

1 **Pollution Control Agency**

2 **Adopted Permanent Rules Relating to Municipal Waste Combustors**

3 **7007.0501 ADDITIONAL CONTENTS REQUIRED IN A PERMIT APPLICATION**
4 **FOR A WASTE COMBUSTOR.**

5 Subpart 1. **Additional requirements.** In addition to the information required by part
6 7007.0500, a person who requests an air emission permit for a waste combustor subject
7 to parts 7011.1201 to 7011.1290 shall submit to the commissioner the information
8 required by subparts 2 to 7.

9 [For text of subps 2 to 8, see M.R.]

10 **7007.0801 CONDITIONS FOR AIR EMISSION PERMITS FOR WASTE**
11 **COMBUSTORS.**

12 Subpart 1. **Additional permit conditions.** In addition to the conditions in part
13 7007.0800, an air emission permit for a waste combustor shall contain conditions as
14 specified in subpart 2 or 3. In amending, modifying, or reissuing a waste combustor's air
15 emissions permit which contains a provision that restricts mercury emissions from the
16 facility, the commission shall, at a minimum, continue that permit restriction at the same
17 level unless the applicant demonstrates that no good cause exists to do so.

18 Subp. 2. **Mixed municipal solid waste or refuse-derived fuel waste combustors.** An
19 air emissions permit for a waste combustor combusting mixed municipal solid waste or
20 refuse-derived fuel shall:

21 [For text of items A to D, see M.R.]

22 E. require the implementation of an industrial waste management plan as
23 described in part 7011.1250;

24 F. for Class C, D, III, and IV waste combustors, require the implementation of a
25 plan as described in part 7011.1255 to identify, separate, and collect solid wastes which
26 contain mercury before the mercury is combusted; and

7007.0801

1 G. include operating conditions that ensure that the facility will continue to emit
2 mercury emissions less than 50 percent of the applicable standard if the waste
3 combustor elects to conduct ~~annual~~ mercury emissions testing as allowed in part
4 7011.1270 and Minnesota Statutes, section 116.85. If the permit must be amended in
5 order to include these conditions, the procedures of part 7007.1400 shall be used.

6 Subp. 3. **Waste combustors of nonmixed municipal solid waste.** An air emissions
7 permit for a waste combustor which does not combust mixed municipal solid waste or
8 refuse-derived fuel shall:

9 A. prohibit initiation of operation of the waste combustor unless the permittee has
10 an ash management plan approved by the commissioner;

11 B. provide a schedule for testing of waste combustor ash;

12 C. require the implementation of an industrial waste management plan as
13 described in part 7011.1250;

14 D. require the implementation of a plan as described in part 7011.1255 to identify,
15 separate, and collect solid wastes which contain mercury before the mercury is
16 combusted;

17 E. for Class IV waste combustors, require the installation and operation of
18 equipment necessary to achieve ambient pollutant concentrations that would have been
19 achieved with the use of the minimum stack height required in part 7011.1235, subpart
20 1; and

21 F. include operating conditions that ensure that the facility will continue to emit
22 mercury emissions less than 50 percent of the applicable standard if the waste
23 combustor elects to conduct annual mercury emissions testing as allowed in part
24 7011.1270 and Minnesota Statutes, section 116.85. If the permit must be amended in
25 order to include these conditions, the procedures of part 7007.1400 shall be used.

26 **7007.1400 ADMINISTRATIVE PERMIT AMENDMENTS.**

7007.1400

1 Subpart 1. **Administrative amendments allowed.** The agency may make the permit
2 amendments described in this subpart through the administrative permit amendment
3 process described in this part. An owner or operator of a stationary source shall request
4 an administrative amendment if changes are to be made under item B or E:

5 [For text of items A to F, see M.R.]

6 G. an amendment to clarify a permit term;

7 H. an amendment to extend a deadline in a permit by no more than 120 days,
8 provided that the agency may only extend a deadline established by an applicable
9 requirement described in part 7007.0100, subpart 7, items A to K, if the agency has been
10 delegated authority to make such extensions by the administrator. Notwithstanding the
11 previous sentence, the agency may do an administrative amendment to extend a testing
12 deadline in a permit up to 365 days if the agency finds that the extension is needed to
13 allow the permittee to test at worst case conditions as required by part 7017.2025,
14 subpart 2; and

15 I. an amendment to include operating conditions that ensure that waste
16 combustors emit mercury at less than 50 percent of the applicable standard.

17 [For text of subps 2 to 7, see M.R.]

18 **7011.0551 RECORDKEEPING AND REPORTING FOR INDIRECT HEATING**
19 **UNITS COMBUSTING SOLID WASTE.**

20 Subpart 1. **Application.** The owner or operator of indirect heating equipment
21 combusting mixed municipal solid waste, or refuse-derived fuel, ~~or industrial solid~~
22 ~~waste~~ which makes up 30 percent or less by weight of total fuel input, as determined by
23 subpart 2, shall comply with the conditions of Minnesota Statutes, section 116.90, and
24 the conditions of this part. If the unit combusts more than 30 percent of mixed
25 municipal solid waste, or refuse-derived fuel, ~~or industrial solid waste~~, parts 7011.1201
26 to 7011.1290 apply.

1 Subp. 2. **Calculation.** The fuel feed stream composition calculation shall be the ratio
2 of the weights of mixed municipal solid waste, and refuse-derived fuel, ~~and industrial~~
3 ~~solid waste~~ to mixed municipal solid waste, refuse-derived fuel, ~~industrial solid waste,~~
4 and all other fuels delivered to the combustion chamber. The calculation shall be made
5 for each 24-hour period that the equipment is operated.

6 Subp. 3. **Log.** The owner or operator shall maintain an operating log where the date,
7 weights of mixed municipal solid waste, and refuse-derived fuel, ~~and industrial solid~~
8 ~~waste~~ combusted, weight of each other fuel combusted, and the result of the calculation
9 made in subpart 2 is recorded daily.

10 Subp. 4. **Report.** The owner or operator shall submit to the commissioner a quarterly
11 report containing the date, weights of mixed municipal solid waste, and refuse-derived
12 fuel, ~~and industrial solid waste,~~ and the weight of each other fuel combusted during the
13 quarter. The reports shall be submitted within 30 days following December 30, March
14 30, June 30, and September 30 of each year.

15 **7011.0625 RECORDKEEPING AND REPORTING FOR DIRECT HEATING UNITS**
16 **COMBUSTING SOLID WASTE.**

17 Subpart 1. **Application.** The owner or operator of direct heating equipment
18 combusting mixed municipal solid waste, or refuse-derived fuel, ~~or industrial solid~~
19 ~~waste~~ which makes up 30 percent or less by weight of total fuel weight input, as
20 determined by subpart 2, shall comply with the conditions of Minnesota Statutes,
21 section 116.90, and subparts 3 and 4. If the unit combusts more than 30 percent of mixed
22 municipal solid waste, or refuse-derived fuel, ~~or industrial solid waste,~~ parts 7011.1201
23 to 7011.1290 apply.

24 Subp. 2. **Calculation.** The fuel feed stream composition calculation shall be the ratio
25 of the weights of mixed municipal solid waste, and refuse-derived fuel, ~~and industrial~~
26 ~~solid waste~~ to mixed municipal solid waste, refuse-derived fuel, ~~industrial solid waste,~~

1 and all other fuels delivered to the combustion chamber. The calculation shall be made
2 for each 24-hour period that the equipment is operated.

3 Subp. 3. **Log.** The owner or operator shall maintain an operating log where the date,
4 weight of mixed municipal solid waste, and refuse-derived fuel, ~~and industrial solid~~
5 ~~waste combusted~~, weight of each other fuel combusted, and the result of the calculation
6 made in subpart 2 is recorded daily.

7 Subp. 4. **Reports.** The owner or operator shall submit to the commissioner a quarterly
8 report containing the date, weight of mixed municipal solid waste, and refuse-derived
9 fuel, ~~and industrial solid waste~~, and weight of each other fuel combusted during the
10 quarter. The reports shall be submitted within 30 days following December 30, March
11 30, June 30, and September 30 of each year.

12 7011.1201 DEFINITIONS.

13 Subpart 1. **Scope.** As used in parts 7007.0200, 7007.0250, 7007.0501, 7007.0801, and
14 7011.1201 to 7011.1290 the following words have the meanings defined in this part.

15 Subp. 1a. **Statutes and other rules.** The definitions in Minnesota Statutes, section
16 116.06, and in part 7001.0010 and chapters 7005, 7007, 7009, 7011, 7017, and 7019 apply
17 to terms in parts 7011.1201 to 7011.1290, unless the terms are specifically otherwise
18 defined in this part.

19 [For text of subps 5 and 6, see M.R.]

20 Subp. 7. [See repealer].

21 [For text of subp 8, see M.R.]

22 Subp. 9. **Class A waste combustor.** "Class A waste combustor" means that the ~~total of~~
23 ~~the design capacities~~ capacity for ~~all a~~ a waste combustor ~~units at a stationary source unit~~
24 is 93.75×10^6 Btu/hr or more, the waste combustor units combust primarily mixed
25 municipal solid waste or RDF, and construction of the waste combustor was
26 commenced on or before September 20, 1994.

1 Subp. 10. [See repealer.]

2 Subp. 11. **Class C waste combustor.** "Class C waste combustor" means that the total
3 of the design capacities for all waste combustor units at a stationary source is 15×10^6
4 Btu/hr or more and less than 93.75×10^6 Btu/hr, the waste combustor units combust
5 primarily mixed municipal solid waste or RDF, and construction of the waste combustor
6 was commenced on or before September 20, 1994.

7 [For text of subp 12, see M.R.]

8 Subp. 13. **Class I waste combustor.** "Class I waste combustor" means that the design
9 capacity for a waste combustor unit is 93.75×10^6 Btu/hr or more, and that construction
10 of the unit is commenced after September 20, 1994, or modification or reconstruction is
11 commenced after June 19, 1996.

12 Subp. 14. **Class II waste combustor.** "Class II waste combustor" means that the design
13 capacity for a waste combustor unit is 15×10^6 Btu/hr or more and less than 93.75×10^6
14 Btu/hr, and that construction of the unit is commenced after September 20, 1994, or
15 modification or reconstruction is commenced after June 19, 1996.

16 [For text of subps 15 and 16, see M.R.]

17 Subp. 17. **Cofired unit.** "Cofired unit" means an emissions unit which combusts
18 mixed municipal solid waste or RDF with a fuel that is not mixed municipal solid waste
19 or RDF and 30 percent or less by weight of the total fuel input is comprised in aggregate
20 of mixed municipal solid waste or RDF as measured on a 24-hour basis. The fuel feed
21 stream composition calculation shall be the ratio of the weights of mixed municipal
22 solid waste and RDF to mixed municipal solid waste, RDF, and all other fuels delivered
23 to the combustion chamber.

24 [For text of subps 18 to 20, see M.R.]

25 Subp. 21. **Energy recovery facility.** "Energy recovery facility" means an emissions
26 unit or emission facility used to capture the heat value of solid waste for conversion to

1 steam, electricity, or immediate heat value by direct combustion or by burning an
2 intermediate fuel product derived from solid waste. For the purposes of parts 7011.1201
3 to 7011.1290, this definition does not include landfill facilities that recover methane
4 gases, or facilities processing solid waste to convert the solid waste to an intermediate
5 fuel product.

6 [For text of subps 22 to 29, see M.R.]

7 Subp. 30. **Initial start-up.** "Initial start-up" means the date on which solid waste is
8 first fired in a new, modified, retrofitted, or reconstructed emissions unit.

