

CHAPTER 7011

MINNESOTA POLLUTION CONTROL AGENCY

AIR QUALITY DIVISION

STATIONARY SOURCES

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GENERALLY

7011.0010 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; 18 SR 614*

7011.0020 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; 18 SR 614

7011.0050 GENERAL PROVISIONS OF FEDERAL NEW SOURCE PERFORMANCE STANDARDS INCORPORATED BY REFERENCE.

For purposes of interpreting, applying, and enforcing New Source Performance Standards that are incorporated by reference into this chapter, Code of Federal Regulations, title 40, parts 60.1, 60.2, 60.3, 60.5, 60.6, 60.12, 60.14, 60.15, 60.17, and 60.18, as amended, are adopted and incorporated by reference.

All requests, reports, applications, submittals, and other communications to the administrator pursuant to New Source Performance Standards that are incorporated by reference into this chapter must be submitted to the commissioner.

Statutory Authority: *MS s 116.07*

History: 18 SR 580

EMISSION STANDARDS FOR VISIBLE AIR CONTAMINANTS**7011.0100 SCOPE.**

The standards of performance in parts 7011.0100 to 7011.0115 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*

History: 18 SR 614

7011.0105 VISIBLE EMISSION RESTRICTIONS FOR EXISTING FACILITIES.

No owner or operator of an existing emission facility to which parts 7011.0100 to 7011.0115 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*

History: 18 SR 614

7011.0110 VISIBLE EMISSION RESTRICTIONS FOR NEW FACILITIES.

No owner or operator of a new emission facility to which parts 7011.0100 to 7011.0115 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*

History: 18 SR 614

7011.0115 PERFORMANCE TESTS.

Unless another method is approved by the agency, any person required to submit performance tests for emission facilities for which parts 7011.0100 to 7011.0115 are applicable shall utilize Method 9 for visual determination of opacity.

Statutory Authority: *MS s 116.07 subd 4*

History: 18 SR 614

7011.0120 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 chapters 7017 and 7019, 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, 25 Constitution 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 $\mu\text{g}/\text{m}^3$ to an annual ambient particulate matter standard violation and less than five $\mu\text{g}/\text{m}^3$ 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; 18 SR 614

CONTROL OF FUGITIVE PARTICULATE MATTER

7011.0150 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; 18 SR 614

ODOROUS EMISSIONS

7011.0300 DEFINITIONS.

Subpart 1. **Scope.** The following definitions shall apply in the interpretation and enforcement of parts 7011.0300 to 7011.0330 and the following words and terms wherever they occur in parts 7011.0300 to 7011.0330 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*

History: *18 SR 614*

7011.0305 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 7011.0310. Such excessive emissions are air pollution in one or more of the ways enumerated in Minnesota Statutes, section 116.06, subdivisions 2 and 4.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

7011.0310 ODOR EMISSION LIMITS.

Violation of part 7011.0305 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*

History: *18 SR 614*

7011.0315 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*

History: *18 SR 614*

7011.0320 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 7011.0310 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 7011.0305 and 7011.0310, 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*

History: *18 SR 614*

7011.0325 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*

History: *18 SR 614*

7011.0330 DEFENSE TO CIVIL ACTION.

Compliance with the provisions of parts 7011.0305 to 7011.0325 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*

History: *18 SR 614*

ACID AND ALKALINE FALLOUT

7011.0400 SCOPE.

Parts 7011.0400 to 7011.0410 shall apply to all emissions from any sources or premises.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

7011.0405 METHOD OF MEASUREMENT.

Subpart 1. **Sampling devices.** In determining compliance with part 7011.0410, 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; 18 SR 614*

7011.0410 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 7011.0405.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

INDIRECT HEATING FOSSIL-FUEL-BURNING EQUIPMENT**7011.0500 DEFINITIONS.**

Subpart 1. **Scope.** As used in parts 7011.0500 to 7011.0550, 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*

History: *18 SR 614*

7011.0505 DETERMINATION OF APPLICABLE STANDARDS OF PERFORMANCE.

Subpart 1. **Scope.** Parts 7011.0500 to 7011.0550 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 7011.0545 or 7011.0550 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 SO₂ standard for liquid fossil fuels expressed in lbs per million Btu (nanograms/joule); and

b is the allowable SO₂ 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*

History: *18 SR 614*

7011.0510 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 7011.0545.

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*

History: *18 SR 614*

7011.0515 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 7011.0550.

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*

History: *18 SR 614*

7011.0520 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*

History: *18 SR 614*

7011.0525 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*

History: *18 SR 614*

7011.0530 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 SO₂;
- 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; 18 SR 614*

7011.0535 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. %O₂ = 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/10⁶ 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/10⁶ Btu); and

(3) For liquid fossil fuels including crude, residual, and distillate oils, $F = 2.476 \times 10^{-7}$ dscm/J (9220 dscf/10⁶ Btu); and

(4) For gaseous fossil fuels including natural gas, propane, and butane, $F = 2.347 \times 10^{-7}$ dscm/J (8740 dscf/10⁶ Btu).

