfer operations.	a. Elimination of air contaminants by curtailing, postponing, or deferring transfer operations to the extent possible without causing damage to equipment.
2. Surface coating and preparation.	a. Substantial reduction of air contaminants by curtailing, postponing, or deferring transfer operations.	a. Maximum reduction of air contaminants by assuming reasonable economic hardship by postponing transfer operations.	a. Elimination of air contaminants by curtailing, postponing, or deferring transfer operations to the extent possible without causing damage to equipment.
3. A–Manufacturing and processing industries. AND B–Other persons required by this rule to prepare standby plans.	a. Substantial reduction of air contaminants from manufacturing operations by curtailing, postponing, or deferring production and allied operations.	a. Maximum reduction of air contaminants from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.	a. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.
4. Mobile sources.	a. Voluntary reduction in unnecessary vehicle use in response to Agency advisory.	a. Voluntary reduction in vehicle use through increased use of public transport, car pools, and van pools.	a. Maximum reduction by banning vehicle use except for emergencies.

Statutory Authority: *MS s 116.07 subd 4*

7005.3006 TABLE 6: EMISSION REDUCTION OBJECTIVES FOR CARBON MONOXIDE.

EMISSION FACILITY	AIR POLLUTION ALERT	AIR POLLUTION WARNING	AIR POLLUTION EMERGENCY
1. A–Manufacturing industries. AND B–Other persons required by this rule to prepare standby plans.	a. Substantial reduction of air contaminants from manufacturing operations by curtailing, postponing, or deferring production and allied operations.	a. Maximum reduction of air contaminants from manufacturing operations by, if necessary, assuming reasonable economic hardship by postponing production and allied operations.	a. Elimination of air contaminants from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without injury to persons or damage to equipment.
2. Refuse disposal operations.	a. Maximum reduction by prevention of open burning.	a. Maximum reduction by prevention of open burning.	a. Maximum reduction by prevention of open burning.
3. Mobile Sources.	a. Voluntary reduction in unnecessary vehicle use in response to Agency advisory.	a. Voluntary reduction in vehicle use through increased use of public transport, car pools, and van pools.	a. Maximum reduction by banning vehicle use except for emergencies.

Statutory Authority: *MS s 116.07 subd 4*

OFFSET RULE

7005.3010 PURPOSE.

The purpose of parts 7005.3010 to 7005.3060 is to establish conditions to be included in permits which the agency issues, in accordance with the requirements of Minnesota Statutes, section 116.07, subdivision 4a, to persons who propose to construct or modify certain emission facilities in nonattainment areas. These parts may be known as the "offset rule."

Statutory Authority: *MS s 116.07 subd 4*

7005.3020 SCOPE.

Except as provided in the paragraph below, parts 7005.3010 to 7005.3060 apply to persons who propose to construct or modify a subject emission facility, as defined in part 7005.3030, subpart 18.

Parts 7005.3010 to 7005.3060 do not apply in nonattainment areas of the state for which a plan has been developed and approved by the agency and the United States Environmental Protection Agency as providing sufficient emission reductions to both:

A. bring the area into attainment with the national primary ambient air quality standards by December 31, 1982; and

B. allow for an increase in emissions in the nonattainment area during that period of time the area is designated nonattainment.

Statutory Authority: *MS s 116.07 subd 4*

7005.3030 DEFINITIONS.

Subpart 1. **Scope.** The definitions in parts 7005.0100 to 7005.0180 apply to the terms used in parts 7005.3010 to 7005.3060 unless the terms are defined herein. For the purposes of these parts, the following words have the meanings defined below.

Subp. 2. **Air quality control region.** "Air quality control region" means any of the seven geographic areas specified by the agency for administrative purposes based on jurisdictional boundaries, urban and industrial concentrations, climate, meteorology, topography, and other factors affecting the interchange and diffusion of pollutants in the atmosphere. These are identified in Code of Federal Regulations, title 40, section 52.1221 (1980).

Subp. 3. **Criteria pollutant.** "Criteria pollutant" means any of the following: sulfur dioxide, particulate matter, nitrogen oxides, carbon monoxide, ozone, nonmethane hydrocarbons, and lead.

