SUBCHAPTER 17. INCINERATORS

PART 5. MUNICIPAL WASTE COMBUSTORS

252:100-17-14.1. Definitions

The definitions in 40 CFR 60.51b are hereby incorporated by reference as they exist on ~~July 1, 2002~~ November 6, 2006 except for the definition of municipal waste combustor plant. In addition to the incorporated definitions, the following words and terms, when used in this Part, shall have the following meanings, unless the context clearly indicates otherwise.

"EPA" means the Administrator of the U.S. EPA or employee of the U.S. EPA who is delegated to perform the specified task.

"Municipal waste combustor" or "MWC" means each municipal waste combustor unit with a combustion capacity greater than 250 tons per day of municipal solid waste for which construction was commenced on or before September 20, 1994.

"Municipal waste combustor plant" means one or more municipal waste combustor units at the same location.

"Semi-suspension refuse-derived fuel-fired combustor/wet refuse-derived fuel process conversion" means a combustion unit that was converted from a wet refuse-derived fuel process to a dry refuse-derived fuel process, and because of constraints in the design of the system, includes a low furnace height (less than 60 feet between the grate and the roof) and a high waste capacity-to-undergrate air zone ratio (greater than 300 tons of waste per day (tpd) fuel per each undergrate air zone).

"Spreader stoker fixed floor refuse-derived fuel-fired combustor/100 percent coal capable" means a spreader stoker type combustor with a fixed floor grate design that typically fires 100 percent refuse-derived fuel but is equipped to burn 100 percent coal instead of refuse-derived fuel to fulfill 100 percent steam or energy demand.

252:100-17-14.2. Terminology related to 40 CFR

When these terms are used in rules incorporated by reference, the following definitions shall apply:

"Affected facility" is synonymous with ~~"large~~ municipal waste combustor unit~~" or "large MWC unit"~~.

"State plan" is a program that the State is responsible for developing and implementing to achieve compliance with the emission guidelines in Subpart Cb of 40 CFR Part 60.

252:100-17-15. Exemptions

(a) Any MWC unit that is capable of combusting more than 250 tons per day of MSW and is subject to a federally enforceable permit limiting the maximum amount of MSW that may be combusted in the unit to less than or equal to 11 tons per day is not subject to this Part if the owner/operator:

(1) Notifies the ~~DEQ~~EPA of an exemption claim.

(2) Provides the ~~DEQ~~EPA with a copy of the federally enforceable permit that limits the firing of MSW to less than or equal to 11 tons per day.

(3) Keeps records of the amount of MSW fired per day.

(b) A qualifying small power production facility, (as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C.§796(17)(C)), that produces electric energy from homogeneous waste is not subject to this Part if the owner/operator:

(1) Notifies the ~~DEQ~~EPA of an exemption claim.

(2) Provides the ~~DEQ~~EPA data documenting that the facility qualifies for this exemption.

(c) A qualifying cogeneration facility, (as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C.§796(18)(B)), that burns homogeneous waste to produce electric energy, steam, or other useful energy used for industrial, commercial, heating, or cooling purposes, is not subject to this Part if the owner/operator:

(1) Notifies the ~~DEQ~~EPA of an exemption claim.

(2) Provides the ~~DEQ~~EPA data documenting that the facility qualifies for this exemption.

(d) Any unit combusting a single-item waste stream of tires is not subject to this Part if the owner/operator:

(1) Notifies the ~~DEQ~~EPA of an exemption claim.

(2) Provides the ~~DEQ~~EPA with data documenting that the unit qualifies for this exemption.

(e) Any unit required to have a hazardous waste permit is not subject to this Part.

(f) Any materials recovery facility (including primary or secondary smelters) that combusts waste for the primary purpose of recovering metals is not subject to this Part.

(g) Any cofired combustor that meets the capacity specifications in paragraph (a) of this section is not subject to this Part if the owner/operator:

(1) Notifies the ~~DEQ~~EPA of an exemption claim.

(2) Provides the ~~DEQ~~EPA with a copy of the federally enforceable permit.

(3) Keeps separate records, on a calendar quarter basis, of the weight of MSW and the weight of all other fuels combusted at the cofired combustor.

(h) Air curtain incinerators that meet the capacity specifications in 252:100-17-23 of this Subchapter and combust a 100 percent yard waste fuel stream are not subject to this Part, except:

(1) The opacity limit under section 252:100-17-23 of this Subchapter.

(2) The testing procedures under section 252:100-17-25 of this Subchapter.

(3) The reporting and recordkeeping provisions under section 252:100-17-26 of this Subchapter.