E. An owner or operator may use the following equation to determine an F factor (dscf/10⁶ 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:

$$F = \frac{x F_1 + y F_2 + z F_3}{100}$$

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;

F₁ = the value of F for gaseous fossil fuels according to item D or E;

F₂ = the value of F for liquid fossil fuels according to item D or E; and

F₃ = 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*

History: *18 SR 614*

7011.0540 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; 18 SR 614*

7011.0545 TABLE I: EXISTING 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	Solid Fuels	Liquid Fuels	SO ₂
Million BTU/Hr.	Million BTU/Hr.	All 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*History: *18 SR 614*

7011.0550 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 *		Solid Fuels		Liquid Fuels	
		All Fuels	Solid Fuels	Solid Fuels	Liquid Fuels	Gaseous Fuels	Gaseous Fuels	Solid Fuels	Liquid Fuels	Liquid Fuels	Liquid Fuels
Million BTU/Hr.	Million BTU/Hr.										
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 NO₂

**N.A.—Not applicable

Statutory Authority: *MS s 116.07 subd 4*History: *18 SR 614*

FOSSIL-FUEL-FIRED STEAM GENERATORS**7011.0555 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY REFERENCE.**

Code of Federal Regulations, title 40, part 60, subpart D, as amended, entitled "Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

ELECTRIC UTILITY STEAM GENERATING UNITS**7011.0560 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY REFERENCE.**

Code of Federal Regulations, title 40, part 60, subpart Da, as amended, entitled "Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.45a, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

**INDUSTRIAL-COMMERCIAL-INSTITUTIONAL
STEAM GENERATING UNITS****7011.0565 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY REFERENCE.**

Code of Federal Regulations, title 40, part 60, subpart Db, as amended, entitled "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 60.44b(f), 60.44b(g), and 60.49b(a)(4), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

**SMALL INDUSTRIAL-COMMERCIAL-INSTITUTIONAL
STEAM GENERATING UNITS****7011.0570 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY REFERENCE.**

Code of Federal Regulations, title 40, part 60, subpart Dc, as amended, entitled "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.48c(a)(4), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

DIRECT HEATING FOSSIL-FUEL-BURNING EQUIPMENT**7011.0600 DEFINITIONS.**

Subpart 1. **Scope.** As used in parts 7011.0600 to 7011.0620, 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*

History: *18 SR 614*

7011.0605 DETERMINATION OF APPLICABLE STANDARDS OF PERFORMANCE.

Parts 7011.0600 to 7011.0620 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 (SO₂) 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 SO₂ standard for liquid fossil fuels expressed in lbs per million Btu (g/million cal); and

b is the allowable SO₂ standard for solid fossil fuels expressed in lbs per million Btu (g/million cal).

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

7011.0610 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 7011.0700 to 7011.0735; 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*

History: *18 SR 614*

7011.0615 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 SO₂; and
- E. Method 9 for visual determination of opacity.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

7011.0620 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:

$$F = \frac{x F_1 + y F_2 + z F_3}{100}$$

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*

History: *18 SR 614*

INDUSTRIAL PROCESS EQUIPMENT

7011.0700 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7011.0700 to 7011.0735, 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*

History: *18 SR 614*

7011.0705 SCOPE.

Parts 7011.0700 to 7011.0735 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*

History: *18 SR 614*

7011.0710 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 7011.0730 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 7011.0735 for the appropriate source gas volume; provided further that regardless of the mass emission permitted by part 7011.0730, 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*

History: *18 SR 614*

7011.0715 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 7011.0730 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 7011.0735 for the appropriate source gas volume; provided that regardless of the mass emission permitted by part 7011.0730, 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*

History: *18 SR 614*

7011.0720 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*

History: *18 SR 614*

7011.0725 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*

History: *18 SR 614*

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7011.0730 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*

History: *18 SR 614*

7011.0735 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

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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

^aDry standard cubic feet per minute

^bGrains per dry standard cubic foot.

Statutory Authority: *MS s 116.07 subd 4*

History: *13 SR 2154; 18 SR 614*

PORTLAND CEMENT PLANTS

7011.0800 DEFINITION.

As used in parts 7011.0800 to 7011.0825, "portland cement plant" means any facility manufacturing portland cement by either the wet or dry process.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

7011.0805 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 7011.0700 to 7011.0735; 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*

History: *18 SR 614*

7011.0810 [Repealed, 18 SR 580]

7011.0815 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*

History: *18 SR 614*

7011.0820 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*

History: *18 SR 614*

7011.0825 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, $\text{lb/hr} = Q_s \times c$, where Q_s = volumetric flow rate of the total effluent in dscf/hr as determined in accordance with part 7011.0820, item B, and c = particulate concentration in lb/dscf as determined in accordance with part 7011.0820, item D.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

7011.0830 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY REFERENCE.

Code of Federal Regulations, title 40, part 60, subpart F, as amended, entitled "Standards of Performance for Portland Cement Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

ASPHALT CONCRETE PLANTS

7011.0900 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*

History: *18 SR 614*

7011.0905 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 7011.0700 to 7011.0735; 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*

History: *18 SR 614*

7011.0910 [Repealed, 18 SR 580]

7011.0915 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*

History: *18 SR 614*

7011.0920 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*

History: *18 SR 614*

7011.0925 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY REFERENCE.

Code of Federal Regulations, title 40, part 60, subpart I, as amended, entitled "Standards of Performance for Hot Mix Asphalt Facilities," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

ASPHALT PROCESSING AND ASPHALT ROOFING MANUFACTURE

7011.0950 STANDARDS OF PERFORMANCE FOR NEW ASPHALT PROCESSING AND ASPHALT ROOFING MANUFACTURE.

Code of Federal Regulations, title 40, part 60, subpart UU, as amended, entitled "Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

BULK AGRICULTURAL COMMODITY FACILITIES

7011.1000 DEFINITIONS.

Subpart 1. **Scope.** For the purposes of parts 7011.1000 to 7011.1015 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; 18 SR 614

7011.1005 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, subpart DD, as amended, entitled "Standards of Performance for Grain Elevators," which is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.302(d)(3), are not delegated to the commissioner and must be made by the administrator.