9 [For text of subp 31, see M.R.]

10 Subp. 32. **Maximum demonstrated capacity.** For waste combustors with heat
11 recovery, "maximum demonstrated capacity" means the maximum four-hour integrated
12 average load for each waste combustor unit achieved during four consecutive hours
13 during the most recent test during which compliance with the PCDD/PCDF limit in
14 part 7011.1225 is achieved, as measured by steam flow or alternative method as
15 approved by the commissioner. For waste combustors without heat recovery,
16 "maximum demonstrated capacity" means the maximum four-hour arithmetic average
17 input rate for each waste combustor unit achieved during the most recent test during
18 which compliance with the PCDD/PCDF limit was achieved. If PCDD/PCDF testing is
19 not required to be conducted, the maximum demonstrated capacity is the capacity
20 achieved during the conduct of the most recent test for which compliance with
21 particulate matter standards and carbon monoxide in part 7011.1225 is demonstrated.

22 [For text of subps 33 and 34, see M.R.]

23 Subp. 34a. **Modification or modified municipal waste combustor unit.**
24 "Modification" or "modified municipal waste combustor unit" means a municipal waste
25 combustor unit to which changes have been made after June 19, 1996, if the cumulative
26 cost of the changes, over the life of the unit, exceed 50 percent of the original cost of

1 construction and installation of the unit (not including the cost of any land purchased in
2 connection with such construction or installation) updated to current costs; or any
3 physical change in the municipal waste combustor unit or change in the method of
4 operation of the municipal waste combustor which increases the amount of any air
5 pollutant emitted by the unit for which standards have been established under section
6 129 or section 111 of the Clean Air Act. Increases in the amount of any air pollutant
7 emitted by the municipal waste combustor unit are determined at 100 percent physical
8 load capability and downstream of all air pollution control devices, with no
9 consideration given for load restrictions based on permits or other nonphysical
10 operational restrictions.

11 [For text of subp 35, see M.R.]

12 Subp. 36. **Normal start-up.** "Normal start-up" means the period of time between the
13 initial start-up of a new, modified, retrofitted, or reconstructed emissions unit of a waste
14 combustor, or emissions unit of a waste combustor that is modified, retrofitted, or
15 reconstructed to meet the requirements of parts 7011.1201 to 7011.1290, and the lesser of
16 60 days after achieving the maximum production rate at which the emissions unit will
17 operate or 180 days after initial start-up.

18 If no modification, retrofit, or reconstruction of a Class D or IV waste combustor is
19 necessary to meet the requirements of parts 7011.1201 to 7011.1290, then normal start-up
20 means the period of time between June 20, 1994, and the applicable date in part
21 7011.1215, subpart 6.

22 If no modification, retrofit, or reconstruction of a Class A or C waste combustor is
23 necessary to meet the requirements of parts 7011.1201 to 7011.1290, then normal start-up
24 means the period of time between the effective date of this part and the date by which
25 the waste combustor must demonstrate compliance with waste combustor emission
26 standards of part 7011.1225, as allowed in part 7011.1215, subparts 5 and 5a.

1 **Subp. 36a. One-hour average.** "One-hour average" means the arithmetic mean of all
 2 the individual data points collected by a monitor in an hour. Each hourly average
 3 begins at the top of the hour and ends at the top of the succeeding hour.

4 [For text of subps 37 to 42, see M.R.]

5 **Subp. 42a. Reconstruction.** "Reconstruction" means rebuilding a municipal waste
 6 combustor unit for which the reconstruction commenced after June 19, 1996, and the
 7 cumulative costs of the construction over the life of the unit exceed 50 percent of the
 8 original cost of construction and installation of the unit (not including any cost of land
 9 purchased in connection with the construction or installation) updated to current costs
 10 (current dollars).

11 [For text of subp 43, see M.R.]

12 **Subp. 43a. Retrofit.** "Retrofit" means the installation of air pollution control,
 13 combustion, or monitoring equipment to a waste combustor for purposes of reducing
 14 air pollution emissions. If installing air pollution control equipment, combustion
 15 equipment, or monitoring equipment would be a modification as defined in subpart
 16 34a, or reconstruction as defined in subpart 42a, then the activity is not a retrofit.

17 [For text of subps 44 and 45, see M.R.]

18 **Subp. 45a. Tires.** "Tires" has the meaning given in Minnesota Statutes, section
 19 115A.90, subdivision 7.

20 **Subp. 46. Waste combustor.** "Waste combustor" means any emissions unit or
 21 emission facility where mixed municipal solid waste, solid waste, or refuse-derived fuel
 22 is combusted, and includes incinerators, energy recovery facilities, or other combustion
 23 devices. A metals recovery incinerator is a waste combustor. A combustion device
 24 combusting primarily wood, or at least 70 percent fossil fuel and wood in combination
 25 with up to 30 percent papermill wastewater treatment plant sludge, is not a waste
 26 combustor. A soil treatment facility, paint burn-off oven, wood heater, or residential
 27 fireplace is not a waste combustor.

1 Subp. 47. [See repealer.]

2 [For text of subps 48 to 50, see M.R.]

3 **7011.1205 INCORPORATIONS BY REFERENCE.**

4 For the purpose of parts 7007.0501, 7007.0801, and 7011.1201 to 7011.1290, the
5 documents in items A to C are incorporated by reference. These documents are subject
6 to frequent change.

7 [For text of items A to ~~C~~ and B, see M.R.]

8 C. The following material is available from the American Society of Mechanical
9 Engineers (ASME), 345 East 47th Street, New York, New York 10017 or from the State
10 Law Library, Judicial Center, 25 Constitution Avenue, Saint Paul, Minnesota 55155.

11 (1) Standards for the Qualification and Certification of Resource Recovery
12 Facility Operators, ASME QRO-1-1989, ~~March 1990~~1994, May 1994.

13 [For text of subitems (2) and (3), see M.R.]

14 **7011.1210 NOTIFICATION REQUIRED OF CLASS IV WASTE COMBUSTORS.**

15 [For text of subpart 1, see M.R.]

16 Subp. 2. **Waste combustors at hospitals.** The owner or operator of a Class IV waste
17 combustor located at a hospital and installed after June 20, 1994, shall notify the
18 commissioner 90 days prior to the installation of the waste combustor. The notice
19 submitted by the owner or operator of this Class IV waste combustor shall contain the
20 information in items A to H.

21 [For text of items A to G, see M.R.]

22 H. The signature of the owner or operator with the following certification:
23 "I certify under penalty of law that this document and all attachments were
24 prepared under my direction or supervision in accordance with a system designed
25 to assure that qualified personnel properly gather and evaluate the information

1 submitted. Based on my inquiry of the person or persons who manage the system, or
2 those persons directly responsible for gathering the information, the information
3 submitted is, to the best of my knowledge and belief, true, accurate, and complete.
4 Further, the waste combustor complies with the design, installation, and operating
5 requirements of Minnesota Rules, parts 7011.1201 to 7011.1290, applicable to a
6 Class IV waste combustor."

7 **7011.1215 APPLICABILITY OF STANDARDS OF PERFORMANCE FOR WASTE**
8 **COMBUSTORS.**

9 Subpart 1. **Waste combustors.** A person who constructs, modifies, reconstructs, or
10 operates a waste combustor shall comply with parts 7011.1201 to 7011.1290, except as
11 provided in subparts 2, 2a, and 3.

12 [For text of subp 2, see M.R.]

13 Subp. 2a. **Units combusting tires or fuel derived from tires.** A waste combustor
14 burning a single-item waste stream of tires or fuel derived from tires is not subject to
15 parts 7011.1201 to 7011.1290 if the owner or operator notifies the commissioner in
16 writing of its intent to combust only tires, and provides data documenting that the unit
17 qualifies for this exemption.

18 Subp. 2b. **Units combusting ~~industrial solid waste~~ contaminated with used oil.** ~~A~~
19 ~~waste combustor burning up to 30 percent industrial solid waste is not subject to parts~~
20 ~~7011.1201 to 7011.1290, and shall comply with the applicable requirements of parts~~
21 ~~7011.0500 to 7011.0551 or 7011.0600 to 7011.0625~~ An owner of a solid-fuel-fired indirect
22 or direct heating source burning fossil fuel with only wastes contaminated with used oil
23 generated by the owner is not subject to parts 7011.1201 to 7011.1290.

24 Subp. 3. **Exemptions from standards of performance.** Crematoria, pathological waste
25 combustors, and waste combustors used solely for the disposal of animal carcasses are
26 exempt from the requirements of parts 7011.1210 to 7011.1290, and shall meet the
27 conditions of this subpart.

1 [For text of items A to C, see M.R.]

2 Subp. 4. **Standards.** The standards of parts 7011.1227, 7011.1228, 7011.1229, 7011.1230,
3 7011.1231, 7011.1233, 7011.1240, subpart 2, and 7011.1272, subpart 2, apply at all times
4 when waste is being continuously burned, except during periods of start-up, shutdown,
5 or malfunction, provided that the duration of start-up, shutdown, or malfunction does
6 not exceed three hours. Fugitive emissions standards applicable to ash conveying
7 systems do not apply during maintenance and repair of ash conveying systems.
8 "Malfunction" means any sudden and unavoidable failure of air pollution control
9 equipment or process equipment or of a process to operate in a normal or usual manner.
10 Failures that are caused entirely or in part by poor maintenance, careless operation, or
11 any other preventable upset condition or preventable equipment breakdown are not
12 considered malfunctions.

13 The start-up period commences when the waste combustor begins the continuous
14 burning of solid waste and does not include any warm-up period when the waste
15 combustor is combusting fossil fuel or other solid fuel.

16 Continuous burning is the continuous, semicontinuous, or batch feeding of solid
17 waste for purposes of waste disposal, energy production, or providing heat to the
18 combustion system in preparation for waste disposal or energy production. The use of
19 solid waste solely to provide thermal protection of the grate or hearth during the
20 start-up period when municipal solid waste is not being fed to the grate is not
21 considered to be continuous burning.

22 Subp. 5. **Transition for Class A waste combustors.** The application of the waste
23 combustor standards to Class A waste combustors are described in this subpart.

24 A. Class A waste combustors shall demonstrate compliance with parts 7011.1201 to
25 7011.1290 by 60 days after the effective date of this part, except that the conditions of
26 part 7011.1240, subpart 1, shall be met according to the schedule in part 7011.1240,
27 subpart 1a.

7011.1215

1 B. If the Class A waste combustor cannot comply with these waste combustor
2 standards by 60 days after the effective date of this part, the waste combustor shall cease
3 operating 60 days after the effective date of this part. If the waste combustor cannot
4 comply by 60 days after the effective date of this part, and elects to continue operating,
5 the waste combustor owner or operator shall submit to the commissioner by 30 days
6 after the effective date of this part a schedule that contains the following items:

7 (1) a compliance schedule that contains the following milestones:

8 (a) a final control plan;

9 (b) the date that the owner or operator will award contracts for emission
10 control systems or for process modifications, or issue orders for the purchase of
11 component parts to accomplish emission control or process modifications described in
12 the final control plan;

13 (c) the date that the owner or operator will initiate on-site construction or
14 installation of emissions control or process changes;

15 (d) the date that the owner or operator will complete on-site construction or
16 installation of emissions control or process changes; and

17 (e) the date that the owner or operator will demonstrate compliance with the
18 emissions limitations and monitoring requirements of parts 7011.1201 to 7011.1290. This
19 date shall not be any later than December 19, 2000; and

20 (2) for each waste combustor whose compliance schedule shows that the unit
21 will not achieve the emission limits of part 7011.1225 by 60 days after the effective date
22 of this part, the results of a performance test for PCDD/PCDF emissions from each
23 waste combustor unit. If a facility contains identical waste combustor units, only one of
24 the identical units needs to be tested. The owner or operator shall provide an
25 explanation with the submittal of why the units can be assumed to be identical. The
26 performance test shall have been conducted during or after the year 1990. The
27 performance test shall be conducted according to the procedures of part 7011.1265.

