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 commissioner. The commissioner 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*

History: *L 1987 c 186 s 15*

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 meter (0.03 ppm by volume)	60 micrograms per cubic meter (0.02 ppm by volume)	maximum annual arithmetic mean
	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 meter	60 micrograms per cubic meter	maximum annual geometric mean
	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 commissioner'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, commencement.** "Commenced" or "commencement" means that an owner or operator has:

A. Begun, or caused to begin, a continuous program of actual on-site construction, modification, or reconstruction activities, to be completed within a reasonable time; or

B. Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction, modification, or reconstruction to be completed within a reasonable time.

Subp. 4b. **Commissioner.** "Commissioner" means the commissioner of the Pollution Control Agency.

Subp. 5. **Construction.** "Construction" means any physical change or change in the method of operation, including fabrication, erection, installation, demolition, or modification of an emission facility, emissions unit, or stationary source that would result in a change in actual emissions. These activities include site clearance, grading, dredging, landfilling, installation of building supports and foundation, laying of underground pipework, and construction of permanent storage structures. With respect to a change in method of operating, this term refers to those on-site activities other than preparation activities that mark the initiation of the change.

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. 8a. **Criteria pollutant.** "Criteria pollutant" means any of the following: sulfur dioxide, particulate matter, nitrogen oxides, carbon monoxide, ozone, lead, and any other pollutants for which national ambient air quality standards have been established in Code of Federal Regulations, title 40, part 50, as amended, or for which state ambient air quality standards have been established in parts 7005.0010 to 7005.0080.

Subp. 9. [Repealed by amendment, L 1987 c 186 s 15; 13 SR 2153]

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. [Repealed, 13 SR 2153]

Subp. 10b. **Emissions unit.** "Emissions unit" means each activity that emits or has the potential to emit any air contaminant or pollutant. This includes each piece of equipment, machinery, device, apparatus, activity, or any other means whereby an emission is caused to occur or has the potential 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 commissioner'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. **Federally enforceable.** "Federally enforceable" means enforceable by the administrator of the United States Environmental Protection Agency. Federally enforceable limitations, conditions, and requirements include requirements in or developed pursuant to Code of Federal Regulations, title 40, parts 60 and 61, requirements within any applicable state implementation plan, and any permit requirements established according to Code of Federal Regulations, title 40, section 51.166 or 52.21, or Code of Federal Regulations, title 40, part 51, subpart I.

Subp. 11c. **Fugitive emissions.** "Fugitive emissions" means pollutant discharges that could not reasonably pass through a stack, chimney, or other functionally equivalent opening.

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 emissions unit, emission facility, or stationary source 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 emissions unit, emission facility, or stationary source.

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 to emit.** "Potential emissions" or "potential to emit" means the maximum capacity while operating at the maximum hours of operation of an emissions unit, emission facility, or stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restriction on hours of operation or on the type or amount of material combusted, stored, or processed must be treated as part of its design if the limitation or the effect it would have on emissions is:

A. federally enforceable with respect to permits for construction, modification, or reconstruction; or

B. enforceable by the state with respect to permits not included in item A.

Secondary emissions must not be counted in determining the potential to emit of an emissions unit, emission facility, or stationary source.

Subp. 35b. **Reconstruction.** "Reconstruction" means replacement of depreciable components of an existing emissions unit 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 emissions unit.

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. 36a. **Secondary emissions.** "Secondary emissions" means emissions that would occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. Secondary emissions include emissions from any offsite support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include any emissions that come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel in transit.

In calculating the net increase in emissions from a particular physical change or change in the method of operation, secondary emissions must not be included unless they are specific, well defined, quantifiable, and impact the same general area as the stationary source or modification that causes the secondary emissions.

Subp. 37. **Shutdown.** "Shutdown" means the cessation of operation of an emissions unit, emission facility, stationary source, 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. **Start-up.** "Start-up" means the setting into operation of an emissions unit, emission facility, stationary source, 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. 42c. **Stationary source.** "Stationary source" means an assemblage of all emissions units and emission facilities that belong to the same industrial grouping, are located at one or more contiguous or adjacent properties and are under the control of the same person (or persons under common control). Emissions units or emission facilities must be considered as part of the same industrial grouping if they belong to the same "major group" (that is, which have the same two-digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement (United States Government Printing Office Stock Numbers 4101 to 0066 and 003-005-00176-0, respectively).

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

Subp. 44. [Repealed, 13 SR 2153]

Statutory Authority: *MS s 116.07 subd 4*

History: *8 SR 2275; L 1987 c 186 s 15; 13 SR 2153; 13 SR 2154*

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 emissions unit. 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 emissions unit is in compliance with the applicable standard of performance for particulate matter and all other standards of performance, except the opacity standard;

B. the stationary source is in compliance with all applicable standards of performance except the opacity standard at the emissions unit for which adjustments are being sought or have already been permitted by the agency; and

C. the stationary source was operated in a manner to minimize the opacity of emissions at the emissions unit 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 stationary source 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," EPA-450/2-78-027R, as amended by supplemental updates, or methods that the commissioner finds to be comparably reliable. The Guidelines are incorporated by reference. The Guidelines are written and published by the USEPA, Office of Air and Radiation, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina 27711. The guidelines are subject to frequent change and are available from the Minnesota State Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota 55155.

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 emissions unit 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 stationary source, 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; L 1987 c 186 s 15; 13 SR 2154*

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 commissioner, 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*

History: *L 1987 c 186 s 15*

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, $F = 2.723 \times 10^{-7}$ dscm/J (10140 dscf/10^6 Btu);

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

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

(4) For gaseous fossil fuels including natural gas, propane, and butane, $F = 2.347 \times 10^{-7}$ 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:

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

where:

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

E_t = 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 commissioner 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 commissioner 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 commissioner 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 commissioner 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*

History: *L 1987 c 186 s 15*

7005.0390 TABLE I: EXISTING INDIRECT HEATING EQUIPMENT.

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 INDIRECT HEATING EQUIPMENT.

RATED HEAT INPUT OF THE INDIRECT HEATING EQUIPMENT	RATED HEAT INPUT OF ALL DIRECT AND INDIRECT HEATING EQUIPMENT AT THE PARTICULAR LOCATION	EMISSION LIMITATIONS LBS. PER MILLION BTU					
		Particulate Matter	SO_2			NO_x*	
Million BTU/Hr.	Million BTU/Hr.	All Fuels	Solid Fuels	Liquid Fuels	Solid Fuels	Gaseous Fuels	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, DSCFM[a]	Concentration GR/DSCF[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]Dry standard cubic feet per minute

[b]Grains per dry standard cubic foot.

Statutory Authority: *MS s 116.07 subd 4*

History: *13 SR 2154*

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 commissioner 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*

History: *L 1987 c 186 s 15*

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 commissioner.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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:

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

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 commissioner 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*

History: *L 1987 c 186 s 15*

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 commissioner.

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

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*

History: *L 1987 c 186 s 15*

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 commissioner for locations within the county but outside the corporate limits of cities within the county;

E. upon the approval of the commissioner, 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 commissioner of the agency or an employee of the agency authorized by the commissioner, who may in their discretion refer the applicant to a local permit issuing authority.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner, 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*

History: *L 1987 c 186 s 15*

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, catch-basin, 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 commissioner 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 commissioner for indicating temperature, pressure, or other operating conditions.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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, blowoff 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 commissioner 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*

History: *L 1987 c 186 s 15*

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*

NOTE: Laws of Minnesota 1988, chapter 487, section 1, subdivision 5, provides that Minnesota Statutes, section 325E.0951, supersedes this part to the extent this rule is inconsistent with that section.

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 commissioner 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 commissioner when typical Reid vapor pressure is used.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 an emissions unit or units are located, upwind and downwind of the 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 commissioner may be used.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15; 13 SR 2154*

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 commissioner, 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*

History: *L 1987 c 186 s 15*

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 commissioner 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, $Q_s \times c$ = lb/hr (kg/hr), where Q_s = volumetric flow rate of the effluent in dscf/hr (dscm/hr) as determined in accordance with part 7005.1390, 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*

History: *L 1987 c 186 s 15*

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 commissioner, 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*

History: *L 1987 c 186 s 15*

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. 4a. **Commissioner.** "Commissioner" means the commissioner of the Minnesota Pollution Control Agency.

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

Subp. 6. [Repealed by amendment, L 1987 c 186 s 15]

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 commissioner.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner and these procedures shall be effected before the demolition is continued.

E. The commissioner 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 commissioner deems necessary to determine that the above procedures will be followed to prevent asbestos particulate matter from becoming airborne.

F. The commissioner 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 commissioner of the agency.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner. Such application shall include sufficient information to demonstrate that fabric filters cannot be used. The commissioner shall authorize the use of wet collectors if the commissioner 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 part if the referenced control equipment is not used.

A. The owner or operator of the emissions unit, or vendor of emission control equipment, shall make available to the commissioner 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 commissioner, 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 emissions unit. 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 opera-

tion of the substitute device. The method used to determine the total mass collection efficiency and particle size distribution must be approved by the commissioner.

B. The owner or operator of the emissions unit, or vendor of emission control equipment, shall submit to the commissioner 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 commissioner, 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 commissioner 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*

History: *L 1987 c 186 s 15; 13 SR 2154*

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*

ASBESTOS ABATEMENT

7005.1611 PURPOSE AND SCOPE.

The purpose of parts 7005.1611 to 7005.1618 is to protect persons from asbestos exposure during and after asbestos related work, by requiring minimum qualifications for individuals engaged in asbestos related work and by assuring that prescribed procedures are followed for asbestos related work.

Parts 7005.1611 to 7005.1618 regulate asbestos related work involving friable asbestos containing material that contains greater than one percent asbestos by weight in quantities greater than or equal to 260 linear feet on pipes or 160 square feet on other facility components.

All asbestos related work must be performed by licensed asbestos abatement contractors employing certified asbestos abatement site supervisors and certified asbestos abatement workers.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

7005.1612 DEFINITIONS.

Subpart 1. **Scope.** For the purpose of this chapter, the following terms have the meanings given them.

Subp. 2. **Abatement area.** "Abatement area" means an area established by the asbestos abatement contractor, restricted to abatement personnel only, where airborne concentrations of asbestos exceed or can reasonably be expected to exceed 0.01 fibers per cubic centimeter (f/cc) or alternative indoor air standard established in accordance with these rules.

Subp. 3. **Asbestos.** "Asbestos" means the asbestiform varieties of chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite grunerite), anthophyllite, tremolite, and actinolite.

Subp. 4. **Asbestos abatement contractor.** "Asbestos abatement contractor" means an employer who conducts asbestos related work and includes employers who perform in house asbestos related work using their own employees.

Subp. 5. **Asbestos abatement plan.** "Asbestos abatement plan" means a written plan which describes the equipment and procedures that will be used throughout the asbestos abatement project. Requirements for the plan are described in part 7005.1616, subpart 3, item A.

Subp. 6. **Asbestos abatement worker.** "Asbestos abatement worker" means any employee who conducts asbestos related work.

Subp. 7. **Asbestos containing material (ACM).** "Asbestos containing material (ACM)" means material that contains more than one percent asbestos by weight.

Subp. 8. **Asbestos related work.** "Asbestos related work" means the enclosure, removal, or encapsulation of friable asbestos containing material in quantities greater than or equal to 260 linear feet on pipes or 160 square feet on other facility components in one facility.

A. To determine whether planned enclosure, removal, or encapsulation operations constitute "asbestos related work," the contracting entity must predict the additive quantity of friable asbestos containing materials to be enclosed, removed, or encapsulated in the facility over the maximum period of time for which a prediction can be made, not to exceed one year.

B. To determine whether emergency enclosure, removal, or encapsulation operations constitute "asbestos related work," the contracting entity must estimate the quantity of friable asbestos containing materials to be enclosed, removed, or encapsulated as a result of the sudden, unexpected event that necessitated the operation.

Subp. 9. **Clearance air level.** "Clearance air level" means the maximum permissible concentration of fibers remaining in the air in the abatement area following completion of asbestos related work which must not exceed 0.01 fibers per cubic centimeter (f/cc) of air as analyzed by phase contrast microscopy, counting fibers with a length to width ratio equal to or greater than 3:1 and greater than five microns in length, or the alternative clearance air level established pursuant to part 7005.1616, subpart 3, item D.