Subp. 4. **Fugitive emissions.** "Fugitive emissions" means those pollutant discharges which do not pass through a stack, chimney, vent, or other functionally equivalent opening and which discharges are quantifiable by methods in "Compilation of Air Pollutant Emission Factors" (OAQPS AP-42, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, 1980), or methods that the director determines are comparably reliable.

Subp. 5. **Lowest achievable emission rate.** "Lowest achievable emission rate" means, for any emission facility, the most stringent emission limitation or standard of performance that is achievable in practice by that class or category of emission facility. In no case shall the lowest achievable emission rate be construed to allow emissions in excess of any applicable standard. The emission limitation specified in any other state's plan shall be presumed to be achievable in practice unless a person demonstrates to the director that the emission limitation or standard of performance is not achievable for reasons other than economic costs.

Subp. 6. **Modification, modified.** "Modification" or "modified" means any

physical change in, change in the method of operation of, or addition to an emission facility which would result in a net increase in emissions. As used in parts 7005.3010 to 7005.3060, the term modification or modified does not include:

A. routine maintenance, repair, or replacement;

B. changes in method or hours of operation unless the changes are disallowed by an agency rule, stipulation agreement, permit or order, or by a court order;

C. increases in production rates unless the increases exceed the operating design capacity of any emission facility;

D. use of a fuel generated from municipal solid waste in a steam generating unit;

E. a change in ownership; or

F. use of a fuel or raw material in an emission facility that:

(1) was designed to accommodate the use prior to December 21, 1976; or

(2) is commencing or has commenced the fuel or raw material use pursuant to an order under sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974, United States Code, title 15, section 792 (1980), under a natural gas curtailment plan pursuant to the Federal Power Act, United States Code, title 16, section 791a et seq. (1980), or under section 125 of the Clean Air Act of 1977, United States Code, title 42, section 7425 (1980).

Subp. 7. **National ambient air quality standards.** "National ambient air quality standards" means the primary (health related) and secondary (welfare related) pollutant concentrations established by the administrator of the United States Environmental Protection Agency, pursuant to section 109 of the Clean Air Act of 1977, United States Code, title 42, section 7409 (1980).

Subp. 8. **Net air quality benefit.** "Net air quality benefit" means that, in the area that would be affected by the subject emission facility, offsets proposed to be obtained by a person pursuant to part 7005.3040, subpart 2 are sufficient to result in a net reduction, on both a pounds per hour and tons per year basis, in both the rate of emissions and the concentration of nonattainment criteria pollutants.

The area that would be affected by the subject emission facility is defined as follows:

A. for subject emission facilities proposed to be located in carbon monoxide, nitrogen oxide, nonmethane hydrocarbon, or ozone nonattainment areas, the area that would be affected by the subject emission facility is the air quality control region in which the subject emission facility is proposed to be located; and

B. for subject emission facilities proposed to be located in sulfur dioxide, particulate matter, or lead nonattainment areas, the area that would be affected by the subject emission facility is the area that the modeling analysis, performed in accordance with part 7005.3040, subpart 3, demonstrates to be affected by the subject emission facility.

The director shall find that there is a net reduction in both the rate of emissions and the concentration of nonattainment criteria pollutants if Y divided by X is equal to or greater than 1.1, where:

X = the restricted emissions to which the subject emission facility will be limited; and

Y = the offsets to be provided by the person proposing the subject emission facility.

Subp. 9. **Net increase in emissions.** "Net increase in emissions" means the

net number of new tons per year of a nonattainment criteria pollutant that could be legally discharged from a subject emission facility. In determining the net increase in emissions, the director shall include all nonattainment criteria pollutant discharges that the subject emission facility could emit but shall give a credit for:

A. all legally enforceable restrictions on or reductions of the nonattainment criteria pollutant discharges from the subject emission facility (such as a restriction on nonattainment criteria pollutant discharges that would result from installing required pollution control equipment); and

B. any other restrictions on or reductions of the nonattainment criteria pollutant discharges that the person proposing the subject emission facility both obtains within the same plant and agrees to include within the terms of any permit issued for the subject emission facility.