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 7011.1015 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 7011.0735 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*

History: 8 SR 1675; 18 SR 580; 18 SR 614

7011.1010 NUISANCE.

Notwithstanding any provisions in parts 7011.1000 to 7011.1015, 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; 18 SR 614

7011.1015 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; 18 SR 614

COAL HANDLING FACILITIES**7011.1100 DEFINITIONS.**

Subpart 1. **Scope.** As used in parts 7011.1100 to 7011.1140, 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; 18 SR 614*

7011.1105 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 alternatives 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; 18 SR 614*

7011.1110 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 7011.0150) for the control of fugitive particulate emissions.

Statutory Authority: *MS s 116.07*

History: *18 SR 614*

7011.1115 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 7011.1130 to 7011.1135.

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*

History: *18 SR 614*

7011.1120 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*

History: *18 SR 614*

7011.1125 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*

History: *18 SR 614*

7011.1130 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; 18 SR 614*

7011.1135 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; 18 SR 614*

7011.1140 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*

History: *18 SR 614*

COAL PREPARATION PLANTS**7011.1150 STANDARDS OF PERFORMANCE FOR NEW COAL PREPARATION PLANTS.**

Code of Federal Regulations, title 40, part 60, subpart Y, as amended, entitled "Standards of Performance for Coal Preparation Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

INCINERATORS**7011.1201 DEFINITIONS.**

Subpart 1. **Scope.** As used in parts 7011.1201 to 7011.1207 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; 18 SR 614*

7011.1202 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 CO₂.

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 CO₂.

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 CO₂.

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*

History: *18 SR 614*

7011.1203 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 CO₂.

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 CO₂.

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 CO₂.

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 CO₂.

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*

History: *18 SR 614*

7011.1204 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*

History: *18 SR 614*

7011.1206 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*

History: *18 SR 614*

7011.1207 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 CO₂ 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 CO₂ percentage using the following equation:

$$(\%CO_2)_{adj} = (\%CO_2)_{di} (Q_{di}/Q_{do})$$

where:

(%CO₂)_{adj} is the adjusted CO₂ percentage which removes the effect of CO₂ absorption and dilution air;

(%CO₂)_{di} is the percentage of CO₂ measured before the scrubber, dry basis;

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

Q_{do} 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 CO₂, O₂, and N₂ 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

%O₂ = percent oxygen by volume, dry basis

%N₂ = 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 CO₂ percentage using the following equation:

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

where:

(%CO₂) adj is the adjusted outlet CO₂ percentage;

(%CO₂) di is the percentage of CO₂ measured before the scrubber, dry basis;

(%EA)₁ 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 CO₂ by using the following formula:

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

where:

c₁₂ is the concentration of particulate matter corrected to 12 percent CO₂;

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

%CO₂ is the percentage of CO₂ as measured by Method 3, or when applicable, the adjusted outlet CO₂ percentage as determined by subpart 2 or 3.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

SEWAGE SLUDGE INCINERATORS

7011.1300 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7011.1300 to 7011.1325, 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; 18 SR 614*

7011.1305 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 CO₂ 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 CO₂ 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 CO₂ 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; 18 SR 614*

7011.1310 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:

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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; 18 SR 614*

7011.1315 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*

History: *18 SR 614*

7011.1320 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*

History: *18 SR 614*

7011.1325 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 7011.1315, 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/ft³) 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/ft³);

S_v = sludge charged to the incinerator during the run, m³ (English units: gal);

T = duration of run, min (English units: min);

60×10^{-3} = metric units conversion factor, 1-kg-min/m³-mg-hr;

8.021 = English units conversion factor, ft³-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_3 = Volumetric stack gas flow rate, dscm/hr (English units: dscf/hr). Q_3 and c_s shall be determined using methods 2 and 5, respectively.

Subp. 4. **Compliance with standards.** Compliance with part 7011.1310 shall be determined as follows:

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

or

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

where:

C_{ds} = particulate emission discharge, g/kg dry sludge (English units: lb/ton dry sludge).

10^{-3} = Metric conversion factor, g/mg.

2,000 = English conversion factor, lb/ton.

Statutory Authority: *MS s 116.07*

History: *18 SR 614*

7011.1350 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY REFERENCE.

Code of Federal Regulations, title 40, part 60, subpart O, as amended, entitled "Standards of Performance for Sewage Treatment Plants," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.153(e), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

PETROLEUM REFINERIES

7011.1400 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7011.1400 to 7011.1430 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 7011.1430, 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 7011.0525.

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*

History: *18 SR 614*

7011.1405 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*

History: *18 SR 614*

7011.1410 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; 18 SR 614*

7011.1415 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 7011.1400 to 7011.1430 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*

History: *18 SR 614*

7011.1420 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 (SO₂).

(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 7019.2000, 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 7011.1410.

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 7017.1000, 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; 18 SR 614*

7011.1425 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_{O_2} ;
- 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; 18 SR 614*

7011.1430 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 mini-

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 SO₂ concentration. The sampling site for determining SO₂ 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 SO₂ concentration by Method 6 shall be at the centroid of the cross section if the cross sectional area is less than 5 m² (54 ft²) or at a point no closer to the walls than 1 meter (39 inches) if the cross sectional area is 5 m² 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-m³;

0.0186 = English units material balance factor divided by 100, lb-min/hr-ft³;

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-m³;

0.1303 = English units material balance factor divided by 100, lb-min/hr-ft³;

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-m³;

0.0062 = English units material balance factor divided by 100, lb-min/hr-ft³.