Subp. 10. **Clearance air sampling.** "Clearance air sampling" means the air sampling method used to document the concentration of fibers remaining in the air in the abatement area following completion of asbestos related work.

Subp. 11. **Commissioner.** "Commissioner" means the commissioner of health and the commissioner's designees.

Subp. 12. **Contingent EPA approval.** "Contingent EPA approval" means the Environmental Protection Agency (EPA) has reviewed the training course sponsor's written submission seeking EPA approval, found the materials to be acceptable, but has not yet conducted an on-site audit.

Subp. 13. **Contracting entity.** "Contracting entity" means a public or private body, board, natural person, corporation, partnership, proprietorship, joint venture, fund, authority, or similar entity that contracts with an employer or person to do asbestos related work for the benefit of the contracting entity.

Subp. 14. **Critical containment barriers.** "Critical containment barriers" means

the barriers constructed to separate and isolate the abatement area from the rest of the building and the outdoors, including the barriers constructed over doors, windows, and air passageways.

Subp. 15. **Emergency demolition.** "Emergency demolition" means that the facility is being demolished under an order of a state or local governmental agency, because the facility is structurally unsound and in danger of imminent collapse.

Subp. 16. **Emergency renovation.** "Emergency renovation" means asbestos related work which was not planned but results from a sudden, unexpected event. This includes work required by nonroutine failures of equipment.

Subp. 17. **Employee.** "Employee" means a person who works directly or indirectly for an employer.

Subp. 18. **Employer.** "Employer" means an individual, body, board, corporation, partnership, proprietorship, joint venture, fund, authority, or similar entity directly or indirectly employing an employee. This term applies to private employers and to the state, its political subdivisions, and any boards, commissions, schools, institutions, or authorities created or recognized by them.

Subp. 19. **Encapsulation.** "Encapsulation" refers to a method of asbestos abatement that is sometimes chosen as an alternative to asbestos removal, and means the treatment of asbestos containing building materials with a sealant material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent the release of fibers. A bridging encapsulant creates a membrane over the surface. A penetrating encapsulant penetrates the material and binds its components together.

Subp. 20. **Enclosure.** "Enclosure" refers to a method of asbestos abatement that is sometimes chosen as an alternative to asbestos removal, and means construction of permanent, airtight, impermeable walls, ceilings, and floors around asbestos containing material to prevent the release of asbestos fibers into the air.

Subp. 21. **Friable asbestos material.** "Friable asbestos material" means any material containing more than one percent asbestos by weight that hand pressure can crumble, pulverize, or reduce to powder when dry.

Subp. 22. **Full EPA approval.** "Full EPA approval" means the Environmental Protection Agency (EPA) has reviewed and found acceptable the training course sponsor's written submission for EPA approval, conducted an onsite audit and determined that the training course meets or exceeds the training requirements of the EPA Model Accreditation Plan.

Subp. 23. **Glove bag.** "Glove bag" means a bag, fitted with arms, through which limited types of asbestos related work may be performed, as allowed in part 7005.1616, subpart 4.

Subp. 24. **High efficiency particulate air (HEPA) filter.** "High efficiency particulate air (HEPA) filter" means a filter capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 microns in diameter or larger.

Subp. 25. **Industrial facility.** "Industrial facility" means a facility in an industry classified in the Standard Industrial Classification Manual, 1972 edition, published by the Office of Management and Budget, within Major Groups 20 to 39, 46, and 49. This document is not subject to frequent change and is incorporated by reference and is available at the State Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota 55155.

Subp. 26. **Minnesota approved.** "Minnesota approved" means a training course that meets the requirements for approval described in part 7005.1618.

Subp. 27. **Occupied area immediately adjacent to an abatement area.** "Occupied area immediately adjacent to an abatement area" is a designation used during an asbestos related work project and means an indoor space which meets all of the following criteria.

A. The space is not considered part of the abatement area.

B. The space shares a wall, floor, or ceiling with the temporary barriers constructed to enclose the abatement area or shares a window, door, or similar opening to a room temporarily considered the abatement area.

C. The space is occupied by persons not involved in asbestos related work.

Subp. 28. **Renovation.** "Renovation" means altering in any way one or more facility components. In asbestos related work renovation includes the enclosure, removal, or encapsulation of friable asbestos containing material.

Subp. 29. **Responsible individual.** "Responsible individual" means one who has the authority to represent the company in all matters related to the asbestos abatement contractor license.

Subp. 30. **Site supervisor.** "Site supervisor" means one who meets the OSHA definition of a competent person and has the authority to act as the agent of the asbestos abatement contractor at the work site.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

7005.1613 LICENSING REQUIREMENTS FOR ASBESTOS ABATEMENT CONTRACTORS INTENDING TO PERFORM ASBESTOS RELATED WORK.

Subpart 1. **License required.** On and after January 1, 1989, an asbestos abatement contractor who performs asbestos related work must be licensed as a Minnesota asbestos abatement contractor. This includes employers who perform in house asbestos related work using their own employees.

Subp. 2. **Initial application for license.** An applicant for an initial asbestos abatement contractor license shall submit the following:

A. A properly completed application on a form provided by the commissioner.

B. A $100 nonrefundable application fee, in the form of a check, payable to the Treasurer, State of Minnesota.

C. The name, address, and social security number of the responsible individual who has taken the required training as specified under part 7005.1618 and is applying for a license on behalf of the asbestos abatement contractor.

D. Evidence that the responsible individual who is applying has successfully completed a Minnesota approved initial training course for asbestos abatement contractors and site supervisors that meets the following requirements:

(1) for purposes of license applications submitted before January 1, 1989, a training course taken between June 1, 1987 and December 31, 1988, is considered Minnesota approved if it has full or contingent EPA approval, and the responsible individual completed the course within one year of application; and

(2) for purposes of license applications submitted on or after January 1, 1989, a training course must meet the additional criteria for training courses in part 7005.1618 to be Minnesota approved.

E. A list of the other states in which the asbestos abatement contractor is licensed or certified for asbestos abatement work.

F. Copies of any asbestos related citations or notices of violation issued by Minnesota Occupational Safety and Health Review Board, the Minnesota Pollution Control Agency, the federal Occupational Safety and Health Administration, or the federal Environmental Protection Agency, within two years before the date of application; or similar citations received by the asbestos abatement contractor for work performed in other states, and a description of corrective actions taken.

G. Evidence of workers' compensation insurance coverage.

H. A statement that the asbestos abatement contractor does not owe outstanding Minnesota tax obligations.

I. The social security number of the responsible individual and the asbestos abatement contractor's Minnesota business identification number.

Subp. 3. **Denial of license application.** An application for license may be denied for any of the following reasons:

A. failure of the applicant to complete the application;

B. failure of the applicant to submit the application with the required fee; or

C. failure of the applicant to meet the qualifications required by the Asbestos Abatement Act, Minnesota Statutes, sections 326.70 to 326.82, and parts 7005.1611 to 7005.1618, and state law relating to delinquent tax accounts.

An applicant shall be notified in writing of the denial and the reasons for the denial. A person who resubmits an initial application is not required to pay a second fee.

Subp. 4. **Licensure.** An applicant who meets the requirements in subpart 2, shall be issued a written Minnesota asbestos abatement contractor license. For licenses issued on or after January 1, 1989, the date of issuance is the date the applicant successfully completes the training requirements in subpart 2, item D. The following information shall appear on the front of the license:

A. the employer's name and address;

B. the name of the responsible individual;

C. the date the license is issued;

D. the date the license expires; and

E. the signature of the commissioner.

Copies certified by the commissioner shall be issued upon request.

Subp. 5. **Annual license renewal.** The license is effective for one year unless the commissioner revokes or suspends the license. Renewal licenses shall be issued to qualified applicants.

A. The commissioner may renew a license if the license holder submits a completed, approvable renewal application at least 30 but not more than 60 days prior to the expiration date of the existing license.

B. Renewal applications will only be accepted from the responsible individual who currently holds the license on behalf of the company. License holders applying for renewal of a license shall submit each of the following items:

(1) a properly completed renewal application on a form provided by the commissioner;

(2) a $100 nonrefundable renewal application fee in the form of a check, payable to the Treasurer, State of Minnesota; and

(3) evidence that the responsible individual has attended and successfully completed a Minnesota approved annual refresher training course for asbestos abatement contractors. The criteria for Minnesota approval of training courses are described under part 7005.1618.

Subp. 6. **Denial of renewal application.** An application for license renewal may be denied for the reasons stated under subpart 3. An applicant shall be notified in writing of the denial and the reasons for the denial.

Subp. 7. **Retention of license in event of change in responsible person or contractor ownership.**

A. If the responsible individual for the license changes, the asbestos abatement contractor must notify the commissioner within two days of the change and file a properly completed application form, as described under subpart 1, with the commissioner within 30 days of the change. The asbestos abatement contractor will then receive a sticker from the commissioner reflecting the change, and may retain the same numbered license until the expiration date.

B. If the contracting firm licensed by the state is sold in whole or in part, the purchaser must notify the commissioner within two days of the sale and file a properly completed application form with the commissioner within 30 days of the sale. The purchaser will then receive a sticker from the commissioner reflecting any changes, and may retain the same numbered license until the expiration date.

Subp. 8. **Procedures for obtaining duplicate license.** The commissioner may issue a duplicate license to replace a lost, destroyed, or mutilated license. The responsible individual shall submit a properly completed application for a duplicate license on a form provided by the commissioner. A duplicate license must have "duplicate" stamped on its face and must bear the same number and expiration date as the original license.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

7005.1614 CERTIFICATION OF ASBESTOS ABATEMENT SITE SUPERVISORS AND ASBESTOS ABATEMENT WORKERS.

Subpart 1. **Certification of supervisors and workers required.** On and after January 1, 1989, an employee who performs asbestos related work must be certified as an asbestos abatement site supervisor or asbestos abatement worker. Site supervisors and workers who perform asbestos related work shall be issued a written Minnesota asbestos abatement site supervisor or worker certificate with the person's name, the date issued, the date of expiration, and the signature of the commissioner appearing on the front of the certificate. The certified asbestos abatement site supervisor or worker must have the certificate readily available at the work site for inspection by the commissioner's designees.

Subp. 2. **Initial application for site supervisor or worker certification.**

A. An applicant for initial certification as an asbestos abatement site supervisor or worker must submit the following:

(1) a properly completed application on a form provided by the commissioner;

(2) a nonrefundable application fee of $50 in the form of a check, payable to the Treasurer, State of Minnesota; and

(3) evidence of attendance and successful completion of a Minnesota approved initial training course that meets the following requirements:

(a) site supervisors must show evidence of attendance and successful completion of a Minnesota approved initial training course for contractors and site supervisors;

(b) workers must show evidence of attendance and successful completion of a Minnesota approved initial training course for workers;

(c) for purposes of applications submitted before January 1, 1989, a training course taken between June 1, 1987 and December 31, 1988, is considered Minnesota approved if it has full or contingent EPA approval, and the site supervisor or worker completed the course within one year of application; and

(d) for purposes of applications submitted on or after January 1, 1989, a training course must meet the additional criteria for training courses in part 7005.1618 to be Minnesota approved.

B. An applicant who meets the requirements of this subpart and subpart 3 shall be issued a written Minnesota asbestos abatement site supervisor or worker certificate. For certificates issued on or after January 1, 1989, the date of issuance of the certificate is the date the applicant successfully completes the Minnesota approved training course.

Subp. 3. **Additional training or experience requirements.** On and after Janu-

ary 1, 1989, to be eligible for certification as a site supervisor or worker, a person applying for certification must submit the information described in subpart 2 and also show evidence of completion of one of the following:

A. two years of attendance in an apprenticeship program within the construction industry which is either approved by the state of Minnesota, Department of Labor and Industry, Division of Voluntary Apprenticeship, or registered with the United States Department of Labor, Bureau of Apprenticeship and Training;

B. successful completion of a construction industry vocational technical program of not less than 18 months; or

C. work experience of at least 2,000 hours within the commercial or industrial building construction industry, verified in a notarized statement detailing the hours worked, provided by either the employer or the labor organization involved.

