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STATE OF CONNECTICUT

REGULATION

OF

NAME OF AGENCY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

concerning

SUBJECT MATTER OF REGULATION

MUNICIPAL WASTE COMBUSTORS

S 38 1999

Section 1

The Regulations of Connecticut State Agencies are amended by the addition of new section 22a-174-38, as follows:

(NEW)

Sec. 22a-174-38. Municipal Waste Combustors.

(a) Definitions. For purposes of this section:

(1) "Calendar quarter" means a consecutive three-month period (nonoverlapping) beginning on January 1, April 1, July 1 or October 1.

(2) "Chief operator" means an individual who is in direct charge of the operation of a municipal waste combustor plant and who is responsible for overall on-site supervision, technical direction, management and performance of the plant.

(3) "Cofired combustor" means an emissions unit that combusts municipal solid waste with nonmunicipal solid waste fuel (e.g., coal, industrial process waste) and that is subject to a federally enforceable permit limiting the unit to combusting a fuel feed stream, thirty percent (30%) or less of the weight of which is composed, in the aggregate, of municipal solid waste as measured on a calendar quarter basis.

(4) "Continuous burning" means the continuous, semi-continuous or batch feeding of municipal solid waste for purposes of waste disposal, energy production or providing heat to the combustion system in preparation for waste disposal or energy production. Continuous burning does not include the use of municipal solid waste solely to provide thermal protection of the grate or hearth during the startup period when municipal solid waste is not being fed to the grate.

(5) "Continuous emission monitoring system" or "CEM system" means a monitoring system for continuously measuring the emissions of any pollutant from a MWC unit.

(6) "Dioxin/furan" means tetra-chlorinated dibenzo-p-dioxins and dibenzofurans through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

(7) "Dscf/mmBTU" means dry cubic feet at standard conditions per million British thermal unit.

(8) "F-factor," "fc" or "fd" means a ratio of combustion gas volumes to heat inputs either unit-specific or as defined in 40 CFR Part 60, Appendix A, Method 19.

(9) "Four-hour block average" or "4-hour block average" means the average of all hourly emission concentrations when a municipal waste combustor is operating and combusting municipal solid

waste measured over 4-hour periods from midnight to 4 a.m., 4 a.m. to 8 a.m., 8 a.m. to noon, noon to 4 p.m., 4 p.m. to 8 p.m., and 8 p.m. to midnight.

(10) "Historical actual twenty-four hour daily NOx average" means one or more calendar years of CEM data from no earlier than 1994 or another period of data approved by the commissioner as representative of NOx emissions.

(11) "Malfunction" means any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, process equipment or a process to operate in a normal or usual manner. A failure that is caused in part by poor maintenance or negligent or careless operation shall not be considered a malfunction.

(12) "Mass burn waterwall combustor" means a field-erected combustor that combusts primarily unprocessed municipal solid waste (i.e., municipal solid waste that is not processed-municipal solid waste) in a waterwall furnace.

(13) "Maximum demonstrated municipal waste combustor unit load" means the highest 4-hour arithmetic average municipal waste combustor unit load achieved during four consecutive hours of operation that corresponds to a test run during the most recent dioxin/furan emissions performance test that demonstrates compliance with the applicable limit for dioxin/furan specified in subsection (c) of this section.

(14) "Maximum demonstrated particulate matter control device temperature" means the highest 4-hour arithmetic average flue gas temperature measured at the particulate matter control device inlet during four consecutive hours of operation that corresponds to a test run during the most recent dioxin/furan emissions performance test that demonstrates compliance with the applicable limit for dioxin/furan specified in subsection (c) of this section.

(15) "mg/dscm" means milligrams of air pollutant per dry standard cubic meter.

(16) "Municipal solid waste" means municipal solid waste as defined in section 22a-207 of the general statutes.

(17) "Municipal waste combustor," "municipal waste combustor unit" or "MWC" means any part or activity of any stationary source which part or activity emits or has the potential to emit any regulated air pollutant or any hazardous air pollutant, exclusive of associated air pollution control equipment, that combusts municipal solid waste, inclusive of those emissions units combusting a single-item waste stream of tires. Combustors that combust landfill gases collected by landfill gas collection systems are not municipal waste combustors.

(18) "Municipal waste combustor plant" or "plant" means any premises at which one or more municipal waste combustor units are situated.

(19) "Municipal waste combustor unit load" means the rate at which steam is produced at a municipal waste combustor (measured in lbs/hr or kg/hr).

(20) "ng/dscm" means nanograms of air pollutant per dry standard cubic meter.

(21) "NOx Emissions Reductions Credit" or "ERC" means an allocation created in the nitrogen oxides emissions trading program described by this section.

(22) "NOx Trading Baseline" means that value, determined as specified in subsection (d) of this section, used to calculate the quantity of ERCs created or used by a MWC unit.

(23) "Ozone season" means the period of any calendar year beginning on May 1 and ending on September 30.

(24) "Premises" means the grouping of all stationary sources at any one location and owned by or under the control of the same person or persons.

(25) "Processed-municipal solid waste" means a type of municipal solid waste produced by sorting municipal solid waste by size and/or altering the size of municipal solid waste through mechanical means.

(26) "Processed-municipal solid waste combustor" means a steam-generating MWC that burns processed-municipal solid waste in a semisuspension firing mode using air-fed distributors.

(27) "Reciprocating grate waste tire fired incinerator/boiler" means a combustor that burns tires as its principal fuel.

(28) "Scf/mmBTU" means cubic feet at standard conditions per million British thermal unit.