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

$$R_e = (60 \times 10^{-6}) Q_{rv} C_x \text{ (metric units); or}$$

$$R_e = (8.57 \times 10^{-3}) Q_{rv} C_s \text{ (English units)}$$

where:

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

60×10^{-6} = metric units conversion factor, min-kg/hr-gr;

8.57×10^{-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*

History: *18 SR 614*

7011.1435 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARDS BY REFERENCE.

The following New Source Performance Standards are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 60, subpart J, as amended, entitled "Standards of Performance for Petroleum Refineries," except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 60.105(a)(13)(iii) and 60.106(i)(12), are not delegated to the commissioner and must be made by the administrator.

B. Code of Federal Regulations, title 40, part 60, subpart GGG, as amended, entitled "Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.592(c), are not delegated to the commissioner and must be made by the administrator.

C. Code of Federal Regulations, title 40, part 60, subpart QQQ, as amended, entitled "Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.694, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

**LIQUID PETROLEUM AND VOLATILE ORGANIC
LIQUID STORAGE VESSELS**

7011.1500 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7011.1500 to 7011.1515 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*

History: *18 SR 614*

7011.1505 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*

History: *18 SR 614*

7011.1510 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; 18 SR 614*

7011.1515 EXCEPTION.

The provisions of parts 7011.1500 to 7011.1515 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*

History: *18 SR 614*

7011.1520 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARDS BY REFERENCE.

The following New Source Performance Standards are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 60, subpart K, as amended, entitled "Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978."

B. Code of Federal Regulations, title 40, part 60, subpart Ka, as amended, entitled "Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.114a, are not delegated to the commissioner and must be made by the administrator.

C. Code of Federal Regulations, title 40, part 60, subpart Kb, as amended, entitled "Standards of Performance for Volatile Organic Liquid Storage Vessels (including petroleum liquid storage vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984," except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

BULK GASOLINE TERMINALS

7011.1550 STANDARDS OF PERFORMANCE FOR NEW BULK GASOLINE TERMINALS.

Code of Federal Regulations, title 40, part 60, subpart XX, as amended, entitled "Standards of Performance for Bulk Gasoline Terminals," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

SULFURIC ACID PLANTS

7011.1600 DEFINITIONS.

As used in parts 7011.1600 to 7011.1700 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*

History: *18 SR 614*

7011.1605 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 H₂SO₄.

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 H₂SO₄.

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 H₂SO₄, in excess of 1.70 pounds per ton of acid produced (0.85 kg per metric ton), the production being expressed as 100 percent H₂SO₄.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

7011.1610 [Repealed, 18 SR 580]

7011.1615 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 7019.2000, 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*

History: *18 SR 614*

7011.1620 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 SO₂ and acid mist.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15; 18 SR 614*

7011.1625 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_2SO_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, $Q_s \times c = \text{lb/hr (kg/hr)}$, where Q_s = volumetric flow rate of the effluent in dscf/hr (dscm/hr) as determined in accordance with part 7011.1620, item B, and c = acid mist and sulfur dioxide concentrations in lb/dscf (kg/dscm) as determined in accordance with part 7011.1620, item D.

Statutory Authority: *MS s 116.07*

History: *L 1987 c 186 s 15; 18 SR 614*

7011.1630 EXCEPTIONS.

Shutdowns and breakdowns of control equipment at any sulfuric acid production unit shall be governed by the provisions of parts 7017.1000, 7017.2000, 7019.1000, 7019.2000, 7019.3000, and 7019.3010.

Statutory Authority: *MS s 116.07*

History: *18 SR 614*

7011.1635 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY REFERENCE.

Code of Federal Regulations, title 40, part 60, subpart H, as amended, entitled "Standards of Performance for Sulfuric Acid Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

NITRIC ACID PLANTS

7011.1700 DEFINITIONS.

As used in parts 7011.1700 to 7011.1725 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*

History: *18 SR 614*

7011.1705 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*

History: *18 SR 614*

7011.1710 [Repealed, 18 SR 580]

7011.1715 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 (NO₂).

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 7019.2000, 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 part 7011.1705.

Statutory Authority: *MS s 116.07*

History: *18 SR 580; 18 SR 614*

7011.1720 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 NO₂.

Statutory Authority: *MS s 116.07 subd 4*

History: *L 1987 c 186 s 15; 18 SR 614*

7011.1725 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:

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

where Q_s = volumetric flow rate of the effluent in dscf/hr (dscm/hr), as determined in accordance with part 7011.1720, item B, and c = NO_2 concentration in lb/dscf (kg/dscm), as determined in accordance with part 7011.1720, item D.

Statutory Authority: *MS s 116.07*

History: *18 SR 614*

7011.1730 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARDS BY REFERENCE.

Code of Federal Regulations, title 40, part 60, subpart G, as amended, entitled "Standards of Performance for Nitric Acid Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.1800 [Repealed, 18 SR 580]

7011.1805 [Repealed, 18 SR 580]

7011.1810 [Repealed, 18 SR 580]

7011.1815 [Repealed, 18 SR 580]

LEAD SMELTERS

7011.1820 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARDS BY REFERENCE.

The following New Source Performance Standards are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 60, subpart L, as amended, entitled "Standards of Performance for Secondary Lead Smelters."