Subp. 4. **Denial of site supervisor or worker certification application.** An application for site supervisor or worker certification may be denied for any of the reasons for denying a license, listed in part 7005.1613, subpart 3. An applicant shall be notified in writing of the denial and the reasons for the denial. A person who resubmits an initial application is not required to pay a second fee.

Subp. 5. **Annual renewal of certification.** The certificate is effective for one year unless the commissioner suspends or revokes it. Renewal certificates shall be issued to qualified applicants.

A. The commissioner may renew a certificate if the certificate holder submits a completed, approvable renewal application at least 30 but not more than 60 days before expiration of the existing certificate.

Failure to submit the properly completed application materials at least 30 days before the certificate expiration date may result in lapse of the certificate.

B. Certificate holders applying for renewal of the license shall submit the following:

(1) a properly completed renewal application on a form provided by the commissioner;

(2) a nonrefundable $50 renewal application fee in the form of a check, payable to the Treasurer, State of Minnesota; and

(3) for site supervisors, evidence of attendance and successful completion of a Minnesota approved refresher training course for contractors and site supervisors; and for workers, evidence and successful completion of a Minnesota approved refresher training course for workers. The criteria for Minnesota approved refresher training courses are described in part 7005.1618.

C. An application for renewal of certification may be denied for any of the reasons for denying an asbestos abatement contractor license in part 7005.1613, subpart 3. The applicant shall be notified in writing of the denial and the reasons for the denial.

Subp. 6. **Procedures for obtaining duplicate site supervisor or worker certificate.** The commissioner may issue a duplicate certificate to replace a lost, destroyed, or mutilated certificate. The certificate holder shall submit a properly completed application for a duplicate certificate on a form provided by the commissioner. A duplicate certificate shall have "duplicate" stamped on the face and shall bear the same number and expiration date as the original certificate.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

7005.1615 ASBESTOS ABATEMENT CONTRACTOR RESPONSIBILITIES.

Subpart 1. **Advance notification and payment of one percent project fee before beginning asbestos related work.**

A. At least 20 calendar days before beginning asbestos related demolition projects and five calendar days before beginning asbestos related renovation projects, the licensed asbestos abatement contractor must submit to the commissioner the following:

(1) a properly completed Notification of Intent to Perform an Asbestos Abatement Project Form;

(2) a check in the amount of the project fee described under item C, payable to the Treasurer, State of Minnesota; and

(3) a copy of a signed summary of the costs of the asbestos abatement contract.

Once the asbestos abatement contractor pays the fee required under this subpart, the commissioner shall issue a project permit to the asbestos abatement contractor.

For emergency renovation or demolition projects, notification and fee requirements are described in item E.

B. If at any time during the asbestos related work the information reported on the notification form changes, an amended notification form must be filed with the commissioner. The amended notification form is a properly completed notification form with the changes from the original version highlighted. An amended notification form must be filed as soon as possible, but no later than the end of the project.

C. For each asbestos related work project, the licensed asbestos abatement contractor shall pay to the department a project fee equal to one percent of the total cost of the asbestos project. The total cost of the asbestos project includes the cost of abatement area preparation, decontamination, installations, enclosures, alterations, removal abatement, and repairs; including, for example, wages, materials, waste disposal, associated environmental monitoring, profit, performance bond, insurance, and administrative overhead. The total cost of the asbestos project does not include the cost of reinsulation.

If the final invoice amount charged to the contracting entity for the asbestos related work exceeds the total cost of the asbestos project previously reported on the notification form, additional fee payment in the amount of one percent of that difference must be submitted to the department. Within five working days after submission of the final invoice to the contracting entity, the asbestos abatement contractor must submit the additional fee, evidence of the final invoice amount, and an amended notification form. The department shall issue a refund in the event of an overpayment of the project fee.

D. In the special case of a company conducting in house asbestos related work, where costs may be difficult to itemize for fee calculation, the total cost of the asbestos related work project may be estimated and the fee paid as follows:

(1) The responsible individual shall prepare an estimate of the cost of the asbestos related work project. The estimate must include the cost of work area preparation, decontamination, installations, enclosures, alterations, removal abatement, repairs, wages, materials, waste disposal, associated environmental monitoring, administrative overhead, and a contingency figure that is 20 percent of the total of the above items. The company shall pay a project fee equal to one percent of the estimated total cost. The total cost of the asbestos project does not include the cost of reinsulation.

The initial estimate of the cost of the asbestos related work must include all planned asbestos related work performed in one facility during a period of one year or less. After the expiration of the designated project time period, if the final cost of all asbestos related work completed during that time period exceeds the estimate of the total cost previously reported on the notification form, additional fee payment in the amount of one percent of that difference must be submitted to the department within five working days after the determination of the final

asbestos related work cost. The responsible individual must submit the additional fee, evidence of final cost determination, and an amended notification form. The department shall issue a refund in the event of an overpayment of the project fee.

(2) At least 20 days before beginning asbestos related demolition work, and at least five days before beginning asbestos related renovation work, the asbestos abatement contractor must submit the following:

(a) a check in the amount of the project fee, payable to the Treasurer, State of Minnesota;

(b) a copy of the estimate of the total cost of the asbestos project; and

(c) a copy of the completed notification form.

E. For emergency demolition projects, the asbestos abatement contractor must submit to the commissioner a completed Notification of Intent to Perform Asbestos Abatement Project form, project permit fee, and the condemnation order as soon as possible before demolition begins. For emergency renovation projects, the asbestos abatement contractor must submit to the commissioner a completed Notification of Intent to Perform Asbestos Abatement Project form and project permit fee as soon as possible before renovation begins. Certain emergency renovation work in industrial facilities must initiate in nonstandard business hours and therefore must be reported during the next day state offices are open.

If the final invoice amount charged to the contracting entity for the emergency demolition or emergency renovation project exceeds the total cost of the asbestos project reported on the notification form, additional fee payment is due as described under item C.

Subp. 2. **Posting the work site.** The asbestos abatement contractor shall post in a conspicuous place outside of the abatement area a copy of the sign provided by the commissioner which states in letters four or more inches high: LICENSED BY THE STATE OF MINNESOTA FOR ASBESTOS WORK. A copy of the project permit issued under subpart 1, item A, must be posted in a conspicuous place at the worksite upon receipt from the commissioner. The actual license of the asbestos abatement contractor or a copy certified by the commissioner must be readily available for inspection.

Subp. 3. **Records.** The following records must be compiled for each asbestos related work project and must be readily available for review by the commissioner. These records must be retained by the asbestos abatement contractor for 30 years after completion of the project.

A. A daily sign in and sign out log that identifies individuals at the abatement area by name, certificate number, and length of time in the abatement area.

B. A copy of the detailed asbestos abatement plan for the work site, developed in accordance with part 7005.1616, subpart 3, item A.

C. Records of all on-site air monitoring required under part 7005.1616, subpart 4, item F, including calibrations, sampling methods, volume flow rate, time sampled, and analytical results.

D. A listing of each of the other employers on the site who have been informed of the nature of the asbestos abatement contractor's asbestos related work, according to Code of Federal Regulations, title 29, section 1926.58(d).

Subp. 4. **Information provided to the contracting entity.** At the time a bid for asbestos related work is submitted, the asbestos abatement contractor shall provide the following information to the contracting entity:

A. evidence that the asbestos abatement contractor holds a current Minnesota asbestos abatement contractor license;

B. a copy of the asbestos abatement plan that meets the requirements of part 7005.1616, subpart 4, item A; and

C. a copy of a statement provided by the commissioner regarding bonding and liability insurance.

Subp. 5. **Use of qualified personnel.**

A. On and after January 1, 1989, the asbestos abatement contractor shall employ only workers and site supervisors with valid, current Minnesota certificates to conduct asbestos related work. The asbestos abatement contractor shall ensure that a current certificate plus current photo identification, such as a driver's license or other dated identification card, of each employee engaged in asbestos related work at the work site, is available at the work site to enable the commissioner to verify the identity and certification of each employee at the work site.

B. On and after January 1, 1989, the asbestos abatement contractor shall ensure that a certified site supervisor is present at the work site during all work shifts of the asbestos abatement workers.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

7005.1616 STANDARDS FOR ASBESTOS RELATED WORK.

Subpart 1. **Applicability.** This part applies to all asbestos related work except certain defined areas of industrial facilities.

A. When the responsible individual of an industrial facility, as defined in part 7005.1612, subpart 25, has demonstrated to the commissioner through reliable environmental sampling data that the background level of dust or non-asbestos fibers in a defined area of that facility in which asbestos related work is to be performed exceeds 0.01 f/cc and that the establishment of an alternative indoor air standard and an alternative clearance air level under the provisions in subpart 3, items D and E, are not technically feasible, then this defined area of the industrial facility is known as a high dust area and is exempt from the provisions of subparts 2 and 3, and exposure limits shall be controlled by Code of Federal Regulations, title 29, sections 1910.1001 and 1926.58.

B. Asbestos related work involving the enclosure, removal, or encapsulation of asbestos containing material that is located outside the foundation, curtain walls, or roof of a facility and is above grade is exempt from the provisions of this part and is instead controlled by Code of Federal Regulations, title 29, sections 1910.1001 and 1926.58.

Subp. 2. **Indoor air standards.** The following minimum air standards for asbestos related work do not replace or supersede more stringent standards or contractual agreements, whenever applicable.

A. Fibers remaining in the air in the abatement area following the completion of an asbestos abatement project must not exceed 0.01 fibers per cubic centimeter (f/cc) of air as analyzed by phase contrast microscopy, counting fibers with a length to width ratio equal to or greater than 3:1 and greater than five microns in length or the alternative clearance air level established pursuant to subpart 3, item D. This is referred to as the clearance air level. Sampling and analysis must be conducted according to subpart 3 and subpart 4, item F, subitem (3).

B. Where asbestos related work is conducted in a building occupied by persons not involved in asbestos related work, asbestos levels measured in indoor air outside the abatement area during the asbestos related work must not exceed the clearance air level.

Except as provided in item C, if, during the asbestos related work, the fiber concentration in air measured outside an abatement area exceeds the clearance air level, the asbestos abatement contractor shall evacuate any occupied area immediately adjacent to the abatement area and any other areas outside the

abatement area where fiber levels exceed the limit stated in this paragraph, to protect members of the public and nonabatement personnel. However, in an industrial facility where nonabatement personnel are essential for maintaining safe operation of processes located within the evacuation affected area, the procedures in Code of Federal Regulations, title 29, sections 1910.1001 and 1926.58, shall apply. Evacuated areas shall not be reoccupied until corrective measures have been taken and documented, and each of five air samples collected in accordance with subpart 3 show that fiber levels no longer exceed the clearance air level.

C. If the asbestos abatement contractor has good reason to believe that elevated fiber levels are the result of non-asbestos dust in the air, the asbestos abatement contractor or employer may delay evacuation of the occupied areas in question, provided that the following actions are taken immediately:

(1) the asbestos abatement contractor must repeat analysis of samples analyzed in item B to distinquish between asbestos and non-asbestos fibers greater than five microns in length with an aspect ratio of 3:1; and

(2) the repeat analysis under this item must meet the requirements of "Mandatory Transmission Electron Microscopy Method," Code of Federal Regulations, title 40, part 763, subpart E, appendix A, section II, Parts A, E, F, H, I, and J, as provided by the Federal Register, volume 52, pages 41857 to 41870, October 30, 1987, and as qualified in this subitem.

(a) Part A is amended as follows:

i. The definition of "aspect ratio" is amended to read:

"3. 'Aspect Ratio' — a ratio of the length to the width of a particle. Minimum aspect ratio as defined by this method is equal to or greater than 3:1."

ii. The definition of "fiber" is amended to read:

"9. 'Fiber' — a structure greater than or equal to five microns in length with an aspect ratio (length to width) of 3:1 or greater and having substantially parallel sides."