(29) "Shift operator" means an individual who is in direct charge of the operation of a shift of a municipal waste combustor plant and who is responsible for on-site supervision, technical direction, management and overall performance of the plant during a shift.

(30) "Shutdown period" means the period of time commencing when a municipal waste combustor operator discontinues the feed of municipal solid waste to the combustor in order to cease operation.

(31) "Six-minute arithmetic average" or "6-minute arithmetic average" means the arithmetic mean calculated from thirty-six (36) or more data points equally spaced over each 6-minute period.

(32) "Standard conditions" means a temperature of 20 degrees centigrade and a pressure of 101.3 kilopascals.

(33) "Startup period" means that period of time commencing when a municipal waste combustor begins the continuous burning of municipal solid waste, exclusive of any warmup period when a municipal waste combustor is combusting fossil fuel or other nonmunicipal solid waste fuel, and no municipal solid waste is being fed to the combustor.

(34) "Total mass" or "total mass dioxin/furan" means the total mass of tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans, as determined using EPA Reference Method 23 and the procedures specified under subdivision (4) of subsection (i) of this section.

(35) "Twenty-four hour daily average" means the arithmetic mean of all hourly emission concentrations as required by this section when a unit is operating and combusting municipal solid waste measured over a 24-hour period between midnight and the following midnight.

(36) "Twenty-four hour geometric average" means the geometric mean of hourly emission concentrations regulated by this section when a unit is operating and combusting municipal solid

waste measured over a 24-hour period between midnight and the following midnight. The geometric mean shall be calculated using the following equation:

$$E_{ga} = e^{\left[\frac{1}{n}\sum_{j=1}^{n}[\ln(E_{hj})]\right]}$$

where:

E_{ga} = *daily geometric average pollutant concentration, corrected to 7% O_2 or equivalent percent CO_2;*

E_{hj} = *hourly arithmetic average pollutant concentration, corrected to 7% O_2 or equivalent percent CO_2;*

n = *total number of hourly averages for which pollutant concentrations are available within the 24 hour midnight to midnight daily period;*

ln = *natural log of the indicated value; and*

e = *the natural logarithmic base (2.718) raised to the value enclosed by the brackets.*

(37) "Waterwall furnace" means a combustion unit having energy (heat) recovery in the furnace (i.e., radiant heat transfer section) of the combustor.

(b) Applicability.

(1) This section shall apply to the owner or operator of any municipal waste combustor.

(2) Physical or operational changes made to a municipal waste combustor primarily for the purpose of complying with the requirements of this section 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.

(3) The owner or operator of any municipal waste combustor required to have a permit under section 3005 of the Solid Waste Disposal Act (42 U.S.C.A. section 6925) is not subject to this section.

(4) The owner or operator of any recycling facility as defined in section 22a-207 of the general statues, including a primary or secondary smelter, that combusts waste for the primary purpose of recovering metals is not subject to this section.

(5) This section shall not apply to cement kilns firing municipal solid waste.

(6) The owner or operator of any cofired combustor is not subject to this section provided such owner or operator:

(A) Notifies the commissioner in writing prior to the compliance date indicated in subsection (m) of this section that the owner or operator claims such combustor is not subject to this section, if the cofired combustor is an existing unit, or such owner or

operator notifies the commissioner in writing prior to commencing operation, if the cofired combustor is a unit for which construction commences after the effective date of this section;

(B) Provides the commissioner with a copy of the federally enforceable permit limiting the unit to combusting a fuel feed stream, thirty percent (30%) or less of the weight of which is composed, in the aggregate, of municipal solid waste as measured on a calendar quarter basis;

(C) Records on a calendar quarter basis the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor; and

(D) Maintains the records required by subparagraph (C) of this subdivision at the premises for a period of five (5) years from the date of the record's creation and makes such records available to the commissioner or administrator upon request.

(c) Emission limits.

(1) On and after the date specified in subsection (m) of this section, no owner or operator of a municipal waste combustor for which construction commenced prior to September 20, 1994 shall cause or allow the emission of any air pollutant in excess of the applicable emission limit identified in Tables 38-1 and 38-1a of this subdivision.

Table 38-1. Air Pollutant Emission Limits for MWCs for which Construction Commenced Prior to September 20, 1994.

Air pollutant	Emission limit
Particulate matter	27 mg/dscm
Cadmium	0.040 mg/dscm
Lead	0.44 mg/dscm
Mercury	0.080 mg/dscm, or 85% reduction by weight measured as required by subdivision (7) of subsection (c) of this section
Sulfur dioxide -- Reciprocating grate waste tire fired incinerator/boilers	51 parts per million by volume (ppmvd), or 75% reduction by weight or volume measured as required by subdivision (7) of subsection (c) of this section
Sulfur dioxide -- All other MWCs	29 parts per million by volume (ppmvd), or 75% reduction by weight or volume measured as required by subdivision (7) of subsection (c) of this section
Hydrogen chloride	29 parts per million by volume (ppmvd), or 95% reduction by weight or volume measured as required by subdivision (7) of subsection (c) of this section
Dioxin/furan	30 ng/dscm total mass
Opacity	10%

Table 38-1a. Additional Air Pollutant Emission Limits for MWCs for which Construction Commenced Prior to September 20, 1994.

Air pollutant	Emission limit
Mercury	0.028 mg/dscm, or 85% reduction by weight measured as required by subdivision (7) of subsection (c) of this section

(2) On and after the date specified in subsection (m) of this section, no owner or operator of a municipal waste combustor for which construction, modification or reconstruction commenced on or after September 20, 1994 shall cause or allow the emission of any air pollutant in excess of the applicable emission limit identified in Tables 38-2 and 38-2a of this subdivision.