7011.1215

1 C. Physical or operational changes made to a Class A waste combustor unit
2 primarily for the purpose of complying with the emission limits in parts 7011.1201 to
3 7011.1290 prior to December 19, 2000, are not considered in determining whether the
4 unit is a modified or reconstructed waste combustor subject to the requirements of Code
5 of Federal Regulations, title 40, part 60, subpart Ea or Eb.

6 Subp. 5a. **Transition for Class C waste combustors.** A Class C waste combustor shall
7 demonstrate compliance with parts 7011.1201 to 7011.1290 by 60 days from the effective
8 date of this rule.

9 [For text of subp 6, see M.R.]

10 **7011.1220 PROHIBITIONS.**

11 [For text of subpart 1, see M.R.]

12 Subp. 2. **Solid wastes requiring special approval.** No waste combustor shall combust
13 yard waste or tires unless specifically allowed to do so in the air emission permit for the
14 waste combustor.

15 **7011.1225 STANDARDS OF PERFORMANCE FOR WASTE COMBUSTORS.**

16 Subpart 1. **Class A or C waste combustor.**

17 A. No owner or operator of a Class A or C waste combustor shall cause to be
18 emitted into the atmosphere from each waste combustor unit gases in excess of the
19 applicable standards of performance shown in parts 7011.1227 and 7011.1228.
20 Emissions, except opacity, shall be calculated under standard conditions corrected to
21 seven percent oxygen on a dry volume basis. An owner or operator of a mixed
22 municipal solid waste or RDF waste combustor may determine compliance with the
23 emission limitations using carbon dioxide measurements corrected to an equivalent of
24 seven percent oxygen.

25 B. No owner or operator of a Class A or C waste combustor shall cause to be
26 emitted into the atmosphere visible emissions of combustion ash from an ash conveying
7011.1225

1 system, or buildings or enclosures of ash conveying systems, including conveyor
 2 transfer points, in excess of five percent of the observation period (i.e. 9 minutes per
 3 three-hour period), as determined by Code of Federal Regulations, title 40, part 60,
 4 Appendix A, Method 22, as amended. This limit does not apply to visible emissions
 5 discharged inside buildings or enclosures of ash conveying systems.

6 Subp. 2. **Class I or II waste combustors.** No owner or operator of a Class I or II waste
 7 combustor shall cause to be emitted into the atmosphere from each waste combustor
 8 unit gases in excess of the standards of performance shown in part 7011.1230.

9 [For text of subps 3 to 5, see M.R.]

10 **7011.1227 TABLE 1.**

11 The table in this part governs emission limitations for Class A and C waste combustor
 12 units. For acid gas limitations, either the applicable percent reduction or the parts per
 13 million by volume emission limitation, whichever is less stringent, is the emission
 14 limitation for the waste combustor.

	Class C	Class A
15		
16		
17	Particulate Matter	
18	Front-half	0.012 gr/dscf
19	Total	0.020 gr/dscf
20		
21	PCDD/PCDF	
22	Total	500 ng/dscm
23		
24	Acid Gases:	
25	Hydrogen chloride	95% control
26		or 29 ppm
27	Sulfur dioxide	75% control
28		or 29 ppm
29		
30	Carbon Monoxide	
31	Modular starved air	50 ppm
32	Modular excess air	50 ppm
33	Mass burn waterwall	100 ppm

1	Mass burn		
2	refractory	100 ppm	100 ppm
3	Mass burn rotary		
4	refractory	100 ppm	100 ppm
5	Mass burn rotary		
6	waterwall	250 ppm	250 ppm
7	Bubbling fluidized		
8	bed	100 ppm	100 ppm
9	Circulating		
10	fluidized bed	100 ppm	100 ppm
11	Pulverized coal/		
12	refuse-derived		
13	fuel mixed fuel-		
14	fired combustor	NA	150 ppm
15	Spreader stoker		
16	coal/refuse-		
17	derived fuel		
18	mixed fuel-fired		
19	combustor	NA	200 ppm
20	RDF stoker	150 ppm	200 ppm
21			
22	Opacity	10%	10%
23			
24	Mercury (short-term)		
25	Modular with ESP	1,000 µg/dscm	NA
26	Mass burn	1,000 µg/dscm	NA
27			
28	Modular, mass	100 µg/dscm	NA
29	burn, or fluidized	or 85%	
30	bed with wet	removal	
31	or dry scrubber		
32			
33	For all waste	NA	80 µg/dscm or
34	combustors		85% removal
35	except those		
36	combusting RDF		
37	in spreader		
38	stokers		
39			
40	Waste combustor	NA	50 µg/dscm or
41	units combusting		85% removal
42	RDF in spreader		

1	stokers (90-day		
2	test interval)		
3			
4	Mercury (long-term)		
5	Modular with ESP	600 µg/dscm	NA
6	Mass burn	600 µg/dscm	
7			
8	Modular, mass	60 µg/dscm	NA
9	burn, or fluidized	or 85%	
10	bed with wet	removal	
11	or dry scrubber		
12			
13	For all waste	NA	60 µg/dscm or
14	combustors		85% removal
15	except those		
16	combusting RDF		
17	in spreader		
18	stokers		
19			
20	Waste combustor	NA	30 µg/dscm or
21	units combusting		85% removal
22	RDF in spreader		
23	stokers (90-day		
24	test interval)		
25			
26	Waste combustor	NA	30 µg/dscm or
27	units combusting		85% removal
28	RDF in spreader		
29	stokers (12-month		
30	test interval)		
31			
32	Cadmium	NA	40 µg/dscm
33			
34	Lead	NA	440 µg/dscm
35			

7011.1228 NITROGEN OXIDES LIMITS FOR CLASS A WASTE COMBUSTORS.

The nitrogen oxides emission limits in Table A apply to each waste combustor unit at a Class A waste combustor facility. The owner or operator shall use the procedures of part 7011.1260 for determining compliance with the nitrogen oxides emission limits of Table A.

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1 Alternatively, an owner or operator may average nitrogen oxide emissions across the
 2 waste combustor facility according to the procedures in Code of Federal Regulations,
 3 title 40, section 60.33b(d)(1), as amended. Waste combustor units for which emissions
 4 averaging is used shall not exceed the nitrogen oxide emission limits in Table B.

TABLE A

Municipal Waste Combustor Technology	Nitrogen Oxides Emission Limit (parts per million by volume)
Mass burn waterwall	205
<u>Mass burn rotary waterwall</u>	<u>205</u>
Refuse-derived fuel combustor	250
Fluidized bed combustor	180

TABLE B

Municipal Waste Combustor Technology	Nitrogen Oxides Emission Limit (parts per million by volume)
Mass burn waterwall	180
Refuse-derived fuel combustor	230
Fluidized bed combustor	220

22 Before a waste combustor owner or operator may implement emissions averaging,
 23 the owner or operator shall identify units that are included in the nitrogen oxides
 24 emissions averaging plan in either the compliance report required by part 7017.2035 that
 25 contains the results of the units' initial performance tests required by part 7011.1270,
 26 item A, subitem (1), or in the annual report required in part 7011.1285, as applicable
 27 prior to implementing the averaging plan. The units being included in the averaging
 28 plan may be redesignated every calendar year. Partial year averaging is allowable upon
 29 written commissioner approval.

30 **7011.1229 TABLE 2.**

31 The table in this part governs emission limitations for a Class II waste combustor. For
 32 acid gas limitations, either the applicable percent reduction or the parts per million by

1 volume emission limitation, whichever is less stringent, is the emission limitation for the
2 waste combustor.

3

4 Size Class II

5

6 Particulate Matter

7 Front-half 0.015 gr/dscf

8 Total 0.020 gr/dscf

9

10 PCDD/PCDF

11 (total) 30 ng/dscm

12

13 Acid Gases

14 HCl 90% control or 25 ppm

15 SO₂ 80% control or 30 ppm

16

17 Carbon monoxide

18 Modular 50 ppm

19 Mass burn or

20 fluidized

21 bed 100 ppm

22 RDF stoker 150 ppm

23

24 Opacity 10%

25

26 NO_x NA

27

28 Mercury (short-term)

29 Modular 100 µg/dscm

30 or 85% removal

31 Mass Burn 100 µg/dscm

32 or 85% removal

33 RDF (90-day test

34 interval) 50 µg/dscm

35 FBC 100 µg/dscm

36 or 85% removal

37

38 Mercury (long-term)

39 Modular 60 µg/dscm

40 or 85% removal

1	Mass burn	60 µg/dscm
2		or 85% removal
3	RDF (90-day test	30 µg/dscm
4	interval)	or 85% removal
5	FBC	60 µg/dscm
6		or 85% removal
7	RDF (12-month	30 µg/dscm
8	test interval)	or 85% removal

9 **7011.1230 STANDARDS OF PERFORMANCE FOR CLASS I MUNICIPAL WASTE**
 10 **COMBUSTORS.**

11 Subpart 1. **Scope.** The owner or operator of a Class I waste combustor shall comply
 12 with the emission limits, notification, monitoring, testing, recordkeeping, and reporting
 13 requirements of the new source performance standards incorporated in part 7011.1290,
 14 except as provided in subpart 2. In addition, the owner or operator shall comply with
 15 the following limitations:

16 A. if the owner or operator chooses to comply with the operator certification
 17 requirements of Code of Federal Regulations, title 40, section 60.54b, as amended, by
 18 obtaining certification through the Minnesota Pollution Control Agency, then the owner
 19 or operator shall comply with parts 7011.1240, subpart 1; 7011.1281; 7011.1282;
 20 7011.1283; and 7011.1284;

21 B. the general waste combustor facility requirements of part 7011.1245;

22 C. industrial solid waste management plan requirements of part 7011.1250;

23 D. the reporting and response requirements to exceedance of continuously
 24 monitored emissions in part 7011.1260, subpart 7;

25 E. the reporting and response requirements in part 7011.1265, subpart 11, if an
 26 exceedance is measured during the conduct of a performance test; and

27 F. the test or monitoring frequency for a waste composition study of part
 28 7011.1270, item E.

1 Subp. 2. **Mercury emission limitations.** Instead of the mercury emission limits
 2 contained in Code of Federal Regulations, title 40, sections 60.52b(a)(5), 60.58b(d)(2)(ix),
 3 and 60.58b(d)(2)(x), as amended, the owner or operator of a Class I waste combustor
 4 shall comply with the mercury emission limits described in this subpart and the testing
 5 and reporting requirements of parts 7011.1265, subpart 2; and 7011.1270, item E.

6 Class I

7
 8 Mercury (short-term)

9
 10 For all waste 80 µg/dscm or
 11 combustors except 85% removal
 12 those combusting RDF
 13 in spreader stokers

14
 15 Waste combustor 50 µg/dscm or
 16 units combusting RDF 85% removal
 17 in spreader stokers
 18 (90-day test
 19 interval)

20
 21 Mercury (long-term)

22
 23 For all waste 60 µg/dscm or
 24 combustors except 85% removal
 25 those combusting RDF
 26 in spreader stokers

27
 28 Waste combustor 30 µg/dscm or
 29 units combusting RDF 85% removal
 30 in spreader stokers
 31 (90-day test
 32 interval)

33
 34 Waste combustor 30 µg/dscm or
 35 units combusting RDF 85% removal
 36 in spreader stokers
 37 (12-month test
 38 interval)

1 **7011.1235 REQUIREMENTS OF CLASS IV WASTE COMBUSTORS.**

2 [For text of subps 1 and 2, see M.R.]