(b) Part F is amended as follows:

i. Paragraph 9(a) is amended to read:

"9. Recording Rules.

a. Any continuous grouping of particles in which an asbestos fiber with an aspect ratio greater than or equal to 3:1 and a length greater than or equal to 5.0 microns is detected shall be recorded on the count sheet. These will be designated asbestos structures and will be classified as fibers, bundles, clusters, or matrices. Record as individual fibers any contiguous grouping having 0, 1, or 2 definable intersections. Groupings having more than 2 intersections are to be described as cluster or matrix. An intersection is a nonparallel touching or crossing of fibers, with the projection having an aspect ratio of 3:1 or greater. See the following Figure 2:"

ii. Paragraph 9(a), figure 2, the portion entitled "DO NOT COUNT AS STRUCTURES," is amended by changing the aspect ratio from "5:1" to "3:1" and the micrometer length from "0.5" to "5.0".

iii. Paragraph 9(a)(i) is amended to read:

"i. Fiber. A structure having minimum length greater than or equal to 5 microns and an aspect ratio (length to width) of 3:1 or greater and substantially parallel sides. Note the appearance of the end of the fiber, i.e., whether it is flat, rounded, or dovetailed."

iv. Paragraph 10(a) is amended to read:

"a. Fiber. A structure having minimum length greater than or equal to 5 microns and an aspect ratio (length to width) of 3:1 or greater and substantially parallel sides. Note the appearance of the end of the fiber, i.e., whether it is flat, rounded, or dovetailed."

(3) If any of the analysis results by transmission electron microscopy show that the asbestos air concentration exceeds 0.01 f/cc of air, counting fibers with a length to width ratio equal to or greater than 3:1 and greater than five microns in length, the asbestos abatement contractor shall evacuate the occupied area in question to protect members of the public and nonabatement personnel. However, in an industrial facility where nonabatement personnel are essential for maintaining safe operation of processes located within the evacuation affected areas, the procedures in Code of Federal Regulations, title 29, sections 1910.1001 and 1926.58, shall apply. Evacuated areas shall not be reoccupied until corrective measures have been taken and documented, and each of five air samples collected in each evacuated area, in accordance with subpart 3, items A, B, and C, show that fiber levels no longer exceed the 0.01 f/cc limit.

D. Before beginning asbestos related work, if the asbestos abatement contractor has good reason to believe that asbestos, or fiber, levels in the air entering the abatement area from outdoors or from other parts of the building outside of the abatement area exceed 0.01 f/cc, the asbestos abatement contractor may establish an alternative indoor air standard and an alternative clearance air level, provided that the requirements prescribed under subpart 3, items A, D, and E, are met.

Subp. 3. **General requirements for sampling and analysis.** All air monitoring shall meet the following minimum criteria. These criteria do not replace or supersede more stringent standards or contractual agreements.

A. Air sampling must be conducted under the direction or control of a certified industrial hygienist or an individual who has successfully completed the National Institute for Occupational Safety and Health (NIOSH), course number 582, entitled Sampling and Identification of Airborne Asbestos, or another suitable course as determined by the commissioner.

B. When air sample analysis is by phase contrast microscopy, the following shall apply:

(1) Sampled air volumes must be sufficient to accurately determine fiber concentrations to 0.01 f/cc.

(2) For each sample, either a minimum volume of 2,000 liters shall be collected, or an alternative volume shall be collected according to the following guidelines.

When a sample with a volume lower than 2,000 liters is collected, it may be necessary to count more fields than the 100 microscope field maximum which is specified in NIOSH method 7400. The maximum number of fields to count is determined by dividing 2,000 liters by the volume filtered and multiplying the result by 100 fields. Additional segments of the filter will need to be used. If the cumulative fiber count reaches 100 fibers before the maximum number of fields have been counted, the analysis stops, and the concentration is calculated based on the number of fibers and the number of fields which have been counted. If the cumulative fiber count has not reached 100 fibers before the calculated maximum number of fields has been counted, the analysis stops and the concentration is calculated based on the number of fibers and the number of fields which have been counted. Adherence to these guidelines ensures that fiber concentrations of 0.01 f/cc will be analyzed with an approximate theoretical precision of plus or minus 16 percent based on the Poisson distribution model.

(3) Sampling and analysis methods must comply with NIOSH Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987; or equivalent methods. This document is not subject to frequent change and is incorporated by reference and available at the State Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota 55155.

(4) Analysis shall be conducted by a laboratory considered proficient

in asbestos analysis by the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program for phase contrast microscopy.

C. Sample analysis shall be requested to be performed on a priority basis to ensure prompt reporting of results. Samples must be submitted for analysis on the day they are collected. The contract for sample analysis shall specify that the analysis results shall be available orally or in writing as soon as possible, and no later than 48 hours after submission.

D. To establish an alternative clearance air level to the 0.01 f/cc limit by phase contrast microscopy under subpart 2, item A, analysis shall be by transmission electron microscopy (TEM), and sampling and TEM analysis shall comply with the requirements of "Mandatory Interpretation of Transmission Electron Microscopy Results to Determine Completion of Response Actions," Code of Federal Regulations, title 40, part 763, appendix A, section IV, as provided by the Federal Register, volume 52, pages 41893 to 41897, October 30, 1987; or equivalent methods. In an industrial facility process area, an alternative clearance air level may be established using either phase contrast microscopy or transmission electron microscopy provided that an alternative indoor air standard has been established for the area according to item E.

E. To establish an alternative indoor air standard to the 0.01 f/cc limit by phase contrast microscopy prescribed under subpart 2, item B, an average and range of airborne concentrations shall be determined by collecting simultaneously a minimum of five air samples and calculating the upper bound of the range defined by the 95 percent confidence interval from the average before any asbestos related work begins, using the sampling and phase contrast microscopy analysis methods of items A, B, and C. Sampling locations must be indoors, and within ten feet of the planned abatement area. Sampling locations must be selected to provide suitable data for comparison with air samples collected after the asbestos related work begins.

In an industrial facility process area, an alternative indoor air standard may be established using either phase contrast microscopy or transmission electron microscopy provided that, at least every three months, a minimum of five simultaneous air samples are collected and analyzed according to the requirements of subpart 2, item C, subitem (2), and the background level of asbestiform fibers versus nonasbestiform fibers is determined. The air samples must be representative of the air in the vicinity of the planned abatement area to which the indoor air standard is applied.

Subp. 4. **Required procedures for asbestos related work.** Asbestos related work must meet the following minimum criteria. The criteria do not replace or supersede more stringent standards or contractual agreements.

A. A written asbestos abatement plan must be prepared which describes the equipment and procedures to be used throughout the asbestos related work project. At a minimum, the asbestos abatement plan must contain the following information:

(1) a physical description of the work area;

(2) a description of the approximate amount of asbestos containing material to be removed, encapsulated, or enclosed;

(3) a schedule for shutting down and locking out electric power and heating, ventilating, and air conditioning equipment to all work areas and sealing existing ventilation systems;

(4) personnel hygiene procedures;

(5) labeling procedures;

(6) a description of personal protective equipment and clothing to be worn by employees;

(7) a description of the local exhaust ventilation systems to be used;

(8) a description of work practices to be observed by employees;

(9) a description of the methods to be used to remove, encapsulate, and enclose asbestos containing material;

(10) a description of the wetting agents, encapsulants, and sealants to be used;

(11) a description of the air monitoring plan; and

(12) a description of the method of transporting waste material.

B. Preparation of the work area must meet the following requirements:

(1) Removal, enclosure, or encapsulation of asbestos containing material is a major operation for purposes of compliance with Code of Federal Regulations, title 29, section 1926.58, and must be done, where feasible in industrial facilities, in a negative pressure enclosure with a contiguous decontamination enclosure system. However, for the portion of an asbestos related project that includes removal of less than ten feet of pipe lagging or less than six square feet of asbestos containing material per room, the asbestos abatement contractor may use, as an alternative, the glove bag or mini enclosure procedures in subpart 5. The commissioner may approve exceptions to the procedures specified in this subitem, on a case by case basis, where space limitations prohibit the construction of the enclosure, or where the construction of a negative pressure enclosure would create a greater hazard, for example where toxic gases are present in the area.

(2) All heating, ventilating, and air conditioning intake and exhaust openings in the abatement area and any seams in system components must be sealed with 6-mil polyethylene sheeting or comparable material and tape. All system filters that serve the abatement area must be replaced at the conclusion of the abatement project and disposed of as asbestos waste. The interior surfaces of ventilation system ductwork must be decontaminated whenever necessary.

All openings between the abatement area and uncontaminated areas, including windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, and skylights, and all penetrations of the floors, walls, and ceilings, including penetrations around electrical conduits, telephone wires, water supply pipes, and drain pipes must be sealed with 6-mil polyethylene plastic or comparable material and tape.

(3) Surfaces in the abatement area which are to be in contact with the containment barriers must be precleaned, using HEPA filtered vacuuming and wet cleaning methods, before the barriers are constructed.

(4) All movable objects must be removed from the abatement area before abatement begins. When movable objects are contaminated or are suspected of being contaminated, they must be vacuumed with a HEPA vacuum and wet cleaned or disposed of as asbestos waste. Objects that cannot be removed from the abatement area must be covered with a 6-mil polyethylene plastic sheeting or comparable material that is securely taped to achieve an airtight seal around the object.

(5) Containment barriers must be constructed to separate and isolate the abatement area from the rest of the building and the outdoors, and to enclose the abatement area.

At a minimum, floor sheeting must consist of two layers of 6-mil polyethylene plastic sheeting or comparable material, must extend up side walls at least 12 inches, and must be sized to minimize seams. No seams shall be located at wall or floor joints.

At a minimum, wall sheeting must consist of 4-mil polyethylene plastic sheeting or comparable material, must extend beyond wall or floor joints at least 12 inches, and must be sized to minimize seams. No seams shall be located at wall or floor joints.

(6) A worker decontamination enclosure system must be provided, where feasible in industrial facilities, consisting of, at a minimum, a clean room, shower room, and equipment room, each separated from the other and from the work area by airlocks and accessible through doorways protected with two overlapping sheets. Procedures for using this system must be established. The procedures must prevent contamination of areas outside the abatement area.

(7) Negative pressure within the enclosure must be established as follows:

(a) A ventilation system must be installed to create a negative pressure within the enclosure with respect to the area outside the enclosure. The ventilation system must be equipped with HEPA filtration to prevent the release of asbestos fibers outside the enclosure. The ventilation system must be operated continuously for the duration of the project, until the final cleanup is completed and acceptable clearance air monitoring results are obtained. Whenever feasible, the ventilation system must be positioned to exhaust filtered air to the outside of the building.

(b) At a minimum, each HEPA filtered ventilation system must be equipped with the following:

i. a calibrated pressure gauge;

ii. a built-in mechanism for automatic unit shut-down in the event of a breach in the filter or in the absence of a filter;

iii. an audible alarm if the ventilation system shuts down; and

iv. a built-in mechanism to ensure the ventilation system will not operate unless it is positioned correctly.

(c) The air pressure within the enclosure must be established and maintained as follows:

i. From the time construction of the enclosure is completed through the time acceptable clearance air monitoring results are obtained, a sufficient amount of air must be exhausted to create a pressure of -0.02 inches of water within each enclosure with respect to the area outside of the enclosure. The amount of air exhausted must provide at least four air changes per hour, based on no more than 75 percent of the operating maximum cubic feet per minute discharge for the ventilation system. A manometer or pressure gauge equipped with a recording device must be used continuously to establish, monitor, and document negative pressure within the enclosure, and must remain in place until the area passes final clearance air testing. The manometer or pressure gauge must be monitored frequently throughout all abatement work shifts and must be zeroed and calibrated before work begins each day. A nonrecording manometer or pressure gauge may be substituted for a continuously recording instrument provided that hourly pressure readings are documented during all work shifts. Placement of the manometer or pressure gauge must be as far from the intake of the HEPA filtered ventilation system as practicable and selected to ensure that the reading is of the abatement area.

ii. Where the asbestos abatement contractor is unable to establish and maintain a pressure of -0.02 inches of water within the enclosure, a pressure as close to -0.02 inches of water as possible must be established and maintained, from the time barrier construction is completed through the time acceptable clearance air monitoring results are obtained. A sufficient amount of air must be exhausted to provide at least six air changes per hour, based on no more than 75 percent of the operating maximum cubic feet per minute discharge for the ventilation system.