Subp. 10. **Nonattainment area.** "Nonattainment area" means any geographic region that has been designated by the agency as violating a state or national ambient air quality standard or by the United States Environmental Protection Agency as violating a national ambient air quality standard.

Subp. 11. **Nonattainment criteria pollutants.** "Nonattainment criteria pollutants" means as follows:

A. for all nonattainment areas except ozone nonattainment areas, nonattainment criteria pollutant means the criteria pollutant for which an area is designated nonattainment; and

B. for ozone nonattainment areas, nonattainment criteria pollutant means nonmethane hydrocarbons.

Subp. 12. **Offsets.** "Offsets" means any documented reductions in restricted emissions of nonattainment criteria pollutants that:

A. are legally enforceable; and

B. are achieved after August 7, 1977, or after the date of completion of the emission inventory used by the agency in developing the most recent revision to the plan, whichever is later.

Subp. 13. **Plan, state implementation plan.** "Plan" or "state implementation plan" means any state air quality control laws, rules, permits, stipulation agreements, and procedures, developed to insure compliance with state and national ambient air quality standards.

Subp. 14. **Plant.** "Plant" means any assemblage of buildings, structures, or emission facilities, on one or more adjacent or contiguous properties that are under common ownership or control and that are identified by the same two digit Standard Industrial Code as specified in the Standard Industrial Classification Manual, 1972, as prepared by the Executive Office of the President, Office of Management and Budget and as amended by the 1977 Supplement.

Subp. 15. **Resource recovery facility.** "Resource recovery facility" means any emission facility at which solid waste is processed for the purpose of extracting, converting to energy, or otherwise separating and preparing solid waste for reuse. An energy conversion facility must utilize solid waste to provide more than 50 percent of the heat input to be considered a resource recovery facility under these parts. In calculating whether solid waste is used to provide more than 50 percent of the heat input, a 30-day rolling average shall be used.

Subp. 16. **Restricted emissions.** "Restricted emissions" means the maximum nonattainment criteria pollutant discharges, including fugitive emissions, which may be emitted from an emission facility based on the most stringent of the following:

A. any emission standard or performance standard established in an applicable rule;

B. any emission standard or performance standard established in an applicable installation or operating permit or stipulation agreement;

C. any emission rate resulting from operation at design efficiency of air pollution control equipment for an emission facility;

D. any emission rate used as the basis for a revision to this state's plan unless such a rate is shown to be in error within 90 days of the effective date of these parts in which case the corrected rate shall be used; or

E. the emission rate to which the subject emission facility is physically limited.

Subp. 17. **State ambient air quality standards.** "State ambient air quality standards" means the pollutant concentrations in parts 7005.0010 to 7005.0080.

Subp. 18. **Subject emission facility.** "Subject emission facility" means:

A. an emission facility that is proposed to be constructed or modified:

(1) in any area designated a nonattainment area on the date the agency receives the completed permit application for the proposed construction or modification; and

(2) the construction or modification of which will result in a net increase in emissions of at least 100 tons per year of a nonattainment criteria pollutant; or

B. an emission facility that is proposed to be modified:

(1) in any area designated a nonattainment area on the date the agency receives the completed permit application for the proposed modification;

(2) has existing restricted emissions of at least 100 tons per year of the nonattainment criteria pollutant; and

(3) the modification of which will result in a significant net increase in emissions of the nonattainment criteria pollutant. A net increase in emissions is significant if the rate of the increase is at least the rate specified below:

(a) carbon monoxide 100 tons per year;

(b) sulfur dioxide 40 tons per year;

(c) nitrogen oxides 40 tons per year;

(d) nonmethane hydrocarbons 40 tons per year;

(e) particulate matter 25 tons per year;

(f) lead 0.6 tons per year; or

C. A plant that is proposed to be modified in any area designated a nonattainment area on the date the agency receives the completed permit application for the proposed modification and which proposed modification, when considered in aggregate with X, will result in a significant net increase in emissions of the nonattainment criteria pollutant, where:

(1) X = the net increase in nonattainment criteria pollutant discharges resulting from any construction or modification of the plant which was permitted by the agency during the following time period: any time both within the 18 months immediately prior to the date the agency receives the completed permit application for the proposed modification and during which the area within which the plant is located was designated a nonattainment area.