3 Subp. 2a. **Use of auxiliary fuel.** Auxiliary fuel shall be used to maintain the operating
4 temperatures required in subpart 2 from the time the solid waste feed has been
5 discontinued until the combustion chamber is clear of combustible material or active
6 combustion ceases to exist in the combustion chamber.

7 [For text of subp 3, see M.R.]

8 **7011.1240 OPERATING REQUIREMENTS.**

9 Subpart 1. **Presence of certified operator.** The person described in this subpart shall
10 be present at the waste combustor facility at all times when solid waste is being
11 combusted, except as provided in subpart 1a.

12 A. For Class A, C, I, or II waste combustors, either a chief facility operator or shift
13 supervisor who holds a certificate as described in part 7011.1281, subpart 1.

14 B. For Class D and III waste combustors, either a chief facility operator or shift
15 supervisor who holds a certificate as described in part 7011.1280.

16 C. For Class IV waste combustors, the operator supervisor shall hold a certificate
17 as described in part 7011.1280.

18 Subp. 1a. **Transition period for certifying operators.** Notwithstanding subpart 1,
19 operators shall be certified within the time frames described in items A to C.

20 A. For Class A and C waste combustors:

21 (1) on the effective date of this part or until the conditions of subitems (2) to (4)
22 are met, chief facility operators, and shift supervisors, ~~and control room operators~~ shall
23 hold a certificate as described in part 7011.1280;

24 (2) within 12 months of the effective date of this part, all chief facility operators
25 and shift supervisors employed on the effective date of this part shall have obtained full
26 certification as described in part 7011.1281;

1 (3) notwithstanding subitem (2), within six months of the initial start-up of a
2 waste combustor unit or associated air pollution control equipment, all chief facility
3 operators and shift supervisors shall have obtained full certification as described in part
4 7011.1281; and

5 (4) notwithstanding subitem (2) or (3), individuals, if assuming the duties of
6 chief facility operator or shift supervisor after the effective date of this part, shall have
7 obtained full certification as described in part 7011.1281 within six months of assuming
8 such duties; and

9 (5) within 12 months of the effective date of this part, control room operators
10 shall obtain certification as described in part 7011.1280. After 12 months from the
11 effective date of this part, individuals, if assuming the duties of control room operator
12 for the first time, shall obtain certification as described in part 7011.1280 within six
13 months of assuming such duties.

14 B. For Class I and II waste combustors;

15 (1) within six months of the initial start-up of a waste combustor unit, all chief
16 facility operators and shift supervisors shall have obtained full certification, or have
17 scheduled the exam appropriate to the certification being sought as described in part
18 7011.1281; and

19 (2) notwithstanding subitem (1), individuals, if assuming the duties of chief
20 facility operator or shift supervisor after six months after the initial start-up of a waste
21 combustor unit, shall obtain full certification as described in part 7011.1281 within six
22 months of assuming such duties.

23 Subp. 2. **Particulate matter control device operating temperature.** The inlet gas
24 stream to each particulate matter control device on a waste combustor as measured by
25 part 7011.1260, subpart 4, item A, shall have a temperature of no greater than 30 degrees
26 Fahrenheit above the highest four-hour arithmetic mean temperature measured during

1 four consecutive hours for this gas stream during the most recent performance test for
2 polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans that
3 demonstrated compliance ~~at all times when solid waste is being combusted~~, except as
4 allowed in items A and B.

5 A. For Class A, C, and II waste combustors, during the annual PCDD/PCDF
6 performance test and the two weeks preceding the annual PCDD/PCDF performance
7 test, no particulate matter control device temperature limitations are applicable.

8 B. For Class A, C, and II waste combustors, the commissioner shall waive the
9 particulate matter control device temperature limits for the purpose of evaluating
10 system performance, testing new technology or control technologies, diagnostic testing,
11 or related activities for the purpose of improving facility performance or advancing the
12 state-of-the-art for controlling facility emissions, provided a written notification is
13 submitted to the commissioner 30 days prior to undertaking any of the activities
14 identified in this item, with the following information:

15 (1) a description of the proposed project, and the outcome the project is
16 designed to evaluate;

17 (2) how the project conforms with the activities described in this subpart for
18 which the temperature limit can be waived; and

19 (3) the length of time the project will take to complete.

20 The commissioner shall approve the waiving of the particulate matter control device
21 operating temperature limits provided that the project conforms with the activities
22 described in this subpart for which the temperature limit can be waived, and the project
23 can be accomplished within 14 days.

24 Subp. 3. **Start-up on waste prohibited.** During start-up from a cold furnace, auxiliary
25 fuels shall be used to achieve combustion chamber operating temperature. The use of
26 solid waste solely to provide thermal protection of the grate or hearth during the

1 start-up period when solid waste is not being fed to the grate is not considered to be
2 continuous burning.

3 Subp. 4. [See repealer.]

4 Subp. 5. **Range of operation.** No owner or operator of a waste combustor shall
5 operate the waste combustor while combusting solid waste at a level above 110 percent
6 of the maximum demonstrated capacity of the combustion system, except as allowed in
7 items A and B, without conducting a performance test under part 7011.1265, which
8 demonstrates compliance with the emission limitations of part 7011.1225 at greater than
9 110 percent of the maximum demonstrated capacity.

10 A. For Class A, C, and II waste combustors, during the annual PCDD/PCDF
11 performance test and the two weeks preceding the annual PCDD/PCDF performance
12 test, no waste combustor maximum demonstrated capacity is applicable.

13 B. For Class A, C, and II waste combustors, the commissioner shall waive the
14 maximum demonstrated capacity limit for the purpose of evaluating system
15 performance, testing new technology or control technologies, diagnostic testing, or
16 related activities for the purpose of improving facility performance or advancing the
17 state-of-the-art for controlling facility emissions, provided a written notification is
18 submitted to the commissioner 30 days prior to undertaking any of the activities
19 identified in this item, with the following information:

20 (1) a description of the proposed project, and the outcome the project is
21 designed to evaluate;

22 (2) how the project conforms with the activities described in this subpart for
23 which the maximum demonstrated capacity limit can be waived; and

24 (3) the length of time the project will take to complete.

25 The commissioner shall approve the waiving of the maximum demonstrated capacity
26 limits provided that the project conforms with the activities described in this subpart for

1 which the operating capacity limit can be waived, and the project can be accomplished
2 within 14 days.

3 Subp. 6. [See repealer.]

4 [For text of subps 7 to 9, see M.R.]

5 **7011.1260 CONTINUOUS MONITORING.**

6 Subpart 1. **Combustion chamber temperature monitor.** The owner or operator of a
7 Class D, III, or IV waste combustor shall install and operate at all times temperature
8 monitors that continuously read and record the temperature at the point in the
9 combustion unit one second downstream of the entrance of the last overfire or
10 secondary air injection. The owner or operator may elect to place temperature monitors
11 at another point downstream from the entrance of the last overfire or secondary air
12 injection, provided that the owner or operator conducts mapping of the operating
13 combustion chambers to develop temperature isopleths and correlates these
14 temperatures to the downstream temperature monitors. The averaging period for
15 combustion chamber temperatures shall be four-hour arithmetic block averages
16 calculated from four one-hour arithmetic averages. Each one-hour arithmetic average
17 shall consist of at least ten data points equally spaced in time.

18 Subp. 2. **Particulate matter control device temperature monitors.** The owner or
19 operator of a waste combustor shall install, calibrate, maintain, and operate at all times
20 temperature monitors that continuously read and record the temperatures of the flue
21 gas at the inlet of each particulate matter control device.

22 Subp. 3. **Continuous monitors.** The owner or operator of a waste combustor shall
23 install, calibrate, maintain, and operate a continuous monitoring system when burning
24 solid waste. Monitoring systems that continuously read and record the following
25 outputs shall be installed:

26 A. in Class III, A, C, or D waste combustors:

1 [For text of subitems (1) to (3), see M.R.]

2 (4) for oxygen or carbon dioxide at each location where carbon monoxide, sulfur
3 dioxide, or nitrogen oxides emissions are monitored, to report corrected concentrations
4 of regulated pollutants;

5 [For text of items B and C, see M.R.]

6 Subp. 4. **Averaging periods.** Except as provided in this subpart and ~~subpart~~ subparts
7 4a and 5, the requirements of part 7017.1000 apply to continuous monitoring data
8 collection, reduction, and averaging periods.

9 A. For particulate matter control device inlet temperature monitoring, four-hour
10 arithmetic block averages calculated from four ~~continuous~~ consecutive one-hour
11 arithmetic averages.

12 [For text of item B, see M.R.]

13 C. At waste combustors other than mass burn rotary waterwall combustors or RDF
14 waste combustors for carbon monoxide, a four-hour block average. For mass burn
15 rotary waterwall combustors or RDF stokers, the averaging period for carbon monoxide
16 shall be a daily 24-hour arithmetic average measured between 12 midnight and the
17 following midnight. The four-hour and 24-hour average shall be calculated from
18 one-hour arithmetic averages. At least four points equally spaced in time shall be used
19 to calculate each one-hour average. During periods of calibration, quality assurance
20 audits, and routine maintenance, only two data points during the hour, at least 15
21 minutes apart, are required to calculate an hourly average. Each one-hour average shall
22 be corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic
23 average of the oxygen or carbon dioxide continuous emissions monitoring system.

24 D. For sulfur dioxide, the geometric average of the one-hour arithmetic average
25 emission concentration during each 24-hour daily period measured from midnight to
26 midnight. At least four data points equally spaced in time shall be used to calculate each

1 one-hour arithmetic average. During periods of calibration, quality assurance audits,
2 and routine maintenance, only two data points during the hour, at least 15 minutes
3 apart, are required to calculate an hourly average. Each one-hour average shall be
4 corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic
5 average of the oxygen or carbon dioxide continuous emissions monitoring system.

6 E. For nitrogen oxides, the arithmetic average of the one-hour arithmetic average
7 emission concentration during each 24-hour daily period measured from midnight to
8 midnight. At least four data points equally spaced in time shall be used to calculate each
9 one-hour arithmetic average. During periods of calibration, quality assurance audits,
10 and routine maintenance, only two data points during the hour, at least 15 minutes
11 apart, are required to calculate an hourly average. Each one-hour average shall be
12 corrected to seven percent oxygen on an hourly basis using the one-hour arithmetic
13 average of the oxygen or carbon dioxide continuous emissions monitoring system.

14 [For text of item F, see M.R.]

15 G. For oxygen or carbon dioxide, a one-hour average.

16 **Subp. 4a. Calculation of sulfur dioxide and nitrogen oxide emissions.**

17 A. Compliance with the sulfur dioxide emission limit and percent reduction shall
18 be determined by using a continuous emission monitor to measure sulfur dioxide and
19 calculating a 24-hour daily geometric mean emission concentration and daily geometric
20 mean percent reduction using Code of Federal Regulations, title 40, part 60, Appendix
21 A, Method 19, section 5.4, as amended, to determine the daily geometric average
22 percent reduction in the potential sulfur dioxide emission concentration. For waste
23 combustors which do not operate continuously, compliance shall be determined using a
24 daily geometric mean of all hourly average values for the hours during the day that the
25 facility is operated.