(8) During asbestos related work, warning signs in accordance with Code of Federal Regulations, title 29, section 1926.58(k) shall be displayed at all approaches to any location where airborne fiber levels can be expected to exceed the clearance air level.

(9) All vacuuming equipment used for asbestos related work must be HEPA filtered.

C. In addition to the general requirements for all asbestos related work under items A and B, the following specific abatement procedures apply to removal, encapsulation, or enclosure operations.

(1) Removal operations must proceed as follows:

(a) Components covered with asbestos containing material that are to be removed must be removed intact or in large sections whenever possible and carefully lowered to the floor.

(b) Asbestos containing material must be removed in small sections and placed in containers while wet. Material must not be allowed to dry. Structural components must be thoroughly wetted and sealed in 6-mil polyethylene sheeting or comparable material before disposal.

(c) Prior to the final inspection prescribed under item E, the asbestos abatement contractor must notify the contracting entity of any asbestos containing material that was contracted to be removed, but was left in place because it was inaccessible. If the contracting entity agrees that the material removal is not feasible, then the asbestos containing material left in place must be encapsulated or enclosed. If encapsulated, the encapsulating material must be dyed a contrasting color.

The enclosed or encapsulated asbestos containing material must be specially designated according to Code of Federal Regulations, title 29, section 1926.58(k)(2), to warn individuals who may disturb the area. These inaccessible areas must be recorded on a building plan, sketch, or written description provided to the contracting entity by the asbestos abatement contractor.

(d) For porous surfaces stripped of asbestos containing materials, a coating of encapsulating agent must be applied after the area has passed the visual inspection required under item E, to securely seal any residual fibers. The encapsulating agent must be compatible with subsequent coverings. The encapsulation procedure must comply with subitem (2).

(e) Metal or fiber drums with locking ring tops must be used for disposal of asbestos containing waste material that contains sharp edges, unless the sharp edges can be covered or blunted.

(2) Encapsulation operations must meet the following requirements:

(a) Any loose or hanging asbestos containing material must be removed according to subitem (1).

(b) Filler material applied to gaps in existing material must contain no asbestos, adhere well to the substrate, and provide an adequate base for the encapsulating agent.

(c) Encapsulants must be applied using only airless spray equipment with air pressure and nozzle orifice as recommended by the encapsulant manufacturer.

(d) Encapsulants must not be solvent based or use a vehicle consisting of hydrocarbons.

(e) Encapsulated asbestos containing materials must be specially designated according to Code of Federal Regulations, title 29, section 1926.58(k)(2), to warn individuals who may disturb the material.

(3) Enclosure operations must meet the following requirements:

(a) Any asbestos containing materials that will be disturbed during the installation of hangers, brackets, or other portions of the enclosure must be sprayed with amended water.

(b) Any loose or hanging asbestos containing material must be removed in accordance with the requirements of subitem (1).

(c) A permanent enclosure constructed as an alternative to removal or encapsulation must consist of a permanent barrier with impermeable sides, designed to minimize air movement across the enclosure boundary. The permanent enclosure must render the area behind it inaccessible and must be specially designated according to Code of Federal Regulations, title 29, section 1926.58 (k)(2), to warn individuals who may disturb the enclosure.

(4) For demolition operations, clearance air sampling, as required under item F, subitem 3, is only required if the area in which abatement occurred will be used before demolition by persons not involved in asbestos related work. Under this exception, all surfaces not subject to aggressive air sampling methods must be encapsulated, after postcleaning in compliance with item D is complete, and after the area has passed the visual inspection required under item E.

All other provisions of these rules apply to demolition operations.

D. After the asbestos abatement is complete, the entire abatement area shall be cleaned, using HEPA vacuuming and wet cleaning methods, until no asbestos dust is visible.

E. The asbestos abatement contractor must conduct a final, visual inspection of the abatement area that meets the following requirements:

(1) The asbestos abatement contractor must perform the final, visual inspection inside the abatement area after it has been cleaned and has dried completely. Any residue observed in the area is considered to be asbestos, and the sequence of cleaning and inspection must be repeated as prescribed by items E and F until the area passes the final, visual inspection.

(2) A checklist for the visual inspection, comparable to Code of Federal Regulations, title 29, section 1926.58, appendix F, figure F-7, must be used. At a minimum, the visual inspection must consist of the following two tests:

(a) The asbestos abatement contractor must examine surfaces for visible dust and debris, using a dark, damp cloth to collect the dust from these surfaces and then inspecting the cloth for evidence of dust. Particular attention must be given to horizontal surfaces.

(b) If possible, the asbestos abatement contractor shall reduce the lighting in the abatement area and inspect the area for residue using a flashlight to illuminate any smooth horizontal surface, and running a finger across the illuminated area, noting if a line is left on the surface.

If an alternative clearance air level has been established pursuant to subpart 3, item D, and compliance with this procedure is not feasible, then the asbestos abatement contractor shall conduct a final, visual inspection of the abatement area to ensure that all surfaces are free of visible dust before the final air samples are collected.

F. The asbestos abatement contractor must comply, except as noted in subpart 1, with the indoor air standards under subpart 2, and general requirements for sampling and analysis under subpart 3, and the following specific air sampling requirements:

(1) Where asbestos related work is performed in a building occupied by persons not involved in asbestos related work, indoor air monitoring must be conducted outside the abatement area on a daily basis. For each abatement area, a minimum of two samples must be collected during each work shift that the building is occupied by persons not involved in asbestos related work. Sampling must be performed within ten feet of the abatement area, in areas selected to detect failures in the containment barriers.

(2) Whenever a HEPA filtered ventilation system is exhausted to the indoors during asbestos related work, asbestos air concentrations must be monitored daily in the vicinity of the exhaust.

(3) Clearance air sampling in the abatement area must meet the following requirements:

(a) Clearance air sampling must be conducted within the abatement area after it has been cleaned thoroughly, dried completely, and passed the final, visual inspection under item E. Critical containment barriers, including barriers over all windows, doors, and air passageways, must remain in place until analysis of clearance air samples is completed and the notification of the contracting entity under item C occurs.

The abatement project is not complete until all clearance air samples collected are less than or equal to the clearance air level. If any of the sampling results exceed this level, the area shall be recleaned according to item E and clearance air sampling must be repeated. Cleaning and resampling must be repeated, at intervals of no less than 24 hours, except within an industrial facility process area, until all samples collected in the abatement area meet the clearance air level.

(b) A minimum of five clearance air samples must be collected simultaneously within each enclosed abatement area. The sampling sites must be selected on a random basis to provide unbiased and representative samples.

Clearance air sampling must be done with equipment that has been cleaned and properly decontaminated before use. Sampling must be conducted under aggressive sampling conditions. Aggressive sampling conditions consist of the following minimum steps:

i. Prior to air monitoring, floors, ceilings, and walls must be blown with the exhaust of, at a minimum, a one horsepower leaf blower.

ii. Stationary fans must be placed in locations that do not interfere with air monitoring equipment. Fan air must be directed toward the ceiling. One fan shall be used for each 10,000 cubic feet of abatement area.

iii. If electrical power is provided by extension cords and strip plug units, the power supply equipment must be underwriter laboratory approved and not modified. Wiring must be grounded, and ground fault interrupters must be used.

iv. Equipment such as fans and pumps must be carefully wet wiped with clean water and disposable wipes before removal from the abatement area.

G. The asbestos abatement contractor must report the results of the final, visual inspection and clearance air sampling under aggressive conditions to the contracting entity. Critical containment barriers over all windows, doors, and air passageways must remain in place until the contracting entity grants permission to remove the barriers.

H. Following removal of the critical containment barriers, the asbestos abatement contractor must inspect all surfaces previously in contact with the barriers to ensure that no surface contamination is visible. Whenever contamination is observed, the entire area must be cleaned, using HEPA vacuuming and wet cleaning methods, until no contamination is visible. If an alternative clearance air level has been established pursuant to subpart 3, item D, and good cause exists to conclude that the contamination is due to ambient dust not associated with asbestos containing materials in an industrial facility, further cleaning is not required.

Subp. 5. **Optional glove bag or mini enclosure procedures for certain jobs performed during asbestos related work.** When an asbestos abatement work project includes removal of less than ten feet of pipe lagging or less than six square feet of asbestos containing material per room, for that portion of the project, the asbestos abatement contractor may opt to use the following minimum procedures as alternatives to the procedures in subpart 4, items B to H. The asbestos abatement contractor shall comply with the indoor air standards under subpart 2, and general requirements for sampling and analysis under subpart 3, except as noted in subpart 1.

A. The following minimum procedures must be followed:

(1) Glove bags must be constructed of transparent 6-mil polyethylene plastic or comparable material. Glove bags may not be used more than once. Sliding or moving the glove bag during the abatement procedure is not permitted.

(2) The glove bag must completely cover the area where asbestos work is to be done. Before abatement begins, all openings in the glove bag, including any openings from insertion of tools, sprayer, or a HEPA filter equipped vacuum nozzle, must be securely sealed with duct tape or equivalent material.

(3) A mini enclosure must be constructed of 6-mil polyethylene plastic sheeting or comparable material, and equipped with an HEPA filtered vacuum or portable ventilation system with HEPA filtration to create a negative pressure within the mini enclosure with respect to the area outside the mini enclosure. Negative pressure within the mini enclosure must be maintained until acceptable clearance air monitoring results indicate that the mini enclosure procedure is complete.

(4) Workers working inside the mini enclosure must, before leaving the mini enclosure, remove and properly bag for disposal their outer layer of protective clothing or vacuum their outer protective clothing with a HEPA filtered vacuum cleaning machine.

(5) A remote worker decontamination enclosure system must be provided for and used by any worker performing abatement work in a glove bag or a mini enclosure during asbestos related work projects. Procedures for the use of this system must be established which prevent asbestos contamination outside the glove bag or mini enclosure system.

(6) Warning signs according to Code of Federal Regulations, title 29, section 1926.58(k), must be displayed at all approaches to any location where airborne fiber levels can be expected to exceed the clearance air level.

(7) The surface from which asbestos has been removed must be thoroughly cleaned until no trace of asbestos containing material is visible.

(8) Asbestos containing material exposed as a result of the abatement activity must be encapsulated so that the edges do not release asbestos fibers to the atmosphere when the glove bag or mini enclosure is removed. Encapsulated asbestos containing materials must be specially designated according to Code of Federal Regulations, title 29, section 1926.58(k)(2), to warn individuals who may disturb the material.

(9) When the asbestos removal and encapsulation are complete, a vacuum hose from an HEPA filtered vacuum must be used to collapse the glove bag. When the air has been removed from the glove bag, the glove bag must be squeezed tightly as close to the top as possible, twisted, and sealed with tape, keeping the asbestos containing materials in the bottom of the glove bag. The glove bag must be sealed in a properly labeled bag or container for disposal.

(10) After the glove bag or mini enclosure operation is complete, the interior of the enclosure must be cleaned using an HEPA filtered vacuum and wet wiping techniques, or an encapsulant must be applied to the inside of the mini enclosure to seal any asbestos fibers or debris.

B. A final, visual inspection of the abated area must be performed before the mini enclosure is removed. The procedure is not considered complete until all visible friable asbestos containing material is either removed or encapsulated.

C. During removal operations with a glove bag or mini enclosure, a minimum of one indoor air sample must be collected within ten feet of the glove bag or mini enclosure asbestos abatement operation. If three or more previous similar abatement activities have occurred in the preceding year and all samples were below the clearance air level, the one minimum air sample is not required.

(1) Sampling and analysis must be conducted in compliance with subpart 3.

(2) The area where the glove bag or the mini enclosure procedure

was performed shall not be opened to persons not involved in asbestos related work until the indoor air samples collected are less than or equal to the clearance air level. If any of the sampling results exceed this level, the area shall be cleaned using a HEPA filtered vacuum cleaner and wet methods, and the indoor air sampling must be repeated.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

7005.1617 ENFORCEMENT ACTIONS.

Subpart 1. **General.** Under the Asbestos Abatement Act in Minnesota Statutes, sections 326.70 to 326.82, the commissioner can carry out enforcement actions, including inspections, suspension or revocation of a license or certificate, subpoenas, cease and desist orders, orders for corrective action, and actions for injunctive relief. Violators may also be charged with a misdemeanor, as authorized by the act.