Table 38-2. Air Pollutant Emission Limits for MWCs for which Construction, Modification or Reconstruction Commenced on or after September 20, 1994.

Air pollutant	Emission limit
Particulate matter (PM)	24 mg/dscm
Cadmium (Cd)	0.020 mg/dscm
Lead (Pb)	0.20 mg/dscm
Mercury (Hg)	0.080 mg/dscm, or 85% reduction by weight measured as required by subdivision (7) of subsection (c) of this section
Sulfur dioxide (SO_2)	29 parts per million by volume (ppmvd), or 80% reduction by weight or volume measured as required by subdivision (7) of subsection (c) of this section
Hydrogen chloride (HCl)	25 parts per million by volume (ppmvd), or 95% reduction by weight or volume measured as required by subdivision (7) of subsection (c) of this section
Dioxin/furan	13 ng/dscm total mass
Opacity	10%

Table 38-2a. Additional Air Pollutant Emission Limits for MWCs for which Construction, Modification or Reconstruction Commenced on or after September 20, 1994.

Air pollutant	Emission limit
Mercury	0.028 mg/dscm, or 85% reduction by weight measured as required by subdivision (7) of subsection (c) of this section

(3) Continuous compliance with the particulate matter, cadmium, lead, mercury, hydrogen chloride and/or dioxin/furan emission limits shall be determined based on an initial performance test, annual performance test or other appropriate performance test, as determined in writing by the commissioner unless otherwise allowed by this section. Such tests shall be performed as required by subsection (i) of this section.

(4) Continuous compliance with the sulfur dioxide emission limits contained herein shall be based on a 24-hour daily geometric average of the hourly arithmetic average emission concentrations using CEM system outlet data if compliance is based on an emission

concentration, or CEM system inlet and outlet data if compliance is based on a percent reduction.

(5) Continuous compliance with the opacity emission limit contained herein shall be based on a six-minute arithmetic average.

(6) For an air pollutant for which this subsection provides for an emission limit measured either as a concentration or as a percentage reduction by weight or volume, the less stringent emission limit shall prevail.

(7) For an air pollutant for which this subsection provides for an emission limit measured either as a percent reduction by weight or a percent reduction by volume, compliance shall be determined by measuring the concentration of air pollutant at the outlet of the air pollution control device that discharges directly to the stack, subtracting it from the concentration at the inlet of the air pollution control device that receives exhaust gases directly from the combustion chamber, dividing the difference by the concentration of air pollutant at the inlet to the air pollution control device that receives exhaust gases directly from the combustion chamber and then multiplying that result by a factor of one-hundred (100).

(8) On and after the date specified in subsection (m) of this section, no owner or operator of a municipal waste combustor shall cause or allow the emission of nitrogen oxides (NOx) in excess of the applicable emission limit identified in Table 38-3 of this subdivision.

Table 38-3. Nitrogen Oxides Emission Limits.

Municipal waste combustor technology	**Nitrogen oxides emission limit, measured in parts per million volume, corrected to seven percent oxygen, dry basis, or equivalent percentage carbon dioxide as specified in subdivision (12) of this subsection**
Mass burn refractory combustor	185
Mass burn waterwall combustor for which construction commenced prior to September 20, 1994	205
Mass burn waterwall combustor for which construction commenced on or after September 20, 1994	180 for the one-year period beginning on the date of completion of the initial performance test required by this section, and 150 for that period of time subsequent to the one-year period identified above
Processed-municipal solid waste combustor	220
Reciprocating grate waste tire fired incinerator/boiler	79

(9) Continuous compliance with the nitrogen oxides emission limits contained herein shall be based on a 24-hour daily arithmetic average.

(10) On and after the date specified in subsection (m) of this section, no owner or operator of a municipal waste combustor shall cause or allow an emission of carbon monoxide in excess of the applicable emission limit identified in Table 38-4 of this subdivision.

Table 38-4. Carbon Monoxide Emission Limits.

Municipal waste combustor technology	Carbon monoxide emission limit, measured in parts per million volume at the combustor outlet and corrected to seven percent oxygen, dry basis, or equivalent percentage carbon dioxide as specified in subdivision (c)(12) of this section	Averaging time, in hours, calculated as an arithmetic average
Mass burn refractory combustor	100	4
Mass burn waterwall combustor	100	4
Processed-municipal solid waste combustor for which construction commenced prior to September 20, 1994	200	24
Processed-municipal solid waste combustor for which construction commenced on or after September 20, 1994	150	24
Reciprocating grate waste tire fired incinerator/boiler	180	4

(11) Except as provided by this subsection, the emission limits specified in this subsection apply at all times except during periods of startup, shutdown or malfunction. The duration of each startup, shutdown or malfunction period shall be limited to three hours per occurrence. This exemption shall not apply to opacity limits. However, during each period of startup, shutdown or malfunction, the opacity limits shall not be exceeded during more than five (5) 6-minute arithmetic average measurements.

(12) All emission limits in this subsection, except for those identified for opacity, shall be corrected to seven percent oxygen (7% O_2), unless the owner or operator submits information to justify a correction to an equivalent percent carbon dioxide (% CO_2) and receives the commissioner's written approval. If the owner or operator of a MWC seeks to use an

equivalent % CO_2, the owner or operator must demonstrate the relationship between O_2 and CO_2 levels as specified in subparagraph (J) of subdivision (4) of subsection (i) of this section and submit a written report to the commissioner summarizing the results of the demonstration. This relationship may be reestablished during any performance test conducted pursuant to subsection (i) of this section.