(i) Pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit are not subject to this Part if the owner/operator of the unit maintains records of:

(1) The weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis.

(2) The weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis.

(3) The name and address of the purchaser of the feedstocks.

(j) The combustion of gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquefied petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units are not subject to this Part.

(k) Cement kilns firing MSW are not subject to this Part.

(l) Any large MWC is not subject to subpart E of 40 CFR Part 60.
(m) Physical or operational changes made to an existing municipal waste combustor unit primarily for the purpose of complying with this Part are not considered in determining whether the unit is a modified or reconstructed facility under subpart Ea or subpart Eb of 40 CFR Part 60.

252:100-17-16. Standards for particulate matter and opacity

(a) **Particulate matter**.

(1) Before April 28, 2009, ~~The~~the concentration of particulate matter contained in the gases discharged to the atmosphere from a MWC unit shall not exceed 27 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(2) By April 28, 2009, the concentration of particulate matter contained in the gases discharged to the atmosphere from a MWC unit shall not exceed 25 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(b) **Opacity.** Opacity of gases discharged to the atmosphere from a MWC unit shall not exceed 10 percent (6-minute average).

252:100-17-17. Standards for municipal waste combustor metals

(a) **Cadmium.**

(1) Before April 28, 2009, ~~The~~the concentration of cadmium contained in the gases discharged to the atmosphere from a MWC unit shall not exceed ~~0.040 milligrams~~40 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(2) By April 28, 2009, the concentration of cadmium contained in the gases discharged to the atmosphere from a MWC unit shall not exceed 35 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(b) **Lead.**

(1) By December 19, 2000, the concentration of lead contained in the gases discharged to the atmosphere from a MWC unit shall not exceed ~~0.49 milligrams~~490 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(2) By August 26, 2002, or three years after EPA approval of the State plan, whichever is first, the concentration of lead contained in the gases discharged to the atmosphere from a MWC unit shall not exceed ~~0.44 milligrams~~440 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(3) By April 28, 2009, the concentration of lead contained in the gases discharged to the atmosphere from a MWC unit shall not exceed 400 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(c) **Mercury.**

(1) Before April 28, 2009, ~~The~~the concentration of mercury contained in the gases discharged to the atmosphere from a MWC unit shall not exceed ~~0.080 milligrams~~80 micrograms per dry standard cubic meter or 15 percent of the potential mercury emission concentration (~~85-percent~~85 percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.

(2) By April 28, 2009, the concentration of mercury contained in the gases discharged to the atmosphere from a MWC unit shall not exceed 50 micrograms per dry standard cubic meter

or 15 percent of the potential mercury emission concentration (85 percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.

252:100-17-19. Standards for municipal waste combustor organics expressed as total mass dioxins/furans

(a) The concentration of organics, expressed as total mass dioxins/furans, contained in the gases discharged to the atmosphere from a MWC unit shall not exceed:

(1) Before April 28, 2009, ~~With~~with electrostatic precipitator: 60 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(2) By April 28, 2009, with electrostatic precipitator: 35 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

~~(2)~~ (3) Without electrostatic precipitator: 30 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(b) Large MWC units that achieve a dioxin/furan emission level less than or equal to 15 nanograms per dry standard cubic meter total mass, corrected to 7 percent oxygen, may elect the alternative performance testing schedule for dioxins/furans as specified in 40 CFR 60.586b(g)(5)(iii).

252:100-17-20. Standards for nitrogen oxides

(a) **Nitrogen oxides emission limits.** The concentration of nitrogen oxides contained in the gases discharged into the atmosphere from a MWC unit shall not exceed the following:

NITROGEN OXIDES LIMITS

Municipal Waste Combustor Technology	Nitrogen oxides emission limit (ppm by volume)[a]	
	Before	On or After April 28, 2009
Mass burn waterwall	205	205
Mass burn rotary waterwall	250	210
Refuse-derived fuel combustor	250	250
Fluidized bed combustor (by December 19, 2000)	240	
Fluidized bed combustor (by August 26, 2002, or three years after EPA approval of the State plan, whichever is first)	180	180
Mass burn refractory combustors	No limit	No limit

[a]Corrected to 7 percent oxygen, dry basis, 24 hr daily arithmetic average

(b) **Nitrogen oxides emissions averaging.** The owner or operator of a MWC plant may elect to implement a nitrogen oxides emissions averaging plan for the MWC units that are located at that plant.

(1) The following units cannot be included in the emissions averaging plan:

(A) MWC units subject to Subpart Ea or Eb of 40 CFR Part 60.