Subp. 2. **Inspections.** The commissioner's designee may inspect asbestos related work projects as authorized by the Asbestos Abatement Act in Minnesota Statutes, sections 326.70 to 326.82. The commissioner's designee shall issue written notices of violations of the Asbestos Abatement Act, or parts 7005.1611 to 7005.1618, to the site supervisor or responsible person. Notices of violation shall specify the rule or statute violated, the nature of the violation, and the deadline for correction.

Subp. 3. **Suspension or revocation of license or certificate.** The commissioner may suspend or revoke a license or certificate as an alternative, or in addition to, other enforcement provisions of the Asbestos Abatement Act in Minnesota Statutes, sections 326.70 to 326.82, if the commissioner finds, after notice and opportunity for hearing in accordance with chapter 14 of Minnesota Statutes, that a licensee or certificate holder has committed serious or repeated violations of parts 7005.1611 to 7005.1618, or any provision of the Asbestos Abatement Act.

An order for suspension must indicate the time interval during which the suspension is in effect. After that time, the license or certificate may be renewed upon application by the license or certificate holder, according to the procedure in parts 7005.1613 and 7005.1614. An order for revocation shall indicate when and if application for a new license or certificate can be made.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

7005.1618 REQUIREMENTS FOR MINNESOTA APPROVAL OF ASBESTOS ABATEMENT TRAINING COURSES.

Subpart 1. **Acceptance of prior training courses for initial license or certificate application.** For purposes of license or certificate applications submitted before January 1, 1989, a training course taken between June 1, 1987 and December 31, 1988, is considered a Minnesota approved training course if it has full or contingent EPA approval, the license or certificate applicant completed the course within one year of application, and the course sponsor can verify successful completion of the training course.

Subp. 2. **Minnesota approval of initial training courses.** For purposes of license or certificate applications submitted on and after January 1, 1989, initial and refresher training courses for asbestos abatement contractors, site supervisors, and workers must meet the requirements in this part and must be approved by the commissioner in writing.

Subp. 3. **Application procedures for Minnesota approval.** Course sponsors seeking Minnesota approval of initial and refresher courses shall apply to the commissioner for approval.

A. Course sponsors must submit a properly completed application on a form provided by the commissioner that includes all application information required under Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section III.

B. At least 30 days before the start of the course, the course sponsor must inform the commissioner in writing of any asbestos training course to be conducted by the course sponsor. The course sponsor must permit representatives of the commissioner to attend, evaluate, and monitor any asbestos training course and course examinations at no cost. Representatives of the commissioner need not give advance notice of their attendance.

C. A training course must meet the requirements of subpart 3, and the course sponsor shall make the revisions required by the commissioner before presenting a training course.

Any significant change in the content of a Minnesota approved course must be reported in writing to the commissioner at least 30 days before presenting the changed course. Failure to report a significant change in course content in advance shall result in cancellation of training course approval.

Subp. 4. **Attendance requirements; enrollment limits; course content requirements.** For training courses to be Minnesota approved, they must meet the requirements in items A to J.

A. The course sponsor must require that course participants attend the entire training course as a condition for successful course completion. The course sponsor must maintain a daily course sign in log as documentation of attendance for each training course.

B. Enrollment for initial and refresher worker training courses shall not exceed 24. For any asbestos abatement contractor, site supervisor, or worker training course, a sufficient number of instructors must be used to ensure that participants are provided with proper training. Student to teacher ratio for the hands on training groups shall not exceed 8 to 1.

C. Training must be provided by instructors who are deemed qualified by the commissioner and who meet the following minimum criteria:

(1) An instructor must have experience in presenting and evaluating adult education programs.

(2) Demonstration and hands on training must be taught by individuals with work experience in all phases of asbestos abatement work on asbestos abatement projects.

(3) An instructor must have sufficient training and work experience to effectively present the assigned subject matter.

D. A training course must include written examinations that meet the following requirements.

(1) Effective January 1, 1989, all Minnesota approved training courses must use written examinations provided by the commissioner.

(2) All course examinations must be administered and monitored by the course sponsor.

(3) The course sponsor assumes responsibility for the security of exam contents and shall enforce necessary requirements to ensure that the participant passes the exam on the participant's merit. Minimum security measures for the written exams include an empty chair between each participant, no written materials allowed on the writing surfaces other than the examination materials, and supervision and monitoring of exam administration by the sponsor.

E. If any of the participants in an asbestos abatement worker training course are unable to read, the course sponsor must make provisions for those persons to have the course exam administered orally, on an individual basis, so that the participant passes the examination on the participant's merit.

F. For initial training courses, course length and content must meet the following requirements:

(1) At a minimum, the initial training course for asbestos abatement contractors and site supervisors must meet the initial training course requirements in Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section I(1)(D), and consist of a course which is at least four days in length. One day equals eight hours minus breaks and lunch.

(2) At a minimum, the initial training course for asbestos abatement workers must meet the initial training course requirements of Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section I(1)(E), and consist of a course which is at least three days in length. One day equals eight hours minus breaks and lunch.

G. Training must include lectures, demonstrations, hands on training with demonstration testing, individual respirator fit testing, course review, and a closed book examination. The hands on training must be at least six hours in length, must permit each participant to have actual experience performing the tasks associated with asbestos abatement, and must include simulating asbestos removal by removing asbestos substitute materials with adherent properties similar to asbestos from ceiling and pipe surfaces, demonstrating fit testing and use of suitable respiratory protection with at least six different respirator designs, using glove bags to simulate asbestos removal, donning full body protective clothing, and constructing a decontamination unit.

H. For a course participant to successfully complete the initial training course, the participant must first demonstrate proficiency to the instructor during the hands on portion of the course, and then pass a closed book, written examination, or oral examination for workers as allowed under item E, which meets the requirements of Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section I(2). On and after January 1, 1989, the written examination for Minnesota approved courses shall be provided by the commissioner.

Any participant who fails to pass the initial training course examinations fails the course and must repeat the course and examinations.

I. At a minimum, the annual refresher courses for asbestos abatement contractors, site supervisors, and workers must meet the refresher course requirements of Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section I(3), consisting of at least one eight hour day of training specifically tailored to asbestos abatement workers or asbestos abatement contractors and site supervisors, which includes changes in federal and state regulations, new developments in the state of the art procedures in asbestos abatement, and review of the key aspects of the initial training course.

J. On and after January 1, 1989, Minnesota approved annual refresher courses must include a closed book, written examination, or oral examination for workers as allowed under item E, provided by the commissioner. A participant who fails to pass the annual refresher examination fails the course and must repeat the course and examination.

Subp. 5. **Granting course approval.**

A. Provisional Minnesota approval shall be granted for an initial or refresher training course if the required information and documentation is submitted and is found to meet the requirements prescribed under this part. A letter shall be issued to the applicant stating that the course has provisional Minnesota approval, the date of issuance, and the date of expiration.

B. Full Minnesota training course approval shall be granted for a period of two years, after the commissioner grants provisional approval, conducts an on-site observation and evaluation of the training course, and determines that the applicant's asbestos training course meets the requirements of this part. A letter shall be issued to the applicant stating that the course is Minnesota approved, the date of issuance, and the date of expiration.

C. For out-of-state training programs presented on or after January 1, 1989, on-site observation and evaluation by the commissioner's designee may be waived for Minnesota approval if the course is approved by a state accreditation program that is comparable to the Minnesota program, and all other conditions prescribed under this part are met.

Subp. 6. **Cancellation of course approval.** The commissioner shall cancel training course approval if the commissioner finds that any of the criteria under this part are not met. The commissioner shall inform course sponsors in writing of the cancellation, the reasons for this action, and the conditions that must be met before reinstatement of course approval.

Subp. 7. **Renewal of course approval.** To renew full approval of a Minnesota approved training course, the applicant shall resubmit the information required in subpart 3. On-site observation is not required to renew a Minnesota approved course.

If a properly completed application for renewal is received at least 30 days but not more than 60 days before expiration of training course approval, the sponsor's course approval shall not expire until final action on the application has been taken by the commissioner.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

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 commissioner.

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*

History: *L 1987 c 186 s 15*

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 commissioner, 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 commissioner 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 commissioner 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 commissioner 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. **Combined or separated 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 commissioner 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 commissioner 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*

History: *L 1987 c 186 s 15*

7005.1860 PERFORMANCE TESTS.

Subpart 1. **Testing requirements.** The agency or the commissioner 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 commissioner 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 commissioner shall specify. The owner or operator shall make available to the commissioner such records as may be necessary to determine the conditions of the performance tests. Operations during periods of start-up, 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 commissioner 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 commissioner'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 commissioner not less than 30 days prior to conducting any performance tests, unless a shorter time is accepted by the commissioner.

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 start-up, 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 commissioner, 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 commissioner in ordering the running of the performance tests.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner 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 start-ups, 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 start-up, 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, start-up, breakdown, malfunction, or inoperation. These records shall be submitted to the agency at such times as the commissioner 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*

History: *L 1987 c 186 s 15*

7005.1880 SHUTDOWNS AND BREAKDOWNS.

Subpart 1. **Shutdown.** The owner or operator of an emission facility shall notify the commissioner 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 commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the commissioner when the shutdown is over.

Subp. 2. **Breakdown.** The owner or operator of an emission facility shall notify the commissioner 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 commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the commissioner 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 commissioner 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 commissioner of any breakdown or malfunction of such system or device.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner 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*

History: *L 1987 c 186 s 15*

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 commissioner 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 commissioner 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*

History: *L 1987 c 186 s 15*

7005.2150 PERFORMANCE TEST METHODS.

Subpart 1. **In general.** Unless another method is approved by the commissioner, 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*

History: *L 1987 c 186 s 15*

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 commissioner.

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*

History: *L 1987 c 186 s 15*

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 commissioner.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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:

$$S_d = (60 \times 10^{-3}) \frac{R_{dv}S_v}{T} \text{ (Metric Units)}$$

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);

60×10^{-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:

$C_{aw} = C_s Q_3$ (metric or English units)

where:

C_{aw} = Particulate matter mass emissions, mg/hr (English units: lb/hr).

C_s = Particulate matter concentration, mg/m³ (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:

$$C_{ds} = (10^{-3}) \frac{C_{aw}}{S_d} \quad \text{(Metric Units)}$$

or

$$C_{ds} = (2000) \frac{C_{aw}}{S_d} \quad \text{(English Units)}$$

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 commissioner determines that operation or maintenance of a commodity facility creates a public nuisance, the commissioner 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; L 1987 c 186 s 15*

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 commodity throughput and location other than those described above	No control required	No control 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 commissioner and which are designed to detect the maximum concentrations of beryllium in the ambient

air. The commissioner 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 commissioner 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 commissioner for the measuring technique which is proposed to be used. The technique shall be adequate to enable the commissioner 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 commissioner 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 commissioner 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 commissioner in writing at least 30 days prior to a rocket motor firing or propellant disposal.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner.** The commissioner 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 commissioner.

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 commissioner by a registered letter dispatched before the close of the next business day following such determination.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner.** The commissioner 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 commissioner.

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 commissioner 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 commissioner 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 commissioner 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 commissioner, 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 commissioner.

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 commissioner by a registered letter dispatched before the close of the next business day following such determination.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15*

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 commissioner.

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 particular 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*

History: *L 1987 c 186 s 15*

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 emissions units 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*

History: *13 SR 2154*

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 commissioner, 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 November 17, 1980:

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*

History: *L 1987 c 186 s 15*

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 commissioner. 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*

History: *L 1987 c 186 s 15*

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 or stationary source 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 Minnesota for which an air pollution alert, air pollution warning, air pollution emergency, or air pollution significant harm episode has been declared by the commissioner.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15; 13 SR 2154*

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 or stationary source, unless the emission facility or stationary source is subject to enforceable permit conditions which limit the operating rate or hours of operation or both, and the applicable standard of performance in agency rules or the standard in the permit, whichever is more stringent.