(13) During the operation of a MWC unit, the carbon injection system operating parameter(s) that are the primary indicator(s) of the carbon mass feed rate (e.g., screw feeder setting) must equal or exceed the level(s) documented during the performance tests specified under subsection (i) of this section, based on a 24-hour daily average.

(14) Notwithstanding subparagraphs (D), (E) and (F) of subdivision (4) of subsection (i) of this section, for the purpose of submitting compliance certifications or for the purpose of the commissioner establishing whether the owner or operator has violated or is in violation of any emission limit or standard in this subdivision, nothing shall preclude the commissioner's use, including the exclusive use, of any appropriate performance test results, credible evidence or information relevant to demonstrating compliance with the applicable requirements of this section.

(d) Nitrogen oxides (NOx) emissions trading program.

(1) The owner or operator of a MWC unit for which construction commenced prior to December 20, 1989 may use emissions trading to meet some or all of the NOx emission reductions required for compliance with the emission limits in subdivision (8) of subsection (c) of this section, subject to the limitations described in this subsection for the NOx emissions trading program.

(2) The owner or operator of a municipal waste combustor for which construction commenced on or after December 20, 1989 may participate in the NOx emissions trading program described in this subsection as follows:

(A) Such owner or operator may not use NOx Emission Reduction Credits (ERCs) to comply with the applicable NOx emission limits in subsection (c) of this section; and

(B) Such owner or operator may create ERCs in accordance with the requirements of this subsection if actual NOx emissions from a unit are lower than the applicable NOx emission limits in subsection (c) of this section and lower than any applicable NOx Trading Baseline.

(3) For inclusion in the NOx emissions trading program, an owner or operator of a municipal waste combustor unit shall submit a NOx trading protocol to the commissioner for review and written approval on or before December 1, 1999. The protocol shall include, at a minimum:

(A) A formal request to participate in the NOx trading program;

(B) A NOx Trading Baseline and supporting data. The NOx Trading Baseline shall be determined as follows:

(i) If the historical actual twenty-four hour daily NOx average (ppmv @ 7% O_2 or ppmv @ an equivalent % CO_2, as specified in subdivision (12) of subsection (c)

of this section) is higher than the applicable NOx limit set forth in subsection (c) of this section, then the applicable subsection (c) NOx limit shall be the NOx Trading Baseline,

(ii) If the historical actual twenty-four hour daily NOx average (ppmv @ 7% O_2 or ppmv @ an equivalent % CO_2, as specified in subdivision (12) of subsection (c) of this section) is lower than the applicable NOx limit set forth in subsection (c) of this section and such lower average concentration is the result of installation of control equipment or modification of a MWC unit solely for the purposes of meeting the requirements of this regulation or section 22a-174-22 of the Regulations of Connecticut State Agencies, then the applicable NOx limit of subsection (c) of this section shall be the NOx Trading Baseline. Control equipment or modifications installed prior to 1990, or installed on new sources since 1990 or installed to meet BACT or LAER requirements shall not be considered as having been installed as a result of the requirements of this section or section 22a-174-22, or

(iii) If the historical actual twenty-four hour daily NOx average (ppmv @ 7% O_2 or ppmv @ an equivalent % CO_2, as specified in subdivision (12) of subsection (c) of this section) is lower than the applicable NOx limit set forth in subsection (c) of this section, then a NOx Trading Baseline shall be established based on the historical actual twenty-four hour daily NOx average;

(C) A detailed methodology for determining and recording hourly heat input (mmBTU/hr); and

(D) All calculations, using the formulas provided in subparagraph (E) of subdivision (4) of this subsection, of the number of ERCs created and/or used. Calculations shall specify unit-specific values for NOx limits, f-factors and CO_2 correction factors, as applicable.

(4) The owner or operator of a municipal waste combustor unit participating in the MWC NOx emissions trading program shall use the following methodology to determine on a daily basis the quantity of ERCs created or used:

(A) Calculate NOx Daily Average Concentration (24-hour block arithmetic average basis) and compare it to the applicable NOx limit of subdivision (8) of subsection (c) of this section;

(B) If the NOx Daily Average Concentration is greater than the applicable NOx limit of subdivision (8) of subsection (c) of this section, then calculate the number of ERCs used;

(C) If the NOx Daily Average Concentration is less than the applicable NOx limit of subdivision (8) of subsection (c) of this section but greater than the NOx Trading Baseline, then ERCs shall neither be used nor created;

(D) If the NOx Daily Average Concentration is less than the NOx Trading Baseline, calculate the number of ERCs created; and

(E) Use the following formulas to calculate the number of ERCs used or created:

lbs ERCs used =

[NOx Daily Average Concentration - (0.95 x applicable NOx limit of subdivision (8) of subsection (c) of this section)]
x [1.194×10^{-7}] x [Diluent Correction] x [f-factor]
x [Daily Heat Input Rate Average]
x [# of Actual Operating Hours in the Daily Averaging Period]

lbs ERCs created =

[NOx Trading Baseline - NOx Daily Average Concentration]
x [1.194×10^{-7}] x [Diluent Correction] x [f-factor]
x [Daily Heat Input Rate Average]
x [# of Actual Operating Hours in the Daily Averaging Period]
x [0.85]

where:

NOx Daily Average Concentration: Average of all valid hourly NOx values (ppmvd @ 7% O_2 or ppmv @ an equivalent % CO_2) recorded during the Daily Averaging Period.

1.194×10^{-7}: NOx concentration conversion factor.