(B) Mass burn refractory MWC units and other MWC technologies not listed in paragraph (b)(3) of this section may not be included in the emissions averaging plan.

(2) Prior to implementing the nitrogen oxides emissions ~~veraging~~averaging plan, the units to be included must be identified in the initial performance test report specified in 40 CFR 60.59b(f) or in the annual report specified in 40 CFR 60.59b(g), as applicable. The units which are included in the averaging plan may be redesignated each calendar year. Partial year redesignation is allowable with DEQ approval.

(3) To implement the emissions averaging plan, the average daily (24-hour) nitrogen oxides emission concentration level discharged from the units included in the emission averaging plan shall be no greater than the levels specified in this section. Emission limits for the nitrogen oxides concentration level for each type of unit are as follows:

NITROGEN OXIDES LIMITS FOR EXISTING DESIGNATED FACILITIES INCLUDED IN AN EMISSIONS AVERAGING PLAN AT A MUNICIPAL WASTE COMBUSTOR PLANT[a]

Municipal waste combustor technology	Nitrogen oxides emission limit (ppm by volume)[b]	
	Before April 28, 2009	On or After April 28, 2009
Mass burn waterwall	185	185
Mass burn rotary waterwall	220	190
Refuse-derived fuel combustor	230	230
Fluidized bed combustor	165	165

[a]Mass burn refractory municipal waste combustors and other MWC technologies not listed above may not be included in an emissions averaging plan.

[b]Corrected to 7 percent oxygen, dry basis, 24 hr daily arithmetic average

(4) Under the emissions averaging plan, the average daily nitrogen oxides emissions specified in paragraph (b)(3) of this section shall be calculated using the equation in Appendix K of this Chapter. MWC units that are off-line shall not be included in calculating the average daily nitrogen oxides emission level.

(5) For any day a unit included in the emissions averaging plan is off-line, the owner or operator of the MWC plant must demonstrate compliance according to either paragraph (b)(5)(A) or both paragraphs (b)(5)(B) and (b)(5)(C) of this section.

(A) Compliance with the applicable limits specified in (b)(3) of this Part shall be demonstrated using the averaging procedure specified in paragraph (b)(4) of this section. The averaging procedure will include the MWC units in the plan that are on-line.

(B) For each of the units included in the emissions averaging plan, the nitrogen oxides emissions shall be calculated on a daily average basis. The nitrogen oxides emissions level shall be equal to or less than the maximum daily nitrogen oxides emission levels achieved by that unit on any of the days during which the emissions averaging plan was achieved with all units on-line during the most recent calendar quarter. The requirements of this paragraph do not apply during the first quarter of operation under the emissions averaging plan.

(C) The average nitrogen oxides emissions (kilograms per day) calculated according to paragraph (b)(5)(C)(ii) of this section shall not exceed the average nitrogen oxides emissions (kilograms per day) calculated according to paragraph (b)(5)(C)(i) of this section.

(i) The average nitrogen oxides emissions shall be calculated for all days during which the emissions averaging plan was implemented and achieved and during which all MWC units were on-line. The average nitrogen oxides emissions (kilograms per day) shall be calculated, on a calendar year basis, according to paragraphs (b)(5)(C)(i)(I) through (b)(5)(C)(i)(III) of this section.

(I) The daily amount of nitrogen oxides emitted (kilograms per day) shall be calculated for each MWC unit included in the emissions averaging plan. The calculation shall be based on the hourly nitrogen oxides data required under 40 CFR 60.58b(h) and specified under 40 CFR 60.58b(h)(5). The flue gas flow rate is determined using the hourly average steam or feedwater flow rate and Table 19-1 of EPA Reference Method 19, which is hereby incorporated by reference as it exists on July 1, 2002.

(II) The daily total nitrogen oxides emissions shall be calculated as the sum of the daily nitrogen oxides emissions from each unit calculated under paragraph (b)(5)(C)(i)(I) of this section.

(III) On a calendar year basis, the average nitrogen oxides emissions (kilograms per day), shall be calculated as the sum of all daily total nitrogen oxides emissions calculated under paragraph (b)(5)(C)(i)(II) of this section divided by the number of calendar days for which a daily total was calculated.

(ii) The average nitrogen oxides emissions shall be calculated for all days during which one or more of the MWC units under the emissions averaging plan was off-line. The average nitrogen oxides emissions (kilograms per day) shall be calculated according to paragraphs (b)(5)(C)(ii)(I) through (b)(5)(C)(ii)(III) of this section on a calendar year basis.