Subp. 4a. **Commissioner.** "Commissioner" means the commissioner of the Minnesota Pollution Control Agency or the commissioner's designee.

Subp. 5. **Declaration.** "Declaration" means the formal public notification of an episode made by the commissioner.

Subp. 6. [Repealed by Amendment, L 1987 c 186 s 15]

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*

History: *L 1987 c 186 s 15; 13 SR 2154*

7005.2970 EPISODE LEVELS.

The level at which the commissioner 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*

History: *L 1987 c 186 s 15*

7005.2980 EPISODE DECLARATION.

Subpart 1. **Alert.** An air pollution alert shall be declared by the commissioner when the commissioner 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 commissioner when the commissioner 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 commissioner when the commissioner 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 commissioner 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 commissioner when the commissioner 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 commissioner 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 commissioner's declaration.

Subp. 6. **End of episode.** The commissioner 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*

History: *L 1987 c 186 s 15*

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 commissioner or the commissioner's designee, comply with episode control directives issued by the commissioner.

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 commissioner 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 or stationary source located within the state having allowable air pollutant emissions of at least 250 tons per year shall within 90 days of the effective date these parts submit to the commissioner an episode emission reduction plan to be implemented at the facility or stationary source in the event of a declaration by the commissioner of an air pollution episode. The plan shall be consistent with the emission reduction objectives 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 commissioner. If the commissioner 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 commissioner.

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 commissioner 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*

History: *L 1987 c 186 s 15; 13 SR 2154*

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	300 ppb	600 ppb	800 ppb	1000 ppb
24 hr. avg.	800 $\mu g/m^3$	1600 $\mu g/m^3$	2100 $\mu g/m^3$	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	15 ppm	30 ppm	40 ppm	50 ppm
8 hr. avg.	17 mg/m^3	34 mg/m^3	46 mg/m^3	57.5 mg/m^3

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. 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.	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. c. Maximum reduction by diverting electric power generation to facilities outside of Warning Area.	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. 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. 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.	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. c. Reduction of steam load demands consistent with continuing plant operations. d. Making ready for use a plan of action to be taken if an emergency develops.	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. c. Taking the action called for in the emergency plan.

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.

Statutory Authority: *MS s 116.07 subd 4*

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.

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.

Parts 7005.3010 to 7005.3060 apply to persons who propose to construct a major stationary source or major modification in a nonattainment area and to persons who propose to construct a major stationary source or major modification the emissions from which would affect a nonattainment area.

Statutory Authority: *MS s 116.07 subd 4*

History: *13 SR 2153*

7005.3030 DEFINITIONS.

Subpart 1. **Scope.** The definitions in part 7005.0100 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. 1a. **Actual emissions.** "Actual emissions" means the actual rate of emissions of a pollutant from an emissions unit as determined in accordance with the following conditions:

A. Actual emissions as of a particular date equal the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two-year period that precedes a particular date and that is representative of normal stationary source operation. The commissioner shall allow the use of a different time period upon determining that it is more representative of normal stationary source operation. Actual emissions must be calculated using the stationary source's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

B. The commissioner shall presume that the stationary source's specific allowable emissions for the unit are equivalent to the actual emissions of the unit unless the commissioner finds that reliable evidence demonstrates that actual emissions differ from the allowable emissions.

C. For any emissions unit that has not begun normal operations on a particular date, actual emissions must equal the potential to emit of the unit on that date.

Subp. 1b. **Affect, affected.**

A. For a new or modified stationary source proposed to be located in a nonattainment area, "affect" or "affected" means that the emissions from the new or modified stationary source have ambient air quality impacts which are equal to or exceed the levels in Code of Federal Regulations, title 40, section 51.165(b)(2), as amended.

B. For a new or modified stationary source proposed to be located adjacent to a nonattainment area, "affect" or "affected" means that the emissions from the new or modified stationary source have ambient air quality impacts which are equal to or exceed the levels in Code of Federal Regulations, title 40, section 51.165 (b)(2), as amended, at a location within a nonattainment area that exceeds ambient air quality standards or will exceed ambient air quality standards due to the emissions from the new or modified stationary source.

C. The area that would be affected by a major stationary source or major modification is defined as follows:

(1) For new or modified stationary sources proposed to be located in nitrogen oxide or ozone nonattainment areas or in an air quality region adjacent to a nitrogen oxide or ozone nonattainment area, the area that would be affected by the nitrogen oxide or ozone emitted by the new or modified stationary source is the nonattainment area in which the new or modified stationary source is located or to which it is adjacent.

(2) For a new or modified stationary source proposed to be located in an area designated as nonattainment for a criteria pollutant not listed in subitem (1), or located in an air quality region adjacent to that nonattainment area, the area that would be affected by the nonattainment criteria pollutant emitted by the new or modified stationary source is the area that modeling analysis performed in accordance with part 7005.3040, subpart 3, demonstrates to be affected by the emissions from the new or modified stationary source.

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 described in Code of Federal Regulations, title 40, section 81.324, as amended.

Subp. 2a. **Allowable emissions.** "Allowable emissions" means the emissions rate of a stationary source calculated using the maximum rated capacity of the stationary source (unless the stationary source is subject to federally enforceable limits) and the most stringent of the following:

A. the applicable standards in Code of Federal Regulations, title 40, parts 60 and 61;

B. the applicable state implementation plan emissions limitation, including those with a future compliance date; or

C. the emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.

Subp. 2b. **Ambient air quality standards.** "Ambient air quality standards" means any of the national ambient air quality standards or state ambient air quality standards relating to the primary (health related) or secondary (welfare related) air pollutant concentrations in:

A. Code of Federal Regulations, title 40, part 50, as amended; and

B. parts 7005.0010 to 7005.0080.

Subp. 3. [Repealed, 13 SR 2153]

Subp. 4. [Repealed, 13 SR 2153]

Subp. 5. **Lowest achievable emission rate.** "Lowest achievable emission rate" means, for any stationary source, the more stringent rate of emissions based on the following:

A. the most stringent emission limitation contained in the implementation plan of any state for the class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that the limitations are not achievable; or

B. the most stringent emission limitation that is achieved in practice by that class or category of stationary source. This limitation, when applied to a modification, means the lowest achievable emission rate for the new or modified emission units within the stationary source. In no case shall the application of this term permit a proposed new or modified stationary source to emit any pollutant in excess of the amount allowable under an applicable new source performance standard as promulgated under section 111 of the Clean Air Act of 1977, United States Code, title 42, section 7411.

Subp. 6. **Major modification.** "Major modification" means any physical change in, change in the method of operation of, or addition to a major stationary

source which would result in a significant net emissions increase of any criteria pollutant. Any net emissions increase that is considered significant for volatile organic compounds shall be considered significant for ozone. A physical change or change in the method of operation does not include:

A. routine maintenance, repair, or replacement;

B. use of an alternate fuel or raw material in a stationary source by reason of 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), as amended, or by reason of a natural gas curtailment plan pursuant to the Federal Power Act, United States Code, title 16, section 791a et seq. (1980), as amended;

C. use of an alternative fuel by reason of an order or rule adopted or issued under section 125 of the Clean Air Act of 1977, United States Code, title 42, section 7425 (1980), as amended;

D. use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;

E. use of an alternative fuel or raw material by a stationary source which:

(1) the source was continuously physically capable of accommodating before, on, and after December 21, 1976, unless the change would be prohibited under any federally enforceable permit condition that was established after December 21, 1976, in accordance with Code of Federal Regulations, title 40, section 52.21 or in accordance with an agency rule approved by the United States Environmental Protection Agency under Code of Federal Regulations, title 40, part 51, subpart I, or Code of Federal Regulations, title 40, section 51.166; or

(2) the stationary source is approved to use under a permit issued pursuant to parts 7005.3010 to 7005.3060.

F. an increase in the hours of operation or in the production rate, unless the change is prohibited under any of the following:

(1) a federally enforceable permit condition established after December 21, 1976, in accordance with Code of Federal Regulations, title 40, section 52.21 or in accordance with an agency rule approved by the United States Environmental Protection Agency under Code of Federal Regulations, title 40, part 51, subpart I, or Code of Federal Regulations, title 40, section 51.166;

(2) an agency rule;

(3) a stipulation agreement;

(4) an order of the agency of the United States Environmental Protection Agency; or

(5) a court order; or

G. any change in ownership at a stationary source.

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. 7a. **Major stationary source.**

A. "Major stationary source" means:

(1) any stationary source that emits, or has the potential to emit, 100 tons per year or more of any criteria pollutant; or

(2) any physical change, change in the method of operation, or addition that is proposed to occur at a stationary source not qualifying under item A as a major stationary source if the change will result in additional emissions or potential emissions from the stationary source of 100 tons per year or more of any criteria pollutant.

B. A major stationary source that is major for volatile organic compounds must be considered major for ozone.

C. The fugitive emissions of a stationary source must not be included in determining whether the stationary source is a major stationary source unless the stationary source belongs to one of the categories listed in Code of Federal Regulations, title 40, section 51.165(a)(iv)(C).

Subp. 8. **Net air quality benefit.** "Net air quality benefit" means that, in the area that would be affected by the stationary source, 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 emissions and a reduction, on balance, in the ambient concentration of nonattainment criteria pollutants. A reduction in ambient concentration need not occur at every location affected by the source, but in no circumstance shall an increase exceed the levels in Code of Federal Regulations, title 40, section 51.165(b)(2), at any location within the nonattainment area that exceeds ambient air quality standards. The commissioner shall determine whether the net air quality benefit represents reasonable further progress toward compliance with ambient air quality standards.

Where the major stationary source or major modification is proposed to be located in a nonattainment area without a state implementation plan or at a location where the emissions from the major stationary source or major modification would affect a nonattainment area without a state implementation plan, the commissioner shall not find that there will be a net air quality benefit unless Y divided by X is equal to or greater than 1.2, where:

X = the potential to emit emissions on a tons per year and pounds per hour basis to which the major stationary source or major modification will be limited; and

Y = the offsets, equal to the lower of actual or allowable emissions, on a tons per year and pounds per hour basis, to be provided by the person proposing the major stationary source or major modification.

Subp. 9. **Net increase or decrease in emissions.** "Net increase or decrease in emissions" means any net increase or decrease in actual emissions from a particular physical change or change in the method of operation at a stationary source. Determination of a net increase or decrease in emissions is governed by the following:

A. A net emissions increase is the amount by which the sum of the following exceeds zero:

(1) any increase in actual emissions from a particular physical change or change in the method of operation at a stationary source; and

(2) any other increases and decreases in actual emissions at the stationary source that are contemperaneous with the particular change and are otherwise creditable.

B. An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if the increase or decrease in actual emissions occurs before the date that the increase from the particular change occurs.

C. An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if:

(1) it occurs between the date five years before construction on the particular change commences; and

(2) the date that the increase from the particular change occurs.

D. An increase or decrease in actual emissions is creditable only if the commissioner has not relied on it in issuing a permit for the stationary source in accordance with rules approved by the United States Environmental Protec-

tion Agency under Code of Federal Regulations, title 40, part 51, subpart I, where the permit is in effect when the increase in actual emissions from the particular change occurs.

E. An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.

F. A decrease in actual emissions is creditable only to the extent that all of the following conditions are met:

(1) the old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;

(2) it is federally enforceable at and after the time that actual construction on the particular change begins;

(3) the commissioner has not relied on it in issuing any permit in accordance with rules approved by the United States Environmental Protection Agency under Code of Federal Regulations, title 40, part 51, subpart I, or relied on it in demonstrating attainment or reasonable further progress; and

(4) it has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.

G. An increase that results from a physical change at a stationary source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.

Subp. 10. **Nonattainment area.** "Nonattainment area" means any geographic region that has been:

A. designated by the agency as violating a state ambient air quality standard; or

B. designated by the United States Environmental Protection Agency as violating a national ambient air quality standard in Code of Federal Regulations, title 40, section 81.324, as amended.

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 volatile organic compounds.