Diluent Correction: If O_2 is used as the diluent, then the diluent correction = [20.9 / 20.9 - 7]. If CO_2 is used as the diluent, then the diluent correction = [100 / equivalent % CO_2].

f-factor: If O_2 is used as the diluent, then fd is in the units of dscf/mmBTU. If CO_2 is used as the diluent, then fc is in the units of scf/mmBTU. An f-factor may be either unit-specific or adopted from Table 19-1 in 40 CFR Part 60, Appendix A, Method 19.

Daily Heat Input Rate Average: Average of all valid hourly Heat Input Rate values (mmBTU/hr) recorded during the Daily Averaging Period.

Daily Averaging Period: The total of all operating hours in a day during which municipal solid waste is being fed to a boiler and/or when the boiler load is at least 75% of maximum rated capacity.

NOx Trading Baseline: The NOx concentration used as the baseline from which ERC creation is determined. The Trading Baseline will be the applicable NOx limit of subdivision (8) of subsection (c) of this section or, if the historical actual daily average concentration is less than the applicable NOx limit of subdivision (8) of subsection (c) of this section, the value established by the commissioner (ppmvd @ 7% O_2 or ppmv @ an equivalent % CO_2).

0.85: This factor represents 10% ERC retirement for environmental benefits and 5% retirement for heat input measurement uncertainties. If the owner or operator installs and calibrates exhaust gas flow monitors in a manner acceptable to the commissioner, certifies that the equipment specifications have been met and are being met and uses such monitors to determine heat input to the unit, then 0.90 can be substituted for 0.85.

(5) Any MWC owner or operator seeking to create ERCs pursuant to this subsection shall:

(A) In accordance with subsection (k) of this section, maintain records for each MWC unit showing daily NOx mass emissions, actual NOx concentrations (24-hour average), daily operating hours and ERCs created; and

(B) Submit a written request to the commissioner for approval of ERCs created prior to the use, sale or transfer of such ERCs. Such request shall include the following minimum information:

(i) the monthly operating reports of actual fuel use in mmBTU,

(ii) the daily actual NOx mass emissions and NOx concentrations (24-hour average),

(iii) the number of valid data hours in each 24-hour period for which approval is requested,

(iv) the number of operating hours per day, and

(v) the quantity of ERCs created.

(6) Any MWC owner or operator intending to use ERCs pursuant to this subsection shall:

(A) No later than the first day of each calendar month, calculate, in tons, ERCs per month for each MWC unit, the projected maximum number of ERCs required for that calendar month using the formulas provided in subparagraph (E) of subdivision (4) of this subsection;

(B) No later than the first day of each calendar month, acquire a sufficient number of ERCs approved by the commissioner to match the quantity needed as determined according to subparagraph (A) of this subdivision. The quantity needed may be satisfied with unused ERCs created or acquired in previous months, subject to the restrictions of subparagraph (D) of this subdivision. Credits to be used during the ozone season must have been generated during the ozone season;

(C) No later than the twentieth day of each month, calculate and record the actual quantity of ERCs used in the preceding calendar month;

(D) Maintain documentation demonstrating that ERCs used during the ozone season were generated during an ozone season. An ERC generator certification shall be sufficient for such demonstration;

(E) Prior to May 1, 2001, any ERCs used for meeting the emission limits contained in subdivision (8) of subsection (c) of this section shall be created within the two (2) year period preceding the date of such ERC use; and

(F) On and after May 1, 2001, any ERCs used to meet the emission limits contained herein shall be created on or after May 1, 1999.

(7) No later than January 30 of each year, the MWC owner or operator shall provide to the commissioner a report containing the following information:

(A) A record for the previous calendar year of each use, sale or other transfer of any and all of the ERCs created in accordance with this subsection; and

(B) A record for the previous calendar year of actual NOx emissions from the facility and each MWC unit, the quantity of ERCs created and the quantity of ERCs used, on a monthly basis and an ozone season basis.

(8) Any reports required by this subsection shall be made on forms furnished or prescribed by the commissioner.

(9) Any creation or use of ERCs for the purposes of this subsection shall conform to the provisions of the U.S. Environmental Protection Agency's "Economic Incentive Program Rules," 40 CFR Part 51, Subpart U.

(10) Any emission reductions under this subsection for the purposes of ERC creation shall be:

(A) Calculated in a reliable and replicable manner; and

(B) Not a reduction required by any provision of the state implementation plan at the time the reduction was made, relied upon in an applicable attainment demonstration or required by state or federal permit or order, except where a state or federal permit or order is used to set a NOx trading baseline as defined by subdivision (3) of this subsection.

(11) It shall be a violation of this section if the calculation specified by subparagraph (C) of subdivision (6) this subsection demonstrates that any MWC owner or operator did not hold or acquire a sufficient number of ERCs to comply with the NOx emission limits contained herein. In addition, the MWC owner or operator shall acquire additional ERCs in an amount equal to three (3) ERCs for every one (1) ERC needed for compliance, had the ERCs been held or acquired at the time specified in subparagraph (B) of subdivision (6) of this subsection. The additional ERCs shall be acquired on or before the last day of the calendar month in which the calculation specified by subparagraph (C) of subdivision (6) of this subsection is performed. Nothing herein shall preclude the commissioner from taking other enforcement action against the owner or operator for failing to hold or acquire a sufficient number of ERCs prior to their use.

(e) [Reserved.]

(f) Fugitive ash emissions.

(1) On and after the date specified in subsection (m) of this section, no owner or operator of a municipal waste combustor plant shall cause to be discharged to the atmosphere visible emissions of combustion ash from an ash conveying system, including conveyor transfer points, in excess of five percent (5 %) of the observation period (i.e., nine (9) minutes per three-hour period), as specified in subparagraph (I) of subdivision (4) of subsection (i) of this section.