(I) For each MWC unit included in the emissions averaging plan, the daily amount of nitrogen oxides emitted (kilograms per day) shall be

calculated based on the hourly nitrogen oxides data required under 40 CFR 60.58b(h)and specified under 40 CFR 60.58b(h)(5), the flue gas flow rate determined using Table 19-1 of the EPA Reference Method 19, which is hereby incorporated by reference as it exists on July 1, 2002 and the hourly average steam or feedwater flow rate.
(II) The daily total nitrogen oxides emissions shall be calculated as the sum of the daily nitrogen oxides emissions from each MWC unit as calculated under paragraph (b)(5)(C)(ii)(I) of this section.
(III) The average nitrogen oxides emissions (kilograms per day) on a calendar year basis shall be calculated as the sum of all daily total nitrogen oxides emissions calculated under paragraph (b)(5)(C)(ii)(II) of this section divided by the number of calendar days for which a daily total was calculated.

252:100-17-21. Standards for municipal waste combustor operating practices

(a) The concentration of carbon monoxide contained in the gases discharged to the atmosphere from a MWC unit shall not exceed the following limits for each type of affected equipment:

MUNICIPAL WASTE COMBUSTOR OPERATING LIMITS

Municipal waste combustor technology	Carbon monoxide emissions level (ppm by volume)[a]	Averaging Time[b] (hours)
Mass burn waterwall	100	4
Mass burn refractory	100	4
Mass burn rotary refractory	100	24
Mass burn rotary waterwall	250	24
Modular starved air	50	4
Modular excess air	50	4
Refuse-derived fuel stoker	200	24
Fluidized bed, mixed fuel (wood/refuse-derived fuel)	200	24[c]
Bubbling fluidized bed combustor	100	4
Circulating fluidized bed combustor	100	4
Pulverized coal/refuse-derived fuel mixed fuel-fired combustor	150	4
Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor	200	24
Semi-suspension refuse-derived fuel-fired combustor/wet refuse-derived fuel process conversion	250	24[c]
Spreader stoker fixed floor refuse-derived fuel-fired combustor/100 percent		

coal capable.....250..... 24[c]

[a]Measured at the combustor outlet in conjunction with a measurement of oxygen concentration, corrected to 7 percent oxygen, dry basis. Calculated as an arithmetic average.
[b]Averaging times are 4-hour or 24-hour block averages.
[c]~~24-hour block average, geometric mean.~~
(b) An owner or operator of a MWC shall comply with all provisions specified in 40 CFR ~~60.58b~~ 60.53b(b) and (c), which is hereby incorporated by reference as it exists on ~~July 1, 2002~~ November 6, 2006.

252:100-17-24. Standards for municipal waste combustor operator training and certification

(a) Each chief facility operator and shift supervisor shall obtain and maintain a current provisional operator certification from either the American Society of Mechanical Engineers (ASME) [QRO-1-1994 Standard for the Qualification and Certification of Resource Recovery Facility Operators] or a State certification program no later than the date 6 months after the startup of a MWC unit or 12 months after the date of State plan approval, whichever is later.
(b) Each chief facility operator and shift supervisor shall have completed full certification or submitted an application, that has been accepted by the appropriate certification program, for a full certification exam with either the ASME [QRO-1-1994 Standard for the Qualification and Certification of Resource Recovery Facility Operators] or a State certification program no later than the date 6 months after the startup of a MWC unit or 12 months after the date of State plan approval, whichever is later.
(c) (1) No owner or operator of a MWC unit shall allow the unit to be operated at any time unless one of the following persons is on duty:

~~(i)~~(A) A fully certified chief facility operator.
~~(ii)~~(B) A provisionally certified chief facility operator who has met the qualification requirements specified in ASME [QRO-1-1994 section 2.2.2] and has made an application for a full certification exam following the ASME [QRO-1-1994 section 4.3.1] application process, according to the schedule specified in paragraph (b) of this section.
~~(iii)~~(C) A fully certified shift supervisor.
~~(iv)~~(D) A provisionally certified shift supervisor who has met the qualification requirements specified in ASME [QRO-1-1994 section 2.2.2] and has made an application for a full certification exam following the ASME [QRO-1-1994 section 4.3.1] application process, according to the schedule specified in paragraph (b) of this section.

(2) The requirement specified in paragraph (c) of this section shall take effect no later than the date 6 months after the startup of a MWC unit or 12 months after the date of State plan approval, whichever is later.
~~(3) If one of the persons listed in paragraph (c) of this section must leave the unit during their operating shift, a provisionally certified control room operator who is on-site at the MWC~~

~~may fulfill the requirement in paragraph(c) of this section.~~

(3) If both the certified chief facility operator and certified shift supervisor are unavailable, a provisionally certified control room operator who is on-site at the MWC may fulfill the requirement in paragraph (c) of this section. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, the owner or operator of the affected facility must meet one of three criteria:

(A) When the certified chief facility operator and certified shift supervisor are both off site for 12 hours or less, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor.