Subp. 12. **Offsets.** Offsets are governed by the following provisions:

A. "Offsets" means any documented reduction in the lower of actual or allowable emissions of nonattainment criteria pollutants that:

(1) for pollutants for which national ambient air quality standards have been established, is federally enforceable;

(2) is 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;

(3) occurs prior to start of operation of the proposed major stationary source or major modification; and

(4) if needed to meet the ozone standard, results from reductions in volatile organic compounds.

B. Credit for offsets achieved by shutting down an existing stationary source or permanently curtailing production or operating hours below baseline levels is governed by Code of Federal Regulations, title 40, section 51.165(a)(3)(ii)(C), as amended.

C. Credit for an emission reduction can be claimed to the extent that the

agency has not previously relied on it in issuing any permit in accordance with parts 7005.3010 to 7005.3060; or the commissioner has not relied on it in demonstrating to the United States Environmental Protection Agency attainment or reasonable further progress.

D. No emissions credit may be allowed for replacing one volatile organic compound with another of lesser reactivity, except for those compounds listed in Table 1 of the United States Environmental Protection Agency's Recommended Policy on Control of Volatile Organic Compounds in Federal Register, volume 42, page 35314, July 8, 1977, as amended.

E. No emissions credit may be allowed unless procedures relating to the permissible location of offsetting emissions have been followed that are at least as stringent as those in Code of Federal Regulations, title 40, part 51, appendix S, section IV.D, as amended.

F. The offset baseline is either the stationary source's actual emissions or the potential to emit, as determined by the state implementation plan in effect on the date the commissioner determines that a complete application to construct has been filed with the agency, except that the offset baseline is the actual emissions of the stationary source from which offset credit is obtained where:

(1) the demonstration of reasonable further progress and attainment of ambient air quality standards is based upon the actual emissions from stationary sources located within a designated nonattainment area; or

(2) there is no applicable state implementation plan approved by the United States Environmental Protection Agency, or the state implementation plan does not contain an emissions limitation for that stationary source or stationary source category.

G. If the emissions limit under the applicable state implementation plan allows greater emissions than the potential to emit of the stationary source, emissions credit must be allowed only for control below the potential to emit of the stationary source.

H. For an existing fuel combustion source, credit must be based on the lower of actual or allowable emissions under the applicable state implementation plan for the type of fuel being burned at the time the application to construct is filed. If the existing stationary source commits to switch to a cleaner fuel at some future date, emissions offsets based on the cleaner fuel must not be credited unless the permit is conditioned to require the use of a specified alternative control measure that would achieve the same degree of emissions reductions should the stationary source switch back to a dirtier fuel at some date. The commissioner shall not grant emissions offset credit for fuel switches unless the owner or operator of the fuel combustion source has demonstrated that adequate long-term supplies of the cleaner fuel are available.

Subp. 13. **Plan, state implementation plan.** "Plan" or "state implementation plan" means any state air quality control laws, rules, permits, stipulation agreements, and procedures adopted or issued by Minnesota to ensure compliance with ambient air quality standards and approved by the United States Environmental Protection Agency under section 110 of the Clean Air Act, United States Code, title 42, section 7410.

Subp. 14. [Repealed, 13 SR 2153]

Subp. 14a. **Reasonable further progress.** "Reasonable further progress" means regular or annual incremental reductions in emissions of the applicable air pollutant that:

A. the administrator of the United States Environmental Protection Agency has determined are sufficient to provide for attainment of the applicable national ambient air quality standard in Code of Federal Regulations, title 40, part 50; and

B. the commissioner has determined are sufficient to provide for attain-

ment of the applicable state ambient air quality standards in parts 7005.0010 to 7005.0080.

Subp. 15. [Repealed, 13 SR 2153]

Subp. 16. [Repealed, 13 SR 2153]

Subp. 17. [Repealed, 13 SR 2153]

Subp. 18. [Repealed, 13 SR 2153]

Subp. 19. [Repealed, 13 SR 2153]

Subp. 19a. **Significant emissions increase.** "Significant emissions increase" means a net increase in emissions or the potential of a stationary source to emit any of the listed pollutants that would equal or exceed any of the rates of emissions in Code of Federal Regulations, title 40, part 51, Appendix S, Part II.A.10(i), as amended. Any net emissions increase that is considered significant for volatile organic compounds must be considered significant for ozone.

Subp. 20. **Volatile organic compounds.** "Volatile organic compounds" means any organic compound that participates in atmospheric photochemical reaction; that is, any organic compound other than those which the United States Environmental Protection Agency has designated as having negligible photochemical reactivity. Volatile organic compounds must be measured by a reference method, an equivalent method, an alternative method, or by procedures specified under Code of Federal Regulations, title 40, part 60. In cases where a reference method, equivalent method, or alternative method also measures nonreactive organic compounds, an owner or operator may exclude the nonreactive organic compounds when determining compliance with a standard. As used in parts 7005.3010 to 7005.3060, the term "volatile organic compounds" does not include:

A. Methane;

B. Ethane;

C. 1,1,1-Trichloroethane (Methyl Chloroform);

D. Trichlorotrifluoroethane (Freon 113);

E. Methyl chloroform;

F. Methylene Chloride;

G. Trichlorofluoromethane (CFC-11);

H. Dichlorodifluoromethane (CFC-12);

I. Chlorodifluoromethane (CFC-22);

J. Trifluoromethane (FC-23);

K. Trichlorotrifluoroethane (CFC-113);

L. Dichlorotetrafluoroethane (CFC-114);

M. Chloropentafluoroethane (CFC-115);

N. any other compound listed in table 1, as amended, of the United States Environmental Protection Agency's Recommended Policy on Control of Volatile Organic Compounds, Federal Register, volume 42, page 35314, July 8, 1977; or

O. any other compound determined by the United States Environmental Protection Agency to be negligibly photochemically reactive. These determinations are published in the Federal Register.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15; 13 SR 2153*

7005.3040 CONDITIONS FOR PERMIT.

Subpart 1. **In general.** No person shall commence construction of a major stationary source or major modification in a nonattainment area or at a location where the emissions from the new or modified stationary source would affect a nonattainment area without obtaining an air emission permit and satisfying the

conditions in subparts 2 to 4. All permits issued for major stationary sources or major modifications in a nonattainment area or at a location that would affect a nonattainment area shall contain the conditions in subpart 5.

Subp. 2. **Requirement to obtain offsets.** Before commencement of construction of a major stationary source or major modification in a nonattainment area or at a location where the emissions from the new or modified stationary source would affect a nonattainment area and in order to achieve reasonable further progress, the owner or operator of that major stationary source or major modification shall obtain offsets for emissions of nonattainment criteria pollutants for which the construction or modification will result in a significant net emissions increase.

Subp. 3. **Requirement to demonstrate a net air quality benefit.** Before commencement of construction of a major stationary source or major modification in a nonattainment area or at a location where the emissions from the new or modified stationary source would affect a nonattainment area, 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 major stationary sources or major modifications located or proposed to be located in nitrogen oxide or ozone nonattainment areas, or at a location where the emissions from the new or modified stationary source would affect a nitrogen oxide or ozone nonattainment area, a permit applicant need not perform a modeling analysis to demonstrate net air quality benefit but shall submit to the agency a detailed statement of all information that the commissioner needs in order to be able to determine whether a net air quality benefit will result from the construction or modification.

B. Except as provided in item C, for major stationary sources or major modifications located or proposed to be located in nonattainment areas other than nitrogen oxide or ozone nonattainment areas, or at a location where the emissions from the new or modified stationary source would affect a nonattainment area other than a nitrogen oxide or ozone nonattainment area, 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 commissioner 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" (EPA-450/2-78-027R, United States Environmental Protection Agency, Office of Air Quality Planning and Standards, July 1986, as amended by supplemental updates) or methods that the commissioner finds to be comparably reliable.

C. If a major stationary source or major modification is located or proposed to be located in a nonattainment area other than a nitrogen oxide or ozone nonattainment area, or at a location where the emissions from the new or modified stationary source would affect a nonattainment area other than a nitrogen oxide or ozone nonattainment area, the permit applicant is exempt from the requirement to perform a modeling analysis to demonstrate net air quality benefit if all of the following conditions are met:

(1) the emission offsets are obtained from an existing stationary source on the same premises or within 250 meters of the new or modified stationary source;

(2) the pollutants increased do not disperse from any emissions unit with a lower effective plume height than the emissions unit from which the decrease in pollutants is obtained. Lower effective plume height must be determined according to "Guidelines on Air Quality Models," adopted by reference in subpart 8; and

(3) the offset is equal to or greater than 120 percent of the potential to emit of the proposed major stationary source or major modification.

A permit applicant exempt from the requirement to perform a modeling analysis must demonstrate net air quality benefit in the manner described in item A.

Subp. 4. **Requirement for compliance.** Before issuance of an agency permit to construct or modify a major stationary source or major modification in a nonattainment area or at a location where the emissions from the new or modified stationary source would affect a nonattainment area, the permit applicant shall demonstrate that all existing stationary sources 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 with or are on a federally approved compliance schedule to meet all applicable emission limitations and standards established under the Clean Air Act, United States Code, title 42, sections 7401 to 7626 and in the state implementation plan.

Subp. 5. **Permit conditions.** Any permit issued for a major stationary source or major modification in a nonattainment area or at a location where the emissions from the new or modified stationary source would affect a nonattainment area shall include a provision that:

A. Limits emissions from the stationary source as follows:

(1) The owner or operator of a major stationary source or major modification shall install control equipment that restricts emissions from the major stationary source or major modification to the lowest achievable emission rate of the nonattainment criteria pollutants for which the stationary source is subject. The permit shall expressly describe the lowest achievable emission rate for the class or category of stationary source into which the major stationary source or major modification falls.

(2) The commissioner shall waive the requirement of an emission rate if the commissioner determines that a performance standard based on design, equipment, work practice, operation, maintenance, or other alternative standard is more practicable than an emission rate.

B. States that the offsets that the owner or operator of the major stationary source or major modification has obtained in order to be issued a permit under parts 7005.3010 to 7005.3060 are legally enforceable by the agency and federally enforceable at and after the time the permit is issued.

Subp. 6. [Repealed, 13 SR 2153]

Subp. 7. **Stationary source obligation.** When a particular stationary source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforcement limitation that was established after August 7, 1980, on the capacity of the stationary source or modification otherwise to emit a pollutant, such as a restriction on the hours of operation, then the requirements of parts 7005.3010 to 7005.3060 apply to the owner or operator as though construction had not commenced on the stationary source or modification.

Subp. 8. **Incorporation by reference.** The following publication by the United States Environmental Protection Agency is incorporated by reference: "Guidelines on Air Quality Models," EPA-450/2-78-027R, as amended by supplemental updates, written and published by the USEPA, Office of Air and Radiation, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina 27711. The guidelines are subject to frequent change and are available from the Minnesota State Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota 55155.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15; 13 SR 2153*

7005.3050 BANKING.

A person who has obtained a reduction in the lower of actual or allowable emissions a stationary source shall be permitted to bank that reduction for future use as an offset as allowed by parts 7005.3010 to 7005.3060 under the following circumstances, limitations, and conditions.

A. In order to be eligible for banking and to assure that emission trades do not contravene applicable requirements of the Clean Air Act, 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 the stationary source or through a permanent, physical alteration of the stationary source. No person shall cease to maintain emission reductions that were obtained to provide offsets for a new or modified stationary source.

B. In order to be able to bank reductions in emissions, the person obtaining those reductions shall report to the commissioner the amount and location of the banked emissions and the time at which the banked emissions have become permanently and finally implemented.

C. A person may bank only those reductions in emissions that:

(1) were obtained after August 1977, but before October 27, 1981, and that were reported to the agency within six months of October 21, 1981; or

(2) are obtained after October 27, 1981, and are reported within six months after the reductions have become final and enforceable.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15; 13 SR 2153*

7005.3060 LIMITATION ON USE OF OFFSETS.

To the extent that these parts create a program for the use of offsets or allow persons to purchase or obtain offsets, parts 7005.3010 to 7005.3060 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*

History: *13 SR 2153*

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 commissioner 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; L 1987 c 186 s 15*

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 commissioner 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 commissioner 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 commissioner 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; L 1987 c 186 s 15*