(2) The emission limit specified in subdivision (1) of this subsection does not cover visible emissions discharged inside buildings or within enclosures of ash conveying systems; however, the emission limit specified in subdivision (1) of this subsection does cover visible

emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.

(3) The provisions specified in subdivision (1) of this subsection do not apply during maintenance and repair of ash conveying systems, however, all reasonable measures to control fugitive emissions on such occasions shall be implemented.

(g) Operating practices.

(1) No owner or operator of a municipal waste combustor unit shall cause or allow such unit to operate at a temperature, measured at each particulate control device inlet, more than seventeen (17) degrees centigrade, based on a 4-hour arithmetic average, above the maximum demonstrated particulate control device temperature measured during the most recent performance test for dioxin/furan emissions for which compliance with the dioxin/furan emissions limit was achieved.

(2) No owner or operator of a municipal waste combustor unit shall cause or allow such unit to operate at a municipal waste combustor unit load greater than one hundred ten percent (110 %) of the maximum demonstrated 4-hour average municipal waste combustor unit load, based on a 4-hour arithmetic average, measured during the most recent performance test for dioxin/furan emissions for which compliance with the dioxin/furan emissions limit was achieved. Municipal waste combustor unit load shall be measured by a steam flow meter.

(3) An owner or operator may, notwithstanding subdivisions (1) and (2) of this subsection, during the annual dioxin/furan emissions performance test and for two (2) weeks prior to such test, allow temperatures in excess of that specified in subdivision (1) of this subsection and municipal waste combustor unit load limits in excess of that specified in subdivision (2) of this subsection. However, should the owner or operator operate the unit at such excess temperatures and load, the owner or operator shall not again be allowed to operate at such excess temperatures and load during that test period without the approval of the commissioner should the annual dioxin/furan emission performance test be postponed.

(4) The particulate matter control device temperature limits and municipal waste combustor unit load limit may be waived temporarily by the commissioner to allow evaluation of system performance, testing of new technology or control technologies or diagnostic testing, provided that any such temporary waiver is authorized through a permit or order issued prior to an evaluation of system performance, testing of new technology or control technologies or diagnostic testing.

(5) During the operation of a MWC unit, the carbon injection system operating parameter(s) that is the primary indicator(s) of the carbon mass feed rate (e.g., screw feeder setting) shall equal or exceed the level(s) documented during the performance tests specified under subsection (i) of this section, based on a 24-hour arithmetic average.

(h) Operator training and certification.

(1) No owner or operator of a municipal waste combustor plant shall cause or allow such plant to be operated at any time unless a certified chief operator or shift operator is physically present at the plant.

(2) Operators shall be certified by the commissioner under section 22a-231-1 of the Regulations of Connecticut State Agencies and shall be identified as either a Class I or Class II chief operator or a Class I or Class II shift operator.

(3) All chief operators and shift operators must satisfactorily complete an operator training course conducted by the commissioner no later than 180 days following the effective date of this section or the date six months after the date of plant startup, whichever is later. Chief operators and shift operators hired after this time must satisfactorily complete such course within six (6) months of the date of employment.

(4) No later than one year after the effective date of this section, the owner or operator of a municipal waste combustor shall develop a site-specific Municipal Waste Combustor Operating & Maintenance Manual with an index or revise an existing operating and maintenance manual to meet the requirements of this section. Such Municipal Waste Combustor Operating & Maintenance Manual shall be updated on an annual basis. The Municipal Waste Combustor Operating & Maintenance Manual shall include:

(A) A summary of the applicable emission limits and operational requirements;

(B) A description of basic combustion theory applicable to a municipal waste combustor unit;

(C) Procedures for receiving, handling, and feeding municipal solid waste;

(D) Procedures for startup, shutdown and malfunction;

(E) Procedures for maintaining proper combustion air supply levels;

(F) Procedures for operating the combustor within the standards established under this section;

(G) Procedures for responding to periodic upset or off-specification conditions;

(H) Procedures for minimizing particulate matter carryover;

(I) Procedures for handling ash;

(J) Procedures for monitoring emissions; and

(K) Procedures for reporting and record keeping.

(5) The owner or operator of a municipal waste combustor plant shall establish a training program to review the Municipal Waste Combustor Operating & Maintenance Manual with each person who has responsibilities affecting the operation of a MWC plant including, but not limited to, the chief operator, shift operator, ash handler, maintenance employee and crane/load handler. The owner or operator shall train new employees with the job positions identified in this subdivision prior to each new employee's assumption of any responsibilities at a MWC plant. The owner or operator shall train those who presently are employed in the job positions identified in this subdivision within one year after the effective date of this section.

Following initial training, the training program shall be repeated on an annual basis for each person identified in this subdivision.

(6) The Operating & Maintenance Manual shall be kept in a location readily accessible to all persons identified in subdivision (5) of this subsection and shall be available for inspection by the commissioner or Administrator upon request.

(i) Performance testing.

(1) Each MWC owner or operator shall conduct an initial performance test to determine compliance with the emission limits specified in this section. All performance tests shall be conducted under representative full load operating conditions. The initial performance test for each pollutant for which a limit is specified in this section shall be completed within 180 days after the final compliance date identified in subsection (m) of this section.

(2) Following the date that the initial performance tests for dioxin/furan, particulate matter, hydrogen chloride, cadmium, lead and mercury are completed, the owner or operator of a municipal waste combustor shall conduct an annual performance test for these pollutants no more than twelve (12) calendar months following the previous performance test.