B. Code of Federal Regulations, title 40, part 60, subpart R, as amended, entitled "Standards of Performance for Primary Lead Smelters."

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

COPPER SMELTERS

7011.1840 STANDARDS OF PERFORMANCE FOR NEW PRIMARY COPPER SMELTERS.

Code of Federal Regulations, title 40, part 60, subpart P, as amended, entitled "Standards of Performance for Primary Copper Smelters," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

ZINC SMELTERS

7011.1880 STANDARDS OF PERFORMANCE FOR NEW PRIMARY ZINC SMELTERS.

Code of Federal Regulations, title 40, part 60, subpart Q, as amended, entitled "Standards of Performance for Primary Zinc Smelters," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

SECONDARY BRASS AND BRONZE INGOT PRODUCTION PLANTS

7011.1900 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7011.1900 to 7011.1915, 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*

History: *18 SR 614*

7011.1905 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 7011.0700 to 7011.0735 for particulate emissions, and exhibit 20 percent opacity or greater.

Statutory Authority: *MS s 116.07*

History: *18 SR 614*

7011.1910 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*

History: *18 SR 614*

7011.1915 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*

History: *18 SR 614*

7011.1920 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARDS BY REFERENCE.

Code of Federal Regulations, title 40, part 60, subpart M, as amended, entitled "Standards of Performance for Secondary Brass and Bronze Production Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

IRON AND STEEL PLANTS**7011.2000 DEFINITIONS.**

Subpart 1. **Scope.** As used in parts 7011.2000 to 7011.2015, 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*

History: *18 SR 614*

7011.2005 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*

History: *18 SR 614*

7011.2010 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*

History: *18 SR 614*

7011.2015 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*

History: *18 SR 614*

7011.2020 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARDS BY REFERENCE.

The following New Source Performance Standards are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 60, subpart N, as amended, entitled "Standards of Performance for Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973."

B. Code of Federal Regulations, title 40, part 60, subpart Na, as amended, entitled "Standards of Performance for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983."

C. Code of Federal Regulations, title 40, part 60, subpart AA, as amended, entitled "Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and on or Before August 17, 1983."

D. Code of Federal Regulations, title 40, part 60, subpart AAa, as amended, entitled "Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983."

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

PRIMARY ALUMINUM REDUCTION PLANTS

7011.2050 STANDARDS OF PERFORMANCE FOR NEW PRIMARY ALUMINUM REDUCTION PLANTS.

Code of Federal Regulations, title 40, part 60, subpart S, as amended, entitled "Standards of Performance for Primary Aluminum Reduction Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

FERROALLOY PRODUCTION FACILITIES

7011.2080 STANDARDS OF PERFORMANCE FOR NEW FERROALLOY PRODUCTION FACILITIES.

Code of Federal Regulations, title 40, part 60, subpart Z, as amended, entitled "Standards of Performance for Ferroalloy Production Facilities," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

EMISSION STANDARDS FOR INORGANIC FIBROUS MATERIALS

7011.2100 DEFINITIONS.

Subpart 1. **Scope.** The following definitions of words and phrases are controlling for purposes of parts 7011.2100 and 7011.2105.

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*

History: *18 SR 614*

7011.2105 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; 18 SR 614*

PROCESSING ANIMAL MATTER

7011.2200 DEFINITION: REDUCTION OF ANIMAL MATTER.

For purposes of parts 7011.2200 to 7011.2220 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*

History: *18 SR 614*

7011.2205 SCOPE.

The provisions of parts 7011.2200 to 7011.2220 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*

History: *18 SR 614*

7011.2210 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*

History: *18 SR 614*

7011.2215 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 opera-

tion, 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; 18 SR 614*

7011.2220 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 7011.0300 to 7011.0330, 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*

History: *L 1987 c 186 s 15; 18 SR 614*

STATIONARY INTERNAL COMBUSTION ENGINES

7011.2300 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 7011.0500 to 7011.0550.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

STATIONARY GAS TURBINES

7011.2350 STANDARDS OF PERFORMANCE FOR NEW STATIONARY GAS TURBINES.

Code of Federal Regulations, title 40, part 60, subpart GG, as amended, entitled “Standards of Performance for Stationary Gas Turbines,” is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations,

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title 40, parts 60.332(a)(3) and 60.335(a), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

PHOSPHATE FERTILIZER INDUSTRY

7011.2400 STANDARDS OF PERFORMANCE FOR PHOSPHATE FERTILIZER INDUSTRY.

The following New Source Performance Standards are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 60, subpart T, as amended, entitled "Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants."

B. Code of Federal Regulations, title 40, part 60, subpart U, as amended, entitled "Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants."

C. Code of Federal Regulations, title 40, part 60, subpart V, as amended, entitled "Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants."

D. Code of Federal Regulations, title 40, part 60, subpart W, as amended, entitled "Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants."

E. Code of Federal Regulations, title 40, part 60, subpart X, as amended, entitled "Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities."

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

KRAFT PULP MILLS

7011.2450 STANDARDS OF PERFORMANCE FOR NEW KRAFT PULP MILLS.

Code of Federal Regulations, title 40, part 60, subpart BB, as amended, entitled "Standards of Performance for Kraft Pulp Mills," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

GLASS MANUFACTURING PLANTS

7011.2500 STANDARDS OF PERFORMANCE FOR NEW GLASS MANUFACTURING PLANTS.

Code of Federal Regulations, title 40, part 60, subpart CC, as amended, entitled "Standards of Performance for Glass Manufacturing Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

SURFACE COATING

7011.2550 STANDARDS OF PERFORMANCE FOR SURFACE COATING OF METAL FURNITURE.

Code of Federal Regulations, title 40, part 60, subpart EE, as amended, entitled "Standards of Performance for Surface Coating of Metal Furniture," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.2555 STANDARDS OF PERFORMANCE FOR AUTOMOBILE AND LIGHT-DUTY TRUCK SURFACE COATING OPERATIONS.