26 B. Compliance with the nitrogen oxides emission standards shall be determined by

1 using a continuous emission monitor for measuring nitrogen oxides and calculating a
2 24-hour daily arithmetic average emission concentration using Code of Federal
3 Regulations, title 40, part 60, Appendix A, Method 19, section 4.1, as amended. For
4 waste combustors which do not operate continuously, compliance shall be determined
5 using an arithmetic mean of all hourly average values for the hours during the day that
6 the facility is operated.

7 Subp. 5. **Installation and operation of continuous monitors.** The owner or operator
8 of a waste combustor with continuous monitors shall comply with the requirements of
9 part 7017.1000, except as provided in items A to H I.

10 [For text of item A, see M.R.]

11 B. Continuous monitors shall be operated so as to measure and record data for at
12 least 75 percent of the hours per day for 90 percent of the days of the calendar quarter
13 that the waste combustor is operating and combusting solid waste.

14 [For text of item C, see M.R.]

15 D. When continuous emissions data for sulfur dioxide removal efficiency, sulfur
16 dioxide or nitrogen oxide emission rates, or carbon monoxide are not obtained because
17 of monitor breakdowns, repairs, calibration checks, and zero and span adjustments,
18 emission data calculations to determine compliance shall be made using the following
19 methods:

20 (1) for sulfur dioxide removal efficiency or sulfur dioxide or nitrogen oxide
21 ~~emission rates, other monitoring systems or other data collection methods as approved~~
22 ~~by the commissioner or~~ concentrations, Code of Federal Regulations, title 40, part 60,
23 Appendix A, Method 19, as amended, to provide valid emission data in order to meet
24 the requirements of item B. For waste combustors other than Class A, other monitoring
25 systems or other data collection methods may be used as approved by the
26 commissioner; and

1 (2) for carbon monoxide, ~~other monitoring systems or other data collection~~
2 ~~methods as approved by the commissioner or Code of Federal Regulations, title 40, part~~
3 60, Appendix A, Method 10, as amended, to provide valid emission data in order to
4 meet the requirements of item B. For waste combustors other than Class A, other
5 monitoring systems or other data collection methods may be used as approved by the
6 commissioner.

7 E. Zero drift and span drift checks of emission monitoring systems shall be
8 conducted in accordance with Code of Federal Regulations, title 40, section 60.13, as
9 amended.

10 F. Span values for continuous monitors shall be as described in subitems (1) to (4).
11 Dual scale monitors may be used to monitor emissions beyond the ranges specified in
12 subitems (1) to (4).

13 (1) The span value of the sulfur dioxide continuous monitors at the inlet to the
14 sulfur dioxide control device is 125 percent of the maximum estimated hourly potential
15 sulfur dioxide emissions of the waste combustor unit, and the span value of the monitor
16 at the outlet of the sulfur dioxide control device is 50 percent of the maximum estimated
17 hourly potential sulfur dioxide emissions of the waste combustor unit.

18 (2) The span value of the nitrogen oxides continuous monitors shall be 125
19 percent of the maximum estimated hourly potential nitrogen oxides emissions of the
20 waste combustor unit.

21 (3) The span value of the oxygen or carbon dioxide monitor shall be 25 percent
22 oxygen or carbon dioxide.

23 (4) The span value of the carbon monoxide monitor shall be 125 percent of the
24 maximum estimated hourly potential carbon monoxide emissions of the waste
25 combustor unit.

26 G. Quarterly accuracy determinations, daily calibration drift tests, and annual

1 relative accuracy test audits shall be performed in accordance with procedures in Code
2 of Federal Regulations, title 40, part 60, Appendix F, as amended, for sulfur dioxide,
3 nitrogen oxides, carbon monoxide, and oxygen or carbon dioxide, except that section
4 5.1.1 (relative accuracy test audit) shall not apply to the oxygen monitor.

5 H. The procedures under Code of Federal Regulations, title 40, section 60.13, as
6 amended, shall be followed for installation, evaluation, and operation of continuous
7 emissions monitoring systems for sulfur dioxide, nitrogen oxides, opacity, and oxygen
8 or carbon dioxide.

9 I. The oxygen or carbon dioxide monitor shall conform to Performance
10 Specification 3 in Code of Federal Regulations, title 40, part 60, Appendix B, as
11 amended, except that section 2.3 shall not apply.

12 Subp. 6. **Recording data from continuous monitoring.** The owner or operator of a
13 waste combustor shall maintain a record of the information contained in this subpart.
14 Waste combustors shall maintain a permanent record of continuously measured
15 parameters. The record of monitoring shall contain:

16 A. the calendar date;

17 B. the following measurements recorded in a manner that allows the data to be
18 immediately accessed upon inspection by the commissioner:

19 (1) all six-minute opacity readings;

20 (2) all one-hour average sulfur dioxide emission concentrations at the inlet and
21 outlet of the acid gas control device if compliance is based on a percent reduction, or at
22 the outlet only if compliance is based on the outlet emission limit; and

23 (3) all one-hour average carbon monoxide and nitrogen oxide emission
24 concentrations, steam flow or alternative unit load measurement parameter as described
25 in part 7011.1265, subpart 4a, combustion chamber temperature, and particulate matter
26 control device temperatures; and

1 C. the following average concentrations and parameters:

2 (1) all 24-hour daily geometric average percent reductions in sulfur dioxide
3 emissions or all 24-hour daily geometric average sulfur dioxide emission concentrations,
4 as applicable;

5 (2) all 24-hour daily arithmetic average nitrogen oxides emission concentrations;

6 (3) all four-hour block or 24-hour daily arithmetic average carbon monoxide
7 emission concentrations, as applicable; and

8 (4) all four-hour block arithmetic average unit load levels and particulate matter
9 control device inlet temperatures.

10 [For text of subp 7, see M.R.]

11 **7011.1265 REQUIRED PERFORMANCE TESTS, METHODS, AND PROCEDURES.**

12 Subpart 1. **Performance test methods and procedures.** An owner or operator of a
13 waste combustor required to conduct performance tests for a waste combustor shall use
14 the performance test methods and procedures specified in parts 7017.2001 to 7017.2060
15 except as modified in this part. Not operating a sorbent injection system for the sole
16 purpose of testing in order to demonstrate compliance with the percent reduction
17 standards for sulfur dioxide and hydrogen chloride is not a modification under part
18 7007.0100, subpart 14.

19 Subp. 2. **Performance test methods for criteria pollutants.** An owner or operator of a
20 waste combustor required to conduct performance tests for particulate matter, sulfur
21 dioxide, or nitrogen oxides shall use test methods as described in items A to F D.

22 A. Part 7011.0725 shall apply to tests for particulate matter, except that for Class I,
23 II, A, and C waste combustors, the minimum sample volume shall be 1.7 dscm, and the
24 probe and filter holder heating systems in the sample train shall be set to provide a gas
25 temperature no greater than 160 degrees Celsius, plus or minus 14 degrees. For Class III,

1 IV, and D waste combustors, the minimum sample volume shall be 0.85 dscm. Smaller
 2 sampling times or sample volumes shall be approved by the commissioner, when the
 3 commissioner determines that they are necessitated by process variables or other
 4 factors. An oxygen or carbon dioxide measurement shall be obtained simultaneously
 5 with each Method 5 test run for particulate matter. Particulate matter emissions,
 6 expressed in gr/dscf, shall be corrected to seven percent oxygen by using the following
 7 formula:

$$8 \quad c_7 = \frac{14c}{9 \quad \text{-----}} \\ 10 \quad \quad \quad (21-\%O_2)$$

11 where: c_7 is the concentration of particulate matter corrected to seven percent oxygen;

12 c is the concentration of particulate matter as measured by Code of Federal
 13 Regulations, title 40, part 60, Appendix A, Method 5, as amended, or in part 7011.0725;
 14 and

15 $\%O_2$ is the percentage of oxygen as measured by Code of Federal Regulations, title 40,
 16 part 60, Appendix A, Method 3, as amended.

17 [For text of subitems (1) and (2), see M.R.]

18 ~~B. For sulfur dioxide emissions, Code of Federal Regulations, title 40, part 60,~~
 19 ~~Appendix A, Method 19, section 5.4, as amended, shall be used to determine the daily~~
 20 ~~geometric average percent reduction in the potential sulfur dioxide emission~~
 21 ~~concentration. Method 19, section 4.3, as amended, shall be used to determine the daily~~
 22 ~~geometric average sulfur dioxide emission concentration. Compliance with the sulfur~~
 23 ~~dioxide emission limit and percent reduction shall be determined by using a continuous~~
 24 ~~emission monitor to measure sulfur dioxide and calculating a 24-hour daily geometric~~
 25 ~~mean emission concentration and daily geometric mean percent reduction using~~
 26 ~~Method 19, sections 4.3 and 5.4, as amended, as applicable. For waste combustors which~~
 27 ~~do not operate continuously, compliance shall be determined using a daily geometric~~

1 ~~mean of all hourly average values for the hours during the day that the facility is~~
2 ~~operated.~~

3 ~~C. For nitrogen oxides emissions, Code of Federal Regulations, title 40, part 60,~~
4 ~~Appendix A, Method 19, section 4.1, as amended, shall be used for determining the~~
5 ~~daily arithmetic average nitrogen oxides emission concentration. Compliance with the~~
6 ~~nitrogen oxides emission standards shall be determined by using a continuous emission~~
7 ~~monitor for measuring nitrogen oxides and calculating a 24-hour daily arithmetic~~
8 ~~average emission concentration using Method 19, section 4.1, as amended. For waste~~
9 ~~combustors which do not operate continuously, compliance shall be determined using~~
10 ~~an arithmetic mean of all hourly average values for the hours during the day that the~~
11 ~~facility is operated.~~

12 [Reletter items D and E as items B and C.]

13 ~~F. D. For fugitive ash emissions, Code of Federal Regulations, title 40, part 60,~~
14 ~~Appendix A, Method 22, as amended, shall be used. The minimum observation time~~
15 ~~shall be a series of three one-hour observations. The observation period shall include~~
16 ~~times when the facility is transferring ash from the waste combustor unit to the area~~
17 ~~where ash is stored or loaded into containers or trucks. The average duration of visible~~
18 ~~emissions per hour shall be calculated from the three one-hour observations. The~~
19 ~~average shall be used to determine compliance with the emission limit.~~

20 ~~Subp. 3. **Performance test methods for other air contaminants.** If not specified in this~~
21 ~~subpart, the owner or operator shall use test methods in Code of Federal Regulations,~~
22 ~~title 40, part 60, Appendix A, or part 61, Appendix B, as amended, or other methods~~
23 ~~determined by the commissioner in writing to be equivalent. For Class A waste~~
24 ~~combustors, other methods used for performance testing must be approved by the~~
25 ~~Environmental Protection Agency.~~

26 ~~A. For hydrogen chloride, the percentage reduction in the potential hydrogen~~
27 ~~chloride emissions (%P_{HCl}) is computed using the following formula:~~

$$\%P_{\text{HCl}} = \frac{(E_i - E_o)}{E_i}$$

1
2
3
4 where E_i is the potential hydrogen chloride emission rate measured at the control device
5 inlet, corrected to seven percent O_2 ; and E_o is the hydrogen chloride emission rate
6 measured at the outlet of the acid gas control device, corrected to seven percent O_2 .
7 Code of Federal Regulations, title 40, part 60, Appendix A, Method 26 or 26A, as
8 amended, shall be used for determining the hydrogen chloride emission rate. The
9 minimum sampling time shall be one hour. An oxygen or carbon dioxide measurement
10 shall be obtained simultaneously with each Method 26 test run for hydrogen chloride.
11 The average of the hydrogen chloride emission concentration or percent reduction is
12 used to determine compliance.