(3) Notwithstanding subdivision (2) of this subsection, upon demonstration for two (2) consecutive years that the dioxin/furan emission levels from all units at a MWC plant for which construction commenced prior to September 20, 1994 are less than fifteen (15) ng/dscm total mass or, for all units for which construction, modification or reconstruction commenced on or after September 20, 1994, and are less than seven (7) ng/dscm total mass, the MWC owner or operator shall only be required to conduct performance testing for dioxin/furan on one unit at that MWC plant. The owner or operator shall rotate performance testing among units no more than twelve (12) months following the previous performance test in a fixed sequence so that each unit is tested at the same frequency. If in any year following the year of election of such reduced testing, the dioxin/furan emission test results indicate a level equal to or greater than fifteen (15) ng/dscm total mass for any unit for which construction commenced prior to September 20, 1994, or greater than seven (7) ng/dscm total mass for any unit for which construction, modification or reconstruction commenced on or after September 20, 1994, then the MWC owner or operator shall resume testing of all units at the MWC plant during the next annual performance test. The owner or operator shall continue to test all units on an annual basis until the performance tests for all units indicate dioxin/furan emission levels that meet the requirements of this subdivision, at which time the owner/operator may resume testing in accordance with this subdivision.

(4) Each MWC owner or operator shall employ the following methodologies:

(A) Testing for particulate matter and opacity levels shall be conducted in accordance with the following procedures:

(i) 40 CFR Part 60, Appendix A, Reference Method 1 shall be used to select the sampling site and number of traverse points for particulate matter testing,

(ii) 40 CFR Part 60, Appendix A, Reference Method 3 shall be used for flue gas analysis for particulate matter testing,

(iii) 40 CFR Part 60, Appendix A, Reference Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters. The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature no greater than 160 +/- 14 degrees centigrade. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 test run for particulate matter required under this section,

(iv) 40 CFR Part 60, Appendix A, Reference Method 9 shall be used for determining compliance with the opacity emissions limit, except as provided under 40 CFR Part 60.11(e), and

(v) The compliance determination for particulate matter shall be based on an arithmetic average determined using all data generated in three (3) test runs as required by this section;

(B) Testing for cadmium and lead levels shall be conducted in accordance with the following procedures:

(i) 40 CFR Part 60, Appendix A, Reference Method 1 shall be used for determining the location and number of sampling points,

(ii) 40 CFR Part 60, Appendix A, Reference Method 3 shall be used for flue gas analysis,

(iii) 40 CFR Part 60, Appendix A, Reference Method 29 shall be used for determining compliance with the cadmium and lead emission limits,

(iv) An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 29 test run for cadmium and lead required under this section,

(v) The minimum sample time shall be two (2) hours per each Method 29 test run, and

(vi) The compliance determinations for cadmium and lead shall be based on an arithmetic average determined using all data generated in three (3) test runs as required by this section;

(C) Testing for mercury levels shall be conducted in accordance with the following procedures:

(i) 40 CFR Part 60, Appendix A, Reference Method 1 shall be used for determining the location and number of sampling points,

(ii) 40 CFR Part 60, Appendix A, Reference Method 3 shall be used for flue gas analysis,

(iii) 40 CFR Part 60, Appendix A, Reference Method 29 shall be used for determining compliance with the mercury emission limits. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 29 test run for mercury required under this section,

(iv) The minimum sample time shall be two (2) hours per each Method 29 test run,

(v) The percent reduction in the potential mercury emissions ($\%P_{Hg}$) is computed using the following:

$$(\%P_{Hg}) = \left(\frac{E_i - E_o}{E_i}\right) x\ 100$$

where:

$\%P_{hg}$ = percent reduction of the potential mercury emissions achieved.

E_i = potential mercury emission concentration measured at the control device inlet, corrected to 7 % O_2 (dry basis).

E_o = controlled mercury emission concentration measured at the mercury control device outlet, corrected to 7 % O_2 (dry basis), and

(vi) The compliance determinations for mercury shall be based an arithmetic average of emission concentrations or percent reductions determined using all data generated in a minimum of at least three (3) test runs as required by this section;

(D) Compliance with the sulfur dioxide emission limit (measured as a concentration or as a percent reduction by weight or volume) shall be determined by using the CEM system specified in subdivision (1) of subsection (j) of this section;

(E) Compliance with the nitrogen oxide emission limit shall be determined by using the CEM system specified in subdivision (1) of subsection (j) of this section;

(F) Compliance with the carbon monoxide emission limit shall be determined by using the CEM system specified in subdivision (1) of subsection (j) of this section;

(G) Testing for hydrogen chloride levels shall be conducted in accordance with the following procedures:

(i) 40 CFR Part 60, Appendix A, Reference Method 26 or 26A, as applicable, shall be used to determine the hydrogen chloride emission concentration. The minimum sampling time for Method 26 shall be one (1) hour,

(ii) An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 26 test run for hydrogen chloride required by this section,

(iii) The percent reduction in potential hydrogen chloride emissions (% P_{HCl}) shall be computed using the following equation:

$$(\%P_{HCl}) = \left(\frac{E_i - E_o}{E_i}\right) x\ 100$$

where:

$\%P_{HCl}$ = percent reduction of the potential hydrogen chloride

emissions achieved.

E_i = potential hydrogen chloride emission concentration measured at the control device inlet, corrected to 7 % O_2 (dry basis).