(2) A net increase in emissions is significant if the rate of the increase is at least the rate specified in item B, subitem 3.

Subp. 19. **Thirty-day rolling average.** "Thirty-day rolling average" means the arithmetic mean of daily values calculated with each new day as the last of a 30-day period; provided however, that the arithmetic mean of daily values obtained during times of breakdown shall be excluded from the calculation.

Statutory Authority: *MS s 116.07 subd 4*

7005.3040 CONDITIONS FOR PERMIT.

Subpart 1. **In general.** Except as provided in subpart 6, the agency shall not issue permits for any subject emission facility unless the permit applicant has

satisfied the conditions in subparts 2 to 4. All permits issued for subject emission facilities shall contain the conditions set forth in subpart 5.

Subp. 2. **Requirement to get offsets.** Prior to constructing or modifying a subject emission facility, except an emission facility that is intended to be located in a nonattainment area for less than two years, the owner or operator of that facility shall obtain offsets for all emissions of nonattainment criteria pollutants that will result from the construction or modification. An emission facility that was intended to be located in the nonattainment area for less than two years but that remains for two years or more shall be subject to all the applicable requirements of these parts.

Subp. 3. **Requirement to demonstrate a net air quality benefit.** Prior to constructing or modifying a subject emission facility, the permit applicant shall demonstrate that the offsets to be provided are sufficient to result in a net air quality benefit, as defined in part 7005.3030, subpart 8.

A. For subject emission facilities located or proposed to be located in carbon monoxide, nitrogen oxide, nonmethane hydrocarbon, or ozone nonattainment areas, a permit applicant shall not be required to perform a modeling analysis to demonstrate net air quality benefit but shall submit to the agency a detailed statement of all information that the director needs in order to be able to determine whether a net air quality benefit will result from the construction or modification.

B. For subject emission facilities located or proposed to be located in sulfur dioxide or particulate matter or lead nonattainment areas, a permit applicant shall perform a modeling analysis to determine whether the offsets to be provided are sufficient to result in a net air quality benefit, shall analyze the data obtained and shall submit to the agency the modeling data, the modeling analyses, a detailed description of the system of continuous emission reduction planned, and emission estimates made, together with any other information that the director needs in order to be able to determine whether a net air quality benefit will result from the construction or modification. All modeling shall be performed in accordance with "Guidelines on Air Quality Models" (OAQPS No. 1.2-080, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, 1978) or methods that the director finds to be comparably reliable.

Subp. 4. **Requirement to certify compliance.** Prior to constructing or modifying a subject emission facility, the permit applicant shall certify that all emission facilities in Minnesota which are either owned or operated in whole or in part by the same person for whom the application is made or which are operated under the common control of the same person for whom the application is made are in compliance or are on a compliance schedule.

Subp. 5. **Permit conditions.** Any permit issued for a subject emission facility shall include a provision that:

A. Limits emissions from the facility as follows:

(1) The owner or operator of a subject emission facility shall install technology that restricts emissions from the facility to the lowest achievable emission rate of the nonattainment criteria pollutants for which the facility is subject to these parts. The permit shall expressly describe the lowest achievable emission rate for the class or category of emission facility into which the subject emission facility falls.

(2) The director shall waive the requirement of this subpart if the director determines that a performance standard based on design, equipment, work practice, operation, or other alternative standard is more practicable than an emission rate.

B. States that the offsets that the subject emission facility has obtained in order to be issued a permit under these parts are legally enforceable by the agency and by the United States Environmental Protection Agency.