13 B. For PCDD/PCDF emissions, Code of Federal Regulations, title 40, part 60,
14 Appendix A, Method 23, as amended, shall be used for determining compliance with
15 the PCDD/PCDF emission limits. For Class II and A facilities, the minimum sample
16 time shall be four hours per test run. For Class III, C, and D facilities, the minimum
17 sample time shall be three hours per test run. An oxygen or carbon dioxide
18 measurement shall be obtained simultaneously with each Method 23 test run for
19 PCDD/PCDF. The average of the PCDD/PCDF test runs is used to determine
20 compliance.

21 C. For mercury, lead, and cadmium emissions, Code of Federal Regulations, title
22 40, part 60, Appendix A, Method 29, as amended, shall be used for measuring emissions
23 of lead, cadmium, and mercury. The minimum sample volume shall be 1.7 dscm. An
24 oxygen or carbon dioxide measurement shall be obtained simultaneously with each
25 Method 29 test run for lead and cadmium. The average of the lead or cadmium emission
26 concentrations from three test runs or more shall be used to determine compliance. The
27 procedures in item D shall be used to determine compliance with the mercury emission
28 limits.

1 D. To determine the mercury concentration, the arithmetic average of three or
2 more samples at the outlet of the air pollution control device shall be used. The
3 minimum sample volume shall be 1.7 dscm. The maximum sample run time shall be
4 two hours. An oxygen or carbon dioxide measurement shall be obtained simultaneously
5 with each Method 29 test run for mercury.

6 To determine the percent reduction of mercury, concurrent sampling for mercury at
7 the inlet and outlet of the air pollution control system shall be performed at each
8 occurrence of mercury emissions performance testing.

9 Owners and operators of RDF combustors may choose to conduct mercury emissions
10 testing either every 90 days or every 12 months. If the owner or operator of an RDF
11 combustor chooses to conduct testing every 90 days, the requirements of subitems (1)
12 and (2) apply. If the RDF combustor chooses to test every 12 months, the requirements
13 of subitem (3) apply.

14 [For text of subitems (1) and (2), see M.R.]

15 (3) Owners or operators of waste combustors combusting RDF who choose to
16 conduct mercury emission testing every ~~15~~ 12 months shall use the procedures in this
17 subitem to determine compliance with mercury emission limits.

18 (a) The waste combustor is in compliance with the 12-month mercury
19 emission concentration limit if the arithmetic average of three or more samples is less
20 than the 12-month test interval mercury emission concentration limit.

21 (b) If the average computed in unit (a) exceeds the 12-month mercury
22 emission concentration limit, the removal efficiency for each run shall be computed by
23 the equation in subitem (1), unit (b). The waste combustor is in compliance with the
24 12-month mercury emission limit if the arithmetic average of the removal efficiencies is
25 greater than 85 percent.

26 Subp. 4. **Steam flow measurement method.** The method contained in ASME Power

1 Test Codes: Test Codes for Steam Generating Units, PTC 4.1 (1972), section 4,
2 incorporated by reference in part 7011.1205, shall be used for calculating the steam flow
3 required under part 7011.1260, subpart 3, item A, subitem (2). The recommendations of
4 Instruments and Apparatus: Measurement of Quantity of Materials, Interim
5 Supplement 19.5 (1971), chapter 4, incorporated by reference in part 7011.1205, shall be
6 followed for design, construction, installation, calibration, and use of nozzles and
7 orifices, except that measurement devices such as flow nozzles and orifices are not
8 required to be recalibrated after they are installed. All signal conversion elements
9 associated with steam flow measurements must be calibrated according to the
10 manufacturer's instructions before each PCDD/PCDF test, and at least once per year.
11 This annual calibration shall be recorded in the daily operating record as described in
12 part 7011.1285, subpart 2.

13 [For text of subp 4a, see M.R.]

14 Subp. 4b. **Procedures for correlating carbon dioxide and oxygen concentrations.** If
15 carbon dioxide is selected for use in diluent corrections, the relationship between
16 oxygen and carbon dioxide levels shall be established during the initial performance test
17 according to the procedures and methods specified as described in items A to E.

18 A. ~~The emission rate correction factor and the integrated bag sampling and~~
19 ~~analysis procedure of~~ The fuel factor equation in Code of Federal Regulations, title 40,
20 part 60, Appendix A, Method 3B, as amended, shall be used to determine the
21 relationship between oxygen and carbon dioxide at a sampling location. Method 3, 3A,
22 or 3B shall be used to determine the oxygen concentration at the same location as the
23 carbon dioxide monitor.

24 B. Samples shall be taken for at least 30 minutes in each hour.

25 C. Each sample shall represent a one-hour average.

26 D. A minimum of three runs shall be performed.

1 E. The relationship between carbon dioxide and oxygen concentrations that is
2 established shall be submitted as part of the initial performance test report.

3 Subp. 5. **Performance tests required.** Performance tests shall be conducted on waste
4 combustors to determine the emission concentrations of the following air contaminants:

5 A. lead;

6 B. cadmium;

7 C. mercury; and

8 D. any other air contaminant for which an emission limitation applies to the waste
9 combustor, except for opacity and those contaminants for which compliance is
10 demonstrated by the use of a continuous monitor.

11 [For text of subp 6, see M.R.]

12 Subp. 7. **Maximum demonstrated capacity.** For Class I, II, III, A, C, and D waste
13 combustors, maximum demonstrated capacity of each waste combustor unit shall be
14 determined during the initial performance test for PCDD/PCDF and each subsequent
15 performance test during which compliance with the PCDD/PCDF emission limit in part
16 7011.1225 is achieved. For Class IV waste combustors, maximum demonstrated capacity
17 shall be determined during the initial performance test and each subsequent
18 performance test during which compliance with emission limits is demonstrated.

19 Subp. 8. **Particulate matter control device temperature.** The owner or operator of a
20 waste combustor with postcombustion particulate matter control shall determine and
21 record the four-hour arithmetic average gas stream temperature as measured at the inlet
22 to each particulate matter control device during the initial and each subsequent
23 performance test for PCDD/PCDF's demonstrating compliance with the PCDD/PCDF
24 emission limit in part 7011.1225.

25 Subp. 9. [See repealer.]

1 [For text of subps 10 and 11, see M.R.]

2 **7011.1270 PERFORMANCE TEST, WASTE COMPOSITION STUDY, AND ASH**
3 **SAMPLING FREQUENCY.**

4 The owner or operator of a waste combustor shall conduct the performance tests
5 required in part 7011.1265, subpart 5, based on the schedules in items A to E.

6 A. Class A waste combustors shall conduct performance tests as described in
7 subitems (1) to (6).

8 (1) Once within the normal start-up.

9 (2) Once annually after the test in subitem (1), but not more than 12 months
10 following the initial performance test, except that fugitive emissions from ash handling
11 need only to be tested once within normal start-up as required in subitem (1).

12 (3) If all PCDD/PCDF performance tests for all units for a two-year period
13 indicate that PCDD/PCDF emissions are less than or equal to 15 ng/dscm corrected to
14 seven percent O₂ from each unit, then the owner or operator may choose to test one unit
15 for PCDD/PCDF once annually after the test in subitem (2), but not more than 12
16 months following the previous performance test. Thereafter, the owner or operator may
17 continue to test a different unit for PCDD/PCDF each year, in sequence (e.g. unit 1, unit
18 2, etc.). If any annual performance test demonstrates a PCDD/PCDF concentration
19 greater than 15 ng/dscm corrected to seven percent O₂, performance tests thereafter
20 shall be conducted annually on all units until all annual performance tests for all units
21 for a two-year period indicate a PCDD/PCDF emission concentration less than or equal
22 to 15 ng/dscm.

23 (4) The owner or operator will specify what the PCDD/PCDF performance
24 testing schedule is each time a pretest notification is given under the conditions of part
25 7017.2030.

26 (5) From Class A waste combustors that are not burning RDF, for mercury
27 emissions every three months.

1 The facility may implement testing for mercury not less than once every 12 months
2 under the following conditions: the facility has demonstrated that mercury emissions
3 have been below 50 percent of the facility's permitted long-term limit for three
4 consecutive years; and the owner or operator has submitted a request for an
5 administrative amendment according to the procedures of part 7007.1400.

6 Waste combustors combusting RDF may choose to conduct performance tests for
7 mercury every 12 months. If a test shows that an emission limit for mercury from a
8 waste combustor combusting RDF is exceeded, the commissioner shall require testing
9 every three months thereafter until compliance with the standard is demonstrated.

10 (6) A waste composition study every five years.

11 B. Class II and C waste combustors shall conduct performance tests as described in
12 subitems (1) to (4).

13 (1) Once within the normal start-up, except as provided in subitem (3)(b).

14 (2) Once annually after the test in subitem (1), but not more than 12 months
15 following the initial performance test, except as provided in subitem (3). Also, fugitive
16 emissions from ash handling do not need to be tested more frequently than the initial
17 test required in subitem (1). If three annual performance tests for a three-year period
18 show compliance with standards in part 7011.1225, the owner or operator may continue
19 to conduct annual testing, or may choose to conduct performance tests every 2-1/2
20 years, except as required by subitem (3). At a minimum, a performance test shall be
21 conducted every 2-1/2 years, but no more than 30 months following the previous
22 compliance test. If a performance test indicates noncompliance with applicable
23 standards, the owner or operator shall resume annual testing for three years for that
24 pollutant for which noncompliance was demonstrated. If three annual performance tests
25 for the three-year period show compliance with standards in part 7011.1225, the owner
26 or operator may again conduct performance testing every 2-1/2 years.

1 (3) For mercury emissions, Class C waste combustors shall commence testing
2 June 20, 1995, and continue testing every 90 days until August 1, 1997. Thereafter, Class
3 C waste combustors that are not burning RDF shall conduct mercury emissions testing
4 every three months.

5 The facility may implement testing for mercury not less than once every three years
6 or according to federal applicable requirements, whichever is more stringent, under the
7 following conditions: the facility has demonstrated that mercury emissions have been
8 below 50 percent of the facility's permitted long-term limit for three consecutive years;
9 and the owner or operator has submitted a request for an administrative amendment
10 according to the procedures of part 7007.1400.

11 If a facility is granted testing for mercury not less than once every three years or
12 according to federal applicable requirements, whichever is more stringent, and a
13 mercury performance test shows mercury emissions greater than 50 percent of the
14 facility's permitted mercury limit, the facility shall conduct annual mercury stack
15 sampling until emissions are below 50 percent of the facility's permitted mercury limit.
16 Once the facility demonstrates that mercury emissions are again below 50 percent of the
17 facility's permitted limit, the facility may resume testing every three years, upon
18 notifying the commissioner in writing.

19 Waste combustors combusting RDF may choose to conduct performance tests for
20 mercury emissions every 12 months. If a test shows that emission limits for mercury
21 from a waste combustor combusting RDF are exceeded, the commissioner shall require
22 performance testing every three months until compliance is demonstrated.

23 (4) A waste composition study every five years.

24 C. Class III and D waste combustors shall conduct performance tests as described
25 in subitems (1) to (6).

26 (1) Once within the normal start-up.

1 (2) Every 2-1/2 years after the test in subitem (1), but not more than 30 months
2 following the initial performance test.

3 (3) For Class III waste combustors, emissions of mercury, every three months.