Code of Federal Regulations, title 40, part 60, subpart MM, as amended, entitled "Standards of Performance for Automobile and Light-Duty Truck Surface Coating Operations," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.2560 STANDARDS OF PERFORMANCE FOR PRESSURE SENSITIVE TAPE AND LABEL SURFACE COATING OPERATIONS.

Code of Federal Regulations, title 40, part 60, subpart RR, as amended, entitled "Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.2565 STANDARDS OF PERFORMANCE FOR INDUSTRIAL SURFACE COATING: LARGE APPLIANCES.

Code of Federal Regulations, title 40, part 60, subpart SS, as amended, entitled "Standards of Performance for Industrial Surface Coating: Large Appliances," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.2570 STANDARDS OF PERFORMANCE FOR METAL COIL SURFACE COATING.

Code of Federal Regulations, title 40, part 60, subpart TT, as amended, entitled "Standards of Performance for Metal Coil Surface Coating," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.2575 STANDARDS OF PERFORMANCE FOR THE BEVERAGE CAN SURFACE COATING INDUSTRY.

Code of Federal Regulations, title 40, part 60, subpart WW, as amended, entitled "Standards of Performance for the Beverage Can Surface Coating Industry," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.496(a)(1), and the last sentence of Code of Federal Regulations, title 40, part 60.493(b)(2)(i)(A), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.2580 STANDARDS OF PERFORMANCE FOR INDUSTRIAL SURFACE COATING: SURFACE COATING OF PLASTIC PARTS FOR BUSINESS MACHINES.

Code of Federal Regulations, title 40, part 60, subpart TTT, as amended, entitled "Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 60.723(b)(1), 60.723(b)(2)(i)(C), 60.723(b)(2)(iv), 60.724(e), and 60.725(b), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

LIME MANUFACTURING PLANTS

7011.2600 STANDARDS OF PERFORMANCE FOR NEW LIME MANUFACTURING PLANTS.

Code of Federal regulations, title 40, part 60, subpart HH, as amended, entitled "Standards of Performance for Lime Manufacturing Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

LEAD-ACID BATTERY MANUFACTURING PLANTS

7011.2650 STANDARDS OF PERFORMANCE FOR NEW LEAD-ACID BATTERY MANUFACTURING PLANTS.

Code of Federal Regulations, title 40, part 60, subpart KK, as amended, entitled "Standards of Performance for Lead-Acid Battery Manufacturing Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

METALLIC MINERAL PROCESSING PLANTS

7011.2700 STANDARDS OF PERFORMANCE FOR NEW METALLIC MINERAL PROCESSING PLANTS.

Code of Federal Regulations, title 40, part 60, subpart LL, as amended, entitled "Standards of Performance for Metallic Mineral Processing Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

PHOSPHATE ROCK PLANTS

7011.2750 STANDARDS OF PERFORMANCE FOR NEW PHOSPHATE ROCK PLANTS.

Code of Federal Regulations, title 40, part 60, subpart NN, as amended, entitled "Standards of Performance for Phosphate Rock Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

AMMONIUM SULFATE MANUFACTURE

7011.2800 STANDARDS OF PERFORMANCE FOR AMMONIUM SULFATE MANUFACTURE.

Code of Federal Regulations, title 40, part 60, subpart PP, as amended, entitled "Standards of Performance for Ammonium Sulfate Manufacture," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

GRAPHIC ARTS INDUSTRY

7011.2850 STANDARDS OF PERFORMANCE FOR PUBLICATION ROTOGRAVURE PRINTING.

Code of Federal Regulations, title 40, part 60, subpart QQ, as amended, entitled "Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

SYNTHETIC ORGANIC CHEMICALS MANUFACTURING INDUSTRY**7011.2900 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARDS BY REFERENCE.**

The following New Source Performance Standards are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 60, subpart VV, as amended, entitled "Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.482-1(c)(2), are not delegated to the commissioner and must be made by the administrator.

B. Code of Federal Regulations, title 40, part 60, subpart III, as amended, entitled "Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.613(e), are not delegated to the commissioner and must be made by the administrator.

C. Code of Federal Regulations, title 40, part 60, subpart NNN, as amended, entitled "Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.663(e), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

NEW RESIDENTIAL WOOD HEATERS**7011.2950 STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS.**

Code of Federal Regulations, title 40, part 60, subpart AAA, as amended, entitled "Standards of Performance for New Residential Wood Heaters," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 60.530(c), 60.531, 60.533, 60.534, 60.535, 60.536(i)(2), 60.537, 60.538(e), and 60.539, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

RUBBER TIRE MANUFACTURING INDUSTRY**7011.3000 STANDARDS OF PERFORMANCE FOR THE RUBBER TIRE MANUFACTURING INDUSTRY.**

Code of Federal Regulations, title 40, part 60, subpart BBB, as amended, entitled "Standards of Performance for the Rubber Tire Manufacturing Industry," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.543(c)(2)(ii)(B), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