(B) When the certified chief facility operator and certified shift supervisor are off site for more than 12 hours, but for two weeks or less, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor without notice to, or approval by, the Director. However, the owner or operator of the affected facility must record the period when the certified chief facility operator and certified shift supervisor are off site and include that information in the annual report as specified in 40 CFR 60.59b(g)(5).

(C) When the certified chief facility operator and certified shift supervisor are off site for more than two weeks, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor without approval by the Director. However, the owner or operator of the affected facility must take two actions:

(i) Notify the Director in writing. In the notice, state what caused the absence and what actions are being taken by the owner or operator of the facility to ensure that a certified chief facility operator or certified shift supervisor is on site as expeditiously as practicable.

(ii) Submit a status report and corrective action summary to the Director every four weeks following the initial notification. If the Director provides notice that the status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Director withdraws the disapproval, municipal waste combustion unit operation may continue.

(4) A provisionally certified operator who is newly promoted or recently transferred to a shift supervisor position or a chief facility operator position at the municipal waste combustion unit may perform the duties of the certified chief facility operator or certified shift supervisor without notice to, or approval by, the Director for up to six months before taking the ASME QRO certification exam.

(d) All chief facility operators, shift supervisors, and control room operators at MWC units must complete the EPA or State MWC operator training course no later than the date 6 months after the date of startup of the MWC or by 12 months after the date of State plan approval, whichever is later.

(e) The requirement specified in paragraph (d) of this section does not apply to chief facility

operators, shift supervisors, and control room operators who have obtained full certification from the American Society of Mechanical Engineers on or before the date of State plan approval.

(f) The owner or operator may request that the DEQ waive the requirement specified in paragraph (d) of this section for chief facility operators, shift supervisors, and control room operators who have obtained provisional certification from the American Society of Mechanical Engineers on or before the date of State plan approval.

(g) The owner or operator of a MWC unit shall develop and update on an annual basis, a site-specific operating manual. The operating manual shall, at a minimum, address the elements of MWC unit operation specified in paragraphs (g)(1) through (g)(11) of this section.

(1) A summary of the applicable standards under this Part.

(2) A description of basic combustion theory applicable to a MWC unit.

(3) Procedures for receiving, handling, and feeding MSW.

(4) MWC unit start-up, shutdown, and malfunction procedures.

(5) Procedures for maintaining proper combustion air supply levels.

(6) Procedures for operating the MWC unit within the standards established under this Part.

(7) Procedures for responding to periodic upset or off-specification conditions.

(8) Procedures for minimizing particulate matter carryover.

(9) Procedures for handling ash.

(10) Procedures for monitoring MWC unit emissions.

(11) Reporting and recordkeeping procedures.

(h) The owner or operator of a MWC unit shall establish a training program to review the operating manual according to the schedule specified in paragraphs (h)(1) and (h)(2) of this section. The training shall be provided to each person who has responsibilities affecting the operation of the unit including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers.

(1) Each person specified in paragraph (h) of this section shall undergo initial training no later than the date specified in paragraph (h)(1)(A), (h)(1)(B), or (h)(1)(C), whichever is later.

(A) The date 6 months after the date of startup of the unit.

(B) The date prior to the day the person assumes responsibilities affecting MWC unit operation.

(C) Twelve months after date of State plan approval.

(2) Annually, following the initial review required by paragraph (h)(1) of this section, each person specified in paragraph (h) of this section shall review the operating manual updates, any operational lessons learned/experiences of the past year, and provide for review of any section which an employee requests.

(i) The operating manual required by paragraph (h) of this section shall be kept in a readily accessible location for all persons required to undergo training under paragraph (h) of this section no later than 6 months after start-up or 12 months after the date of State plan approval. The operating manual and records of training shall be available for inspection by the DEQ upon request.

252:100-17-25. Compliance and performance testing

An owner or operator of a MWC shall comply with all provisions specified in 40 CFR 60.58b, which is hereby incorporated by reference as it exists on ~~July 1, 2002~~ November 6, 2006.

252:100-17-26. Reporting and recordkeeping requirements

Except for the provisions of subsection 60.59b(a), b(5), and d(11), 40 CFR 60.59b is hereby incorporated by reference as it exists on ~~July 1, 2002~~ November 6, 2006.