4 The facility may implement testing for mercury not less than once every three years
5 or according to federal applicable requirements, whichever is more stringent, under the
6 following conditions: the facility has demonstrated that mercury emissions have been
7 below 50 percent of the facility's permitted long-term limit for three consecutive years;
8 and the owner or operator has submitted a request for an administrative amendment
9 according to the procedures of part 7007.1400.

10 If a facility is granted testing for mercury not less than once every three years or
11 according to federal applicable requirements, whichever is more stringent, and mercury
12 performance test shows mercury emissions greater than 50 percent of the facility's
13 permitted mercury limit, the facility shall conduct annual mercury stack sampling until
14 emissions are below 50 percent of the facility's permitted mercury limit. Once the
15 facility demonstrates that mercury emissions are again below 50 percent of the facility's
16 permitted limit, the facility may resume testing every three years, upon notifying the
17 commissioner in writing.

18 (4) For Class D waste combustors, emissions of mercury every 2-1/2 years.

19 (5) For ash, in accordance with part 7045.0131 every 30 months for toxicity by
20 toxic characteristic leach procedure for arsenic, barium, cadmium, chromium, lead,
21 mercury, selenium, and nickel.

22 (6) A waste composition study every five years.

23 [For text of item D, see M.R.]

24 E. Class I waste combustors shall conduct performance tests for mercury emissions
25 every three months for waste combustors that are not burning RDF.

26 The facility may implement testing for mercury not less than once every 12 months
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1 under the following conditions: the facility has demonstrated that mercury emissions
2 have been below 50 percent of the facility's permitted long-term limit for three
3 consecutive years; and the owner or operator has submitted a request for an
4 administrative amendment according to the procedures of part 7007.1400.

5 Waste combustors combusting RDF may choose to conduct performance tests for
6 mercury every 12 months. If a test shows that an emission limit for mercury from a
7 waste combusting RDF is exceeded, the commissioner shall require testing every three
8 months thereafter until compliance with the standard is demonstrated.

9 Class I waste combustors shall conduct a waste composition study every five years.

10 **7011.1272 MERCURY OR PCDD/PCDF ADDITIVE EQUIPMENT OPERATION,**
11 **MONITORING, AND REPORTING.**

12 Subpart 1. **Mercury or PCDD/PCDF removal equipment operation.** The owner or
13 operator of a waste combustor using additives for the control of mercury or
14 PCDD/PCDF shall determine and record the average additive mass feed rate, in
15 pounds-per-hour, during the initial and at each subsequent performance test for
16 mercury or PCDD/PCDF. The owner or operator shall correlate this feed rate to an
17 operating parameter of the additive injection system.

18 The owner or operator shall submit the calculations supporting the correlation with
19 the results of the mercury or PCDD/PCDF performance test.

20 Subp. 2. **Mercury or PCDD/PCDF additive feed rate monitor.** The owner or operator
21 of a waste combustor using additives for the control of mercury or PCDD/PCDF shall
22 install, maintain, and operate at all times a system for monitoring the additive injection
23 system's operating parameter that is the primary indicator of the additive's mass feed
24 rate, as determined by the requirements of subpart 1.

25 The monitored condition must equal or exceed that determined during the most
26 recent mercury or PCDD/PCDF performance test that demonstrated compliance with
27 the emission limit.

1 Subp. 3. **Recordkeeping and recording of additive use.**

2 A. The owner or operator shall maintain a record of the average additive mass feed
3 rate for each hour of operation, as measured by the operating parameter required in
4 subpart 2. If the operating parameter is not a direct measurement of the mass feed rate
5 of the additive, then the record shall contain the calculations supporting the correlation
6 between the mass feed rate and the measured operating parameter.

7 The record shall be maintained on site in a form suitable for immediate inspection.

8 B. During each calendar quarter, the owner or operator shall estimate the total
9 additive used at the waste combustor in pounds or kilograms by two independent
10 means as described in subitems (1) and (2):

11 (1) the weight of additive delivered to the plant; and

12 (2) estimate the average additive mass feed rate in pounds per hour, or
13 kilograms per hour, for each hour of operation for each unit, based on the parameters
14 measured in subpart 2. Sum the results of the mass feed rates for all waste combustor
15 units at the plant for the total number of hours of operation during the calendar quarter.

16 **7011.1275 PERSONNEL TRAINING.**

17 Subpart 1. **General.** Waste combustor facility personnel described in subpart 2 must
18 complete a program of instruction and on-the-job training based on the operating
19 manual described in subpart 3. The program must train facility personnel to maintain
20 compliance with parts 7011.1201 to 7011.1290. Individual training shall be specific to the
21 position held and shall, at a minimum, address the items in subpart 3.

22 For personnel described in subpart 2, the training program shall require:

23 [For text of items A and B, see M.R.]

24 C. that those without waste combustor or boiler operation experience, initially
25 review the operating manual and work under the direct supervision of a certified

1 operator or a certified operator's designee before assumption of job-related activities
2 affecting air emissions for the following duration:

3 (1) for Class I, II, III, A, C, or D waste combustor personnel, 40 hours; and

4 (2) for Class IV waste combustor personnel, 12 hours; and

5 [For text of item D, see M.R.]

6 [For text of subp 2, see M.R.]

7 Subp. 3. **Operating manual requirements.** The owner or operator of a waste
8 combustor shall develop and update on a yearly basis a site specific operating manual
9 that shall, at a minimum, address the following elements of waste combustor unit
10 operation:

11 [For text of items A to E, see M.R.]

12 F. procedures for operating the waste combustor within the standards established
13 in parts 7011.1201 to 7011.1290;

14 [For text of items G to O, see M.R.]

15 [For text of subp 4, see M.R.]

16 **7011.1280 OPERATOR CERTIFICATION.**

17 Subpart 1. **Scope.** The commissioner shall certify a person provided the person can
18 demonstrate the completion of:

19 A. ASME provisional certification as described in Standard for the Qualification
20 and Certification of Resource Recovery Facility Operators, American Society of
21 Mechanical Engineers (ASME) QRO-1-~~1989~~1994, incorporated by reference in part
22 7011.1205, for chief facility operators ~~and~~, shift supervisors, and control room operators
23 of municipal waste combustors; or

24 B. the coursework and examination program set forth in subpart 3.

25 Subp. 2. **Personnel who shall be certified.** The following personnel shall be certified
26 through the process established in this part:

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1 A. for Class I, II, III, A, C, or D waste combustors, the chief facility operator and
 2 shift supervisors; and

3 B. for Class IV waste combustors, the operator supervisor.

4 Subp. 3. **Requirements for operator certification.** To be certified, a person must
 5 demonstrate the skill, knowledge, and experience necessary to operate a waste
 6 combustor, by meeting the criteria of item A or B.

7 [For text of item A, see M.R.]

8 B. A certified operator of a Class I, II, III, A, C, or D waste combustor shall comply
 9 with the requirements in subitem (1) or (2).

10 (1) Persons who possess a Minnesota Department of Labor and Industry boiler
 11 license of at least second class engineer, Grade B, shall:

12 (a) have one year of experience operating a steam generation plant or Class I,
 13 II, III, A, C, or D waste combustor at the licensure level of at least second class engineer,
 14 Grade B, and complete at least 24 hours of training approved by the commissioner
 15 which are designed to ensure competency to operate a Class I, II, III, A, C, or D waste
 16 combustor;

17 (b) complete the certification process described in subpart 4; and

18 (c) pass the examination described in subpart 5.

19 (2) Persons who do not meet the qualifications of subitem (1), unit (a), shall:

20 (a) have three years of experience operating a Class I, II, III, A, C, or D waste
 21 combustor or in power generation and complete at least 24 hours of training approved
 22 by the commissioner which are designed to ensure competency to operate a Class I, II,
 23 III, A, C, or D waste combustor;

24 (b) complete the certification process described in subpart 4; and

25 (c) pass the examination described in subpart 5.

1 [For text of subp 4, see M.R.]

2 Subp. 5. **Examinations.**

3 [For text of item A, see M.R.]

4 B. For certification of a person to operate a Class I, II, III, A, C, or D waste
5 combustor, the examination shall be in three areas, divided as follows:

6 [For text of subitems (1) to (3), see M.R.]

7 [For text of items C to E, see M.R.]

8 [For text of subp 6, see M.R.]

9 Subp. 7. **Renewal.**

10 A. A certified individual shall apply for certificate renewal 30 days prior to
11 certificate expiration. Renewal certificates shall be issued by the commissioner when the
12 commissioner receives the application, along with evidence that the person has, during
13 the preceding three years, earned credit for attending training courses offered by the
14 agency or other training courses approved by the commissioner as described in subpart
15 8, including personnel training described in part 7011.1275, for the number of hours as
16 identified as follows:

17 (1) Class I, II, III, A, C, or D, 24 hours; and

18 [For text of subitem (2), see M.R.]

19 [For text of items B and C, see M.R.]

20 [For text of subps 8 and 9, see M.R.]

21 Subp. 10. **Certification deadlines.** All individuals employed on June 20, 1994, who
22 require certification as described in this part shall obtain certification by June 20, 1996,
23 or on completion of the normal start-up of a waste combustor, whichever is later.

24 Subp. 11. Recordkeeping. A waste combustor owner or operator shall maintain a
25 record of personnel who complete either the Environmental Protection Agency

1 municipal waste combustor operator training course, or an equivalent course approved
2 by the Minnesota Pollution Control Agency under subpart 8. The record shall include
3 documentation of training completion.

4 **7011.1281 FULL OPERATOR CERTIFICATION.**

5 Subpart 1. **Fully certified operator defined.** A "fully certified operator" means:

6 A. a person who has obtained "certified municipal waste combustor examiner"
7 certification as described in part 7011.1282;

8 B. a person who has obtained both "provisional certification" and "operator
9 certification" according to ASME QRO-1-~~1989~~1994, incorporated by reference in part
10 7011.1205; or

11 C. a person who is a "fully certified operator" as described in part 7011.1284.

12 Subp. 2. **Changes at a facility.** If changes are made in equipment and/or operating
13 procedures which the initial certification did not address, certificate holders shall
14 demonstrate detailed knowledge of these changes according to the conditions of the
15 certificate held. A change in the name or ownership of a facility shall not invalidate the
16 operator certificate.

17 **7011.1282 CERTIFIED MUNICIPAL WASTE COMBUSTOR EXAMINER** 18 **CERTIFICATE.**

19 Subpart 1. **Criteria for a certified municipal waste combustor examiner.** To be
20 certified as a certified municipal waste combustor examiner, employment claimed on
21 the individual's application for certification must be verified by the individual's
22 supervisor or personnel officer and the individual must:

23 A. hold a current certificate as defined in part 7011.1280, subpart 1;

24 B. document a total of 60 months satisfactory employment experience in general
25 industry, of which 36 months were at the level of a chief facility operator or shift

1 supervisor, as defined in part 7011.1201, subparts 8 and 44, at a municipal waste
2 combustor;

3 C. be currently employed by a municipal waste combustor owner;

4 D. possess a bachelor degree in engineering or a related field, or a Minnesota
5 Department of Labor and Industry boiler license of chief engineer, Grade A or B;

6 E. pass an oral examination as described in subpart 3; and

7 F. identify the waste combustor facility for which the applicant seeks certification
8 as a certified municipal waste combustor examiner.