POLYMER MANUFACTURING INDUSTRY**7011.3050 STANDARDS OF PERFORMANCE FOR POLYMER MANUFACTURING INDUSTRY.**

Code of Federal Regulations, title 40, part 60, subpart DDD, as amended, entitled "Standards of Performance for Volatile Organic Compound (VOC) Emissions from the

Polymer Manufacturing Industry,” is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.562–2(c), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

POLYMERIC COATING OF SUPPORTING SUBSTRATES FACILITIES

7011.3100 STANDARDS OF PERFORMANCE FOR NEW POLYMERIC COATING OF SUPPORTING SUBSTRATES FACILITIES.

Code of Federal Regulations, title 40, part 60, subpart VVV, as amended, entitled “Standards of Performance for Polymeric Coating of Supporting Substrates Facilities,” is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 60.743(a)(3)(v)(A) and (B), 60.743(e), 60.745(a), and 60.746, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

FLEXIBLE VINYL AND URETHANE COATING AND PRINTING

7011.3150 STANDARDS OF PERFORMANCE FOR FLEXIBLE VINYL AND URETHANE COATING AND PRINTING.

Code of Federal Regulations, title 40, part 60, subpart FFF, as amended, entitled “Standards of Performance for Flexible Vinyl and Urethane Coating and Printing,” is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

SYNTHETIC FIBER PRODUCTION FACILITIES

7011.3200 STANDARDS OF PERFORMANCE FOR NEW SYNTHETIC FIBER PRODUCTION FACILITIES.

Code of Federal Regulations, title 40, part 60, subpart HHH, as amended, entitled “Standards of Performance for Synthetic Fiber Production Facilities,” is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

PETROLEUM DRY CLEANERS

7011.3250 STANDARDS OF PERFORMANCE FOR NEW PETROLEUM DRY CLEANERS.

Code of Federal Regulations, title 40, part 60, subpart JJJ, as amended, entitled “Standards of Performance for Petroleum Dry Cleaners,” is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.623, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

ONSHORE NATURAL GAS PROCESSING PLANTS

7011.3300 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARDS BY REFERENCE.

The following New Source Performance Standards are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 60, subpart KKK, as amended, entitled "Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.634, are not delegated to the commissioner and must be made by the administrator.

B. Code of Federal Regulations, title 40, part 60, subpart LLL, as amended, entitled "Standards of Performance for Onshore Natural Gas Processing: SO₂ Emissions."

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

NONMETALLIC MINERAL PROCESSING PLANTS

7011.3350 STANDARDS OF PERFORMANCE FOR NEW NONMETALLIC MINERAL PROCESSING PLANTS.

Code of Federal Regulations, title 40, part 60, subpart OOO, as amended, entitled "Standards of Performance for Nonmetallic Mineral Processing Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

WOOL FIBERGLASS INSULATION MANUFACTURING PLANTS

7011.3400 STANDARDS OF PERFORMANCE FOR NEW WOOL FIBERGLASS INSULATION MANUFACTURING PLANTS.

Code of Federal Regulations, title 40, part 60, subpart PPP, as amended, entitled "Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants," is adopted and incorporated by reference.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

MAGNETIC TAPE COATING FACILITIES

7011.3450 STANDARDS OF PERFORMANCE FOR NEW MAGNETIC TAPE COATING FACILITIES.

Code of Federal Regulations, title 40, part 60, subpart SSS, as amended, entitled "Standards of Performance for Magnetic Tape Coating Facilities," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 60.711(a)(16), 60.713(b)(1)(i), 60.713(b)(1)(ii), 60.713(b)(5)(i), 60.713(d), 60.715(a), and 60.716, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

7011.9900 GENERAL PROVISIONS OF FEDERAL NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS INCORPORATED BY REFERENCE.

For purposes of interpreting, applying, and enforcing National Emission Standards for Hazardous Air Pollutants that are incorporated by reference into this chapter, Code of Federal Regulations, title 40, parts 61.02, 61.03, 61.05, 61.06, 61.07, 61.08, 61.12, 61.15, 61.18, and 61.19, as amended, are incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, part 60.12(d)(1), are not delegated to the commissioner and must be made by the administrator.

All requests, reports, applications, submittals, and other communications to the administrator pursuant to National Emission Standards for Hazardous Air Pollutants that are incorporated by reference into this chapter must be submitted to the commissioner.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9910 ARSENIC.

The following National Emission Standards for Hazardous Air Pollutants are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 61, subpart N, as amended, entitled "National Emission Standard for Inorganic Arsenic Emissions from Glass Manufacturing Plants," except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 61.164(a)(2) and 61.164(a)(3), are not delegated to the commissioner and must be made by the administrator.

B. Code of Federal regulations, title 40, part 61, subpart O, as amended, entitled "National Emission Standard for Inorganic Arsenic Emissions from Primary Copper Smelters," except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 61.172(b)(2)(ii)(B), 61.172(b)(2)(ii)(C), 61.174(a)(2), and 61.174(a)(3), are not delegated to the commissioner and must be made by the administrator.

C. Code of Federal Regulations, title 40, part 61, subpart P, as amended, entitled "National Emission Standard for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities."

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9920 ASBESTOS.

Code of Federal Regulations, title 40, part 61, subpart M, as amended, entitled "National Emission Standard for Asbestos," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 61.149(c)(2), 61.150(a)(4), 61.151(c), 61.152(b)(3), 61.154(d), and 61.155(a), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9921 DEFINITIONS.

Subpart 1. **Scope.** The following definitions of words and phrases are controlling for the purposes of parts 7011.9921 to 7011.9927:

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 ft². 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 7011.9921 to 7011.9927 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; 18 SR 614*

7011.9922 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 7011.9925.