Subp. 6. **Exception from requirement to get offsets.** A permit applicant proposing to construct or modify a resource recovery facility burning municipal solid waste shall not be required to obtain sufficient offsets to demonstrate a net air quality benefit if the director determines that the permit applicant has made its best efforts to obtain sufficient offsets to comply with these parts and has demonstrated that such efforts were unsuccessful; has obtained all available offsets; and agrees to continue to seek the necessary offsets and apply them when they become available.

The director shall determine that the permit applicant has made its best efforts if the permit applicant demonstrates that the requirement to obtain sufficient offsets creates an undue economic hardship for the permit applicant or is technologically unachievable.

If the permit applicant seeks to obtain an exception on the grounds of undue economic hardship, it shall submit to the director the information set out in part 7000.0700, subpart 2, item E.

If the permit applicant seeks to obtain an exception on the grounds of technological unachievability, it shall submit to the director the information set out in part 7000.0700, subpart 2, item F.

Statutory Authority: *MS s 116.07 subd 4*

7005.3050 BANKING.

A person who has obtained a reduction in the amount of restricted emissions emitted from an emission facility shall be permitted to bank that reduction for future use as an offset as allowed by these parts under the following circumstances, limitations, and conditions. Parts 7005.3010 to 7005.3060 authorize a person to bank only those reductions in emissions that:

A. were obtained after August 7, 1977, but prior to the effective date of these parts and that are reported to the agency within six months of the effective date of these parts; or

B. are obtained after the effective date of these parts.

In order to be eligible for banking, the emission reductions shall be final and enforceable, either through the terms of a stipulation agreement, permit, or other legal instrument obtained by an owner of a facility or through a permanent, physical alteration of the facility.

In order to be able to bank reductions in emissions, the person obtaining those reductions shall report to the director the amount and location of the banked emissions and the time at which the banked emissions have become permanently and finally implemented. The report shall be made within six months after the reductions have become final and enforceable or within six months after these parts have been adopted, whichever is later.

Statutory Authority: *MS s 116.07 subd 4*

7005.3060 LIMITATION ON USE OF OFFSETS.

To the extent that these parts creates a program for the use of offsets or allows persons to purchase or obtain offsets, these parts shall not be construed to create a property right that requires compensation from the state should offsets later become unusable due to a change in an applicable emission limitation or standard of the agency.

Statutory Authority: *MS s 116.07 subd 4*

ACID DEPOSITION CONTROL

7005.4010 DEFINITIONS.

Subpart 1. **Scope.** The definitions in part 7005.0100 apply to the terms used in parts 7005.4010 to 7005.4050 unless the terms are defined in this part.

Subp. 2. **Electric utility.** "Electric utility" means persons, corporations, or

other legal entities, their lessees, trustees, and receivers operating, maintaining, or controlling in Minnesota facilities used for the generation of electricity.

Subp. 3. **Offsets.** "Offsets" means any documented reductions in actual emissions of sulfur dioxide that are legally enforceable.

Subp. 4. **Reasonably available control technology (RACT).** "Reasonably available control technology" (RACT) means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

Subp. 5. **Sensitive areas.** "Sensitive areas" means the areas listed by the agency pursuant to Minnesota Statutes, section 116.44 because the agency has determined these areas contain natural resources sensitive to the impacts of acid deposition.

Statutory Authority: *MS s 116.44*

History: *11 SR 401*

7005.4020 APPLICABILITY.

The acid deposition standard established in part 7005.4030 applies only in sensitive areas.

Statutory Authority: *MS s 116.44*

History: *11 SR 401*

7005.4030 ACID DEPOSITION STANDARD.

The acid deposition standard is an annual average of 11 kilograms of wet sulfate deposition per hectare.

Statutory Authority: *MS s 116.44*

History: *11 SR 401*

7005.4040 MEASUREMENT METHODOLOGY FOR SULFATE.

Subpart 1. **Incorporation by reference.** Quality Assurance Handbook for Air Pollution Measurement Systems (EPA-600/4-82-042 a & b), as amended, is incorporated by reference. This publication is available from the United States Environmental Protection Agency, Office of Research and Development, 26 West St. Clair, Cincinnati, Ohio 45268 and can be found at the offices of the agency, 1935 West County Road B-2, Roseville, Minnesota 55113, the Government Documents Section, Room 409, Wilson Library, University of Minnesota, 309 19th Avenue South, Minneapolis, Minnesota 55454, and the State of Minnesota Law Library, Ford Building, 117 University Avenue, St. Paul, Minnesota 55155. This document is not subject to frequent change.