9 **Subp. 2. Certification process for a certified municipal waste combustor examiner.**

10 A. The commissioner shall review the application for certified municipal waste
11 combustor examiner and determine the adequacy of information included in the
12 application. If the commissioner determines that additional information or
13 documentation is necessary to assess the eligibility of the applicant, the commissioner
14 shall notify the applicant. The application shall be considered incomplete until the
15 applicant provides the required information. When the commissioner determines that
16 the applicant has submitted a complete application, and has determined that the
17 applicant has demonstrated a satisfactory compliance history as an operator at a
18 municipal waste combustor, the commissioner shall schedule an oral examination of the
19 applicant.

20 B. The commissioner shall issue a certificate to the applicant who successfully
21 completes the examination process of subpart 3. The certified municipal waste
22 combustor examiner's certificate is site-specific, and is not transportable. The certificate
23 shall expire five years after its issue date unless renewed. Each certificate shall contain
24 the following information:

25 (1) identification as a certified municipal waste combustor examiner certificate;

1 (2) the certified individual's full name; and

2 (3) the name and location of the facility for which certification is given.

3 **Subp. 3. Examination for certified municipal waste combustor examiner.**

4 A. The commissioner shall convene a board of examiners to conduct an oral
5 examination of a certified municipal waste combustor examiner applicant.

6 B. The examination for certified municipal waste combustor examiner shall:

7 (1) test understanding of the content and procedures described in the waste
8 combustor's operating manual that is required to be prepared for the facility by part
9 7011.1275, subpart 3;

10 (2) test comprehensive understanding of the duties of a certified examiner
11 described in part 7011.1283 and how the applicant is prepared to carry out these duties;
12 and

13 (3) require the applicant to describe the waste combustor facility's program for
14 examining and awarding full certification, and describe how this program incorporates
15 the requirements of parts 7011.1283 and 7011.1284.

16 The board of examiners shall evaluate applicants for certified municipal waste
17 combustor examiner based on the applicant's technical knowledge and understanding
18 of integrated plant operations. An applicant's responses shall be graded as pass or fail.
19 All members of the board of examiners must pass the applicant if the certification is to
20 be granted.

21 C. The board of examiners shall consist of at least three members. The three
22 members shall be a member of the Pollution Control Agency, a member of the
23 municipal waste combustor industry, and a member who is or has been employed at a
24 power operation facility using combustion and/or air pollution control technologies
25 comparable to the facility where the applicant is employed.

1 The commissioner may appoint additional board members if the facility for which the
2 applicant seeks certification is complex and the commissioner determines that
3 additional examiners will help the board determine the applicant's technical knowledge,
4 problem-solving ability, and understanding of plant operations.

5 Additional Pollution Control Agency representatives, a representative from the
6 facility, a representative of an industry trade group, and a member of the public shall be
7 allowed by the commissioner to observe the examination.

8 Subp. 4. **Renewal.** The commissioner shall issue renewal certified examiner
9 certificates when an individual submits a written request to renew the certificate at least
10 30 days before the expiration of the certificate.

11 If changes are made in equipment and/or operating procedures which the initial
12 certification did not address, the individual shall submit written evidence that the
13 change has been made, the individual has been trained, and the on-site certification
14 program has been amended to include the changes. The individual shall also submit
15 evidence that the individual has, during the life of the certified municipal waste
16 combustor operator certificate, maintained the individual's certification as required in
17 part 7011.1280. If the individual applies for certificate renewal after the certified
18 municipal waste combustor examiner certificate has expired, the commissioner shall
19 schedule an examination according to part 7011.1282, subpart 3.

20 Subp. 5. **Sanctions.** The conditions of part 7011.1280, subpart 9, apply to any
21 sanctions taken by the commissioner.

22 **7011.1283 DUTIES OF A CERTIFIED MUNICIPAL WASTE COMBUSTOR**
23 **EXAMINER.**

24 A certified municipal waste combustor examiner shall be responsible for the
25 development, implementation, monitoring, and updating of an operator certification
26 program specific to the municipal waste combustor for which the examiner has been

1 certified. The operator certification program shall be designed as a system of training
2 and written and/or oral examination on the duties, knowledge, and responsibilities of
3 municipal waste combustor unit operations, as described in the operating manual
4 required in part 7011.1275, subpart 3. The certified examiner shall administer the
5 examination of full operator candidates.

6 **7011.1284 FULLY CERTIFIED OPERATOR.**

7 Subpart 1. **Scope.** A certified municipal waste combustor examiner may award the
8 status of fully certified operator to an individual at a municipal waste combustor
9 facility, provided the conditions of this part are met.

10 Subp. 2. **Criteria for a fully certified operator.** To be eligible as a fully certified
11 operator, an individual must maintain a provisional certificate from ASME or a
12 certificate described in part 7011.1280, and pass an examination administered by the
13 waste combustor's certified municipal waste combustor examiner.

14 The examination shall test comprehensive understanding of the content and
15 procedures described in the waste combustor's operating manual that is required to be
16 prepared for the facility by part 7011.1275, subpart 3.

17 If changes are made in equipment and/or operating procedures which the initial
18 certification did not address, certificate holders shall demonstrate to the facility's
19 certified examiner detailed knowledge of these changes within six months after the
20 change is made. If the demonstration of knowledge has not been made within six
21 months, the certificate shall expire.

22 Subp. 3. **Record of certified operators.** The waste combustor owner or operator shall
23 maintain at the waste combustor facility for five years a record of the names of all
24 personnel that the examiner has certified.

25 This record shall contain the examination dates, the nature or content of the
26 examination, the full name of the individual certified, the date of certification, and the
27 signature of the certified examiner for that facility with the following certification:

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1 "I certify under penalty of law that, based on my examination of these persons,
2 these persons have demonstrated the knowledge and skills that qualify these
3 persons to be fully certified operators at (name of waste combustor facility) in
4 accordance with the procedures of Minnesota Rules, parts 7011.1280 to 7011.1284."

5 Subp. 3a. Record of ASME certified operators. The waste combustor owner or
6 operator shall maintain at the waste combustor facility for five years a record of the
7 names of all personnel who have obtained provisional and/or full certification by
8 ASME.

9 Subp. 4. **Inspection of records.** The owner or operator shall allow the commissioner
10 to review all records related to the certification of operators, including the facility's
11 program for the examination and certification of operators, the record required in
12 subpart 3, the content of examinations, and the results of an individual's examination.

13 7011.1285 OPERATING RECORDS AND REPORTS.

14 Subpart 1. **Scope.** The owner or operator of a waste combustor shall maintain records
15 and submit reports as required in this part. The owner or operator of a waste combustor
16 required to obtain a permit under part 7007.0200, subpart 4, or 7007.0250, subpart 5, are
17 also subject to the recordkeeping and reporting requirements in part 7007.0800, subparts
18 5 and 6. Class A, C, I, and II waste combustors shall maintain on site all submittals
19 required by this part as paper copies for five years. All other waste combustors shall
20 retain records for a minimum of five years.

21 Subp. 2. **Daily operating record.** The owner or operator shall maintain a daily record
22 of the operation of the waste combustor. The record shall contain:

23 [For text of items A to I, see M.R.]

24 J. the reasons for exceeding any of the average emission rates, percent reductions,
25 or operating parameters specified under part 7011.1260, subpart 6, item C, or the opacity
26 limit and a description of corrective actions taken;

1 K. reasons for not obtaining the minimum number of hours of sulfur dioxide or
2 nitrogen oxides emissions or operational data (carbon monoxide emissions, steam flow
3 or alternative unit load measurement parameter as described in part 7011.1265, subpart
4 4a, particulate matter control device temperature) and a description of corrective actions
5 taken;

6 L. the date of the calibration of all signal conversion elements associated with
7 steam flow monitoring as required in part 7011.1265, subpart 4; ~~and~~

8 M. for waste combustors using an additive to comply with mercury or
9 PCDD/PCDF emission limits, reasons for not maintaining the additive system
10 operating parameter as determined in part 7011.1272, subpart 2, and descriptions of
11 corrective actions taken; and

12 N. for waste combustors using an additive to comply with mercury or
13 PCDD/PCDF emission limits, reasons for not maintaining the additive mass feed rates
14 as determined in part 7011.1272, subpart 1, and descriptions of corrective actions taken.

15 Subp. 3. **Quarterly reports.** The owner or operator of a Class I, II, III, A, C, or D waste
16 combustor shall submit quarterly reports to the commissioner within 30 days after the
17 quarter ending December 30, March 30, June 30, and September 30 of each year. The
18 quarterly report may be submitted as a bound, paper copy or in an alternative format
19 such as computer disk or CD-ROM. The commissioner shall accept the submittal in the
20 alternative format provided that the commissioner has given prior approval for the use
21 of the alternative format in order that compatibility between the software and hardware
22 configurations of the agency and the owner or operator of the waste combustor can be
23 assured. The report shall contain the following items:

24 [For text of item A, see M.R.]

25 B. sulfur dioxide, nitrogen oxide, and carbon monoxide emissions, the maximum
26 ~~or minimum~~ waste combustor unit load level, and particulate matter control device

1 temperatures as recorded by part 7011.1260, subpart 6, item C, and the daily maximum
2 opacity ~~readings~~ reading as recorded by part 7011.1260, subpart 6, item B, subitem (1).
3 The facility may choose to provide this information in tabular or graphic form. The
4 graphs shall be prepared as follows:

5 (1) the graph shall represent one operating parameter or pollutant;

6 (2) the applicable limit of the parameter or pollutant shall be indicated on the
7 graph; and

8 (3) data shall be expressed in the same units as the applicable operating
9 parameter or emissions limit;

10 [For text of item C, see M.R.]

11 D. the identification of operating days when any of the average emission
12 concentrations, percent reductions, operating parameters specified under part
13 7011.1260, subpart 6, item C, or 7011.1272, subpart 2, or the opacity level exceeded the
14 applicable limits. The report shall include the emission levels recorded during the
15 exceedance, reasons for such exceedances as well as a description of corrective actions
16 taken;

17 [For text of item E, see M.R.]

18 F. the identification of operating days for which the minimum number of hours
19 that emission concentrations, percent reductions, operating parameters specified under
20 part 7011.1260, subpart 6, item C, or 7011.1272, subpart 2, or the opacity level have not
21 been obtained, including reasons for not obtaining sufficient data and a description of
22 corrective actions taken;

23 [For text of item G, see M.R.]

24 H. the information required in subpart 2, items C, D, and E, summarized to reflect
25 quarterly totals;

- 1 I. a compliance certification as required in part 7007.0800, subpart 6, item C; and
2 J. if an additive is used to comply with mercury or PCDD/PCDF emission limits,
3 the total additive used during the calendar quarter, as specified in part 7011.1272,
4 subpart 3, item B, with supporting calculations.

5 [For text of subp 4, see M.R.]

6 Subp. 4a. [See repealer.]

7 [For text of subp 5, see M.R.]

8 Subp. 6. **Performance test reports.** The owner or operator shall submit a report
9 containing the results of performance tests conducted to determine compliance with
10 waste combustor unit emission limits whenever performance testing is conducted. The
11 report shall be submitted according to the conditions of part 7017.2035.

12 **7011.1290 INCORPORATION OF NEW SOURCE PERFORMANCE STANDARD BY**
13 **REFERENCE.**

14 Code of Federal Regulations, title 40, part 60, subpart Eb, as amended, entitled
15 "Standards of Performance for Municipal Waste Combustors for Which Construction is
16 Commenced After September 20, 1994" is adopted and incorporated by reference.

17 **REPEALER.** Minnesota Rules, parts 7011.1201, subparts 7, 10, and 47; 7011.1240,
18 subparts 4 and 6; 7011.1265, subpart 9; and 7011.1285, subpart 4a, are repealed.