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 7011.9925.

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*

History: *18 SR 614*

7011.9923 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 7011.9925.

Statutory Authority: *MS s 116.07 subd 4*

History: *18 SR 614*

7011.9924 [Repealed, 18 SR 580]

7011.9925 FABRIC FILTER SPECIFICATIONS.

Subpart 1. **Requirements.** Fabric filter collection devices referred to in parts 7011.9922, subparts 1 and 2 and 7011.9923, 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/ft² 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/yd², an average thickness of not less than 1/16 inch, and an air flow permeability of not more than 35 cfm/ft².

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*

History: *18 SR 614*

7011.9926 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 7011.9922, subparts 1 and 2 and 7011.9923, 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 7011.9921 to 7011.9927 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 operation 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; 18 SR 614*

7011.9927 INSTALLATION AND OPERATION OF CONTROL EQUIPMENT.

Whenever a fabric filter, wet collector, or other control device is required by parts 7011.9921 to 7011.9927, 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*

History: *18 SR 614*

7011.9930 BENZENE.

The following National Emission Standards for Hazardous Air Pollutants are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 61, subpart J, as amended, entitled "National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 61.112(c), are not delegated to the commissioner and must be made by the administrator.

B. Code of Federal Regulations, title 40, part 61, subpart L, as amended, entitled "National Emission Standard for Benzene Emissions from Coke-By-Product Recovery Plants," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 61.136(d), are not delegated to the commissioner and must be made by the administrator.

C. Code of Federal Regulations, title 40, part 61, subpart Y, as amended, entitled "National Emission Standard for Benzene Emissions from Benzene Storage Vessels," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 61.273, are not delegated to the commissioner and must be made by the administrator.

D. Code of Federal Regulations, title 40, part 61, subpart BB, as amended, entitled "National Emission Standard for Benzene Emissions from Benzene Transfer Operations."

E. Code of Federal Regulations, title 40, part 61, subpart FF, as amended, entitled "National Emission Standard for Benzene Waste Operations," except that decisions made by the administrator under Code of Federal Regulations, title 40, part 61.353, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9940 BERYLLIUM.

The following National Emission Standards for Hazardous Air Pollutants are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 61, subpart C, as amended, entitled "National Emission Standard for Beryllium."

B. Code of Federal Regulations, title 40, part 61, subpart D, as amended, entitled "National Emission Standard for Beryllium Rocket Motor Firing."

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9941 [Repealed, 18 SR 580]

7011.9942 [Repealed, 18 SR 580]

7011.9943 [Repealed, 18 SR 580]

7011.9944 [Repealed, 18 SR 580]

7011.9945 [Repealed, 18 SR 580]

7011.9950 MERCURY.

Code of Federal Regulations, title 40, part 61, subpart E, as amended, entitled "National Emission Standard for Mercury," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 61.53(c)(4) and 61.55(d), are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9951 [Repealed, 18 SR 580]

7011.9952 [Repealed, 18 SR 580]

7011.9953 [Repealed, 18 SR 580]

7011.9954 [Repealed, 18 SR 580]

7011.9955 [Repealed, 18 SR 580]

7011.9960 RADON.

The following National Emission Standards for Hazardous Air Pollutants are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 61, subpart B, as amended, entitled "National Emission Standards for Radon Emissions from Underground Uranium Mines."

B. Code of Federal Regulations, title 40, part 61, subpart Q, as amended, entitled "National Emission Standard for Radon Emissions from Department of Energy Facilities."

C. Code of Federal Regulations, title 40, part 61, subpart R, as amended, entitled "National Emission Standards for Radon Emissions from Phosphogypsum Stacks."

D. Code of Federal regulations, title 40, part 61, subpart T, as amended, entitled "National Emission Standards for Radon Emissions from the Disposal of Uranium Mill Tailings."

E. Code of Federal Regulations, title 40, part 61, subpart W, as amended, entitled "National Emission Standards for Radon Emissions from Operating Mill Tailings."

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9970 RADIONUCLIDES.

The following National Emissions Standards for Hazardous Air Pollutants are adopted and incorporated by reference:

A. Code of Federal Regulations, title 40, part 61, subpart H, as amended, entitled "National Emission Standards for Emissions of Radionuclides Other than Radon from Department of Energy Facilities."

B. Code of Federal Regulations, title 40, part 61, subpart I, as amended, entitled "National Emission Standards for Radionuclide Emissions From Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities Not Covered by Subpart H."

C. Code of Federal Regulations, title 40, part 61, subpart K, as amended, entitled "National Emission Standards for Radionuclide Emissions from Elemental Phosphorus Plants."

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9980 VINYL CHLORIDE.

Code of Federal Regulations, title 40, part 61, subpart F, as amended, entitled "National Emission Standard for Vinyl Chloride," is adopted and incorporated by reference, except

that decisions made by the administrator under Code of Federal Regulations, title 40, part 61.66, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*

7011.9990 VOLATILE HAZARDOUS AIR POLLUTANTS.

Code of Federal Regulations, title 40, part 61, subpart V, as amended, entitled "National Emission Standard for Equipment Leaks (Fugitive Emission Sources)," is adopted and incorporated by reference, except that decisions made by the administrator under Code of Federal Regulations, title 40, parts 61.242–1(c)(2) and 61.244, are not delegated to the commissioner and must be made by the administrator.

Statutory Authority: *MS s 116.07*

History: *18 SR 580*