Subp. 2. **Measurement procedure.** For sulfate, measurements made to determine compliance with the standard contained in part 7005.4030 shall be performed in accordance with the Quality Assurance Handbook for Air Pollution Measurement Systems: Volume V, Manual for Precipitation Measurement Systems (EPA-600/4-82-042 a & b). A person seeking to make measurements to determine compliance with the acid deposition standard shall develop and submit to the director for approval a quality assurance plan containing equipment specifications and procedures for operation, maintenance, and internal quality control of the measurement system.

Statutory Authority: *MS s 116.44*

History: *11 SR 401*

7005.4050 ACID DEPOSITION CONTROL REQUIREMENTS IN MINNESOTA.

Subpart 1. **Emission limitations.** Any electric utility whose electric generating facilities located in Minnesota have a total combined net generating capacity

greater than 1,000 megawatts may not emit from the emission facilities which it owns, operates, maintains, or controls in Minnesota total emissions of sulfur dioxide in excess of 130 percent of the number of tons of sulfur dioxide emitted from the electric utility's emissions facilities in 1984. This limitation shall apply beginning January 1, 1990. The determination as to the number of tons emitted by an electric utility's emission facilities shall be made by the director based on emission information obtained from the electric utility pursuant to Minnesota Rules, part 7005.1870.

Subp. 2. **Offsets required.** In the event that an electric utility described in subpart 1 intends to increase emissions of sulfur dioxide from its emission facilities in Minnesota after January 1, 1990, beyond the limitations specified in subpart 1, the electric utility shall obtain sulfur dioxide emission offsets equal to the amount to be emitted in excess of the limitation specified.

Subp. 3. **Transfer requiring reduced emissions.** If any emission facility owned by an electric utility described in subpart 1 on July 1, 1985, is sold or transferred to any person other than another electric utility described in subpart 1, and if the transfer results in the operation of the transferred emission facility by a person other than the seller, the amount of sulfur dioxide emissions allowed by the seller under subpart 1 shall be reduced by the amount of sulfur dioxide emissions emitted by the transferred emission facility in 1984 or the maximum SO_2 emissions allowed under the permit issued to the new owner or operator whichever is greater. If any emission facility owned by an electric utility described in subpart 1 on July 1, 1985, is sold or transferred to another electric utility described in subpart 1, and if the transfer results in the operation of the transferred emission facility by a person other than the seller, the amount of sulfur dioxide emissions allowed by the seller under subpart 1 shall be reduced by the maximum amount of sulfur dioxide emissions allowed under the permit issued to the new operator, and the amount of emissions allowed by the buyer under subpart 1 shall be increased by the maximum amount of sulfur dioxide emissions allowed under the permit issued to the new operator.

Subp. 4. **1990 recommendations required.** On or before February 1, 1988, the director shall make a recommendation to the agency as to what, if any, additional regulatory requirements need to be imposed on emission facilities in Minnesota in order to maintain or achieve a statewide sulfur dioxide emission limitation of 224,000 tons per year on and after January 1, 1990.

Subp. 5. **Requirement for application of reasonably available control technology.** On and after January 1, 1990, the owner or operator of any electric generating facility that contains indirect heating equipment with a rated heat input of greater than 5,000 million BTU per hour shall reduce sulfur dioxide emissions at the facility to a level consistent with RACT.

Subp. 6. **1994 recommendations required.** On or before February 1, 1992, the director shall make a recommendation to the agency as to what, if any, additional regulatory requirements need to be imposed on emission facilities in Minnesota in order to maintain or achieve a statewide sulfur dioxide emission limitation of 194,000 tons per year on and after January 1, 1994.

Statutory Authority: *MS s 116.44*

History: *11 SR 401*