E_o = controlled hydrogen chloride emission concentration measured at the control device outlet, corrected to 7 % O_2 (dry basis), and

(iv) The compliance determination for hydrogen chloride shall be based on an arithmetic average of emission concentrations or percent reductions determined using all data generated in three (3) test runs as required by this section;

(H) Testing for dioxin/furan levels shall be conducted in accordance with the following procedures:

(i) 40 CFR Part 60, Appendix A, Reference Method 1 shall be used for determining the location and number of sampling points,

(ii) 40 CFR Part 60, Appendix A, Reference Method 3 shall be used for flue gas analysis,

(iii) 40 CFR Part 60, Appendix A, Reference Method 23 shall be used for determining the dioxin/furan emission concentration,

(iv) The minimum sample time shall be four (4) hours per test run,

(v) An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 23 test run for dioxin/furan required by this section, and

(vi) The compliance determination for dioxin/furan levels shall be based on an arithmetic average determined using all data generated as required by this section in three (3) test runs;

(I) Testing for fugitive ash emissions shall be conducted in accordance with the following procedures:

(i) 40 CFR Part 60, Appendix A, Reference Method 22 shall be used for determining compliance with the fugitive ash emissions limit,

(ii) The minimum observation time shall be a series of three (3) one-hour observations, and

(iii) The observation period shall include representative operational times when the facility is transferring ash from the municipal waste combustor unit to the area where ash is stored or loaded into containers or trucks;

(J) Testing for the relationship between carbon dioxide and oxygen shall be conducted in accordance with the following procedures:

(i) At least three (3) test runs of CO_2 and O_2 diluent data shall be obtained using the procedures and methods contained in 40 CFR Part 60, Appendix A, Reference Method 3A or 3B,

(ii) For each test run, using the following equation, a calculation shall be made of the CO_2 correction factor which is equivalent to a 7% O_2 correction factor:

$$CO_2 \ correction \ factor = \frac{13.9}{(20.9 - O_{2\ measured})} \ x \ CO_{2\ measured}$$

, and

(iii) Calculation of a unit-specific equivalent CO_2 correction factor shall be the arithmetic mean of the result obtained from the three (3) test runs and the calculation of the CO_2 correction factor for each test run pursuant to subparagraph (J)(ii) of this subdivision, rounded to the nearest whole number; and

(K) During the performance tests for dioxin/furan and mercury, as applicable, the owner or operator shall estimate an average carbon mass feed rate based on carbon injection system operating parameters such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed,
as follows:

(i) An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance test for mercury emissions and each subsequent performance test for mercury emissions, and

(ii) An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance test for dioxin/furan emissions and each subsequent performance test for dioxin/furan emissions.

(5) The owner or operator of a municipal waste combustor may elect to use any results of performance tests conducted by the commissioner to determine compliance with the emission limits or standards contained herein.

(j) Compliance monitoring.

(1) Continuous compliance with the emission limits specified in subsection (c) of this section for opacity, sulfur dioxide (SO_2), SO_2 reduction efficiency, nitrogen oxides (NOx) and carbon monoxide (CO) shall be determined based on continuous emission monitoring system data. No later than the applicable compliance date specified in subsection (m) of this section, the owner or operator of a municipal waste combustor shall install, operate and calibrate such continuous emission monitoring system in a manner acceptable to the commissioner and certify to the commissioner, in writing, that the equipment specifications for the continuous emission monitoring system have been and are being met. In addition to the aforementioned continuous monitoring systems, the owner or operator of a municipal waste combustor shall also install, operate, calibrate and maintain continuous monitoring systems for measuring the final particulate control device inlet temperature, municipal waste combustor unit load and the oxygen or carbon dioxide content of the flue gas at each location where carbon dioxide, sulfur dioxide or nitrogen oxide emissions are monitored. CEM systems shall meet the following requirements:

(A) Opacity monitors shall meet the applicable performance and quality assurance requirements of 40 CFR Part 60, Appendix B, Performance Specification 1; R.C.S.A. section 22a-174-4; and 40 CFR section 60.13;

(B) O_2 and CO_2 monitors shall meet the applicable performance and quality assurance requirements of 40 CFR Part 60, Appendix B, Performance Specification 3; 40 CFR Part 60, Appendix F, Procedure 1; and 40 CFR section 60.13;

(C) SO_2 monitors shall meet the applicable performance and quality assurance requirements of 40 CFR Part 60, Appendix B, Performance Specification 2; 40 CFR Part 60, Appendix F, Procedure 1; and 40 CFR section 60.13;

(D) NO_X monitors shall meet the applicable performance and quality assurance requirements of 40 CFR Part 60, Appendix B, Performance Specification 2; 40 CFR Part 60, Appendix F, Procedure 1; and 40 CFR section 60.13; and

(E) Carbon monoxide monitors shall meet the applicable performance and quality assurance requirements of 40 CFR Part 60, Appendix B, Performance Specification 4 or 4A (as applicable); 40 CFR Part 60, Appendix F, Procedure 1 and 40 CFR section 60.13.

(2) A MWC owner or operator shall comply with the following minimum data requirements:

(A) Data available for gaseous and process CEMs shall not be less than ninety percent (90%) of the total operating hours in any one calendar quarter;

(B) Data available for opacity CEMs shall not be less than ninety-five percent (95%) of the total operating hours in any one calendar quarter;

(C) At least three equally spaced data points per hour shall be used to calculate a one-hour average; and

(D) The percentage of data available shall be calculated in accordance with the procedures specified on forms furnished or prescribed by the commissioner.

(3) The mean difference criteria evaluation specified in 40 CFR Part 60, Appendix B, Performance Specification 4A shall be performed on the diluent corrected emission concentration values using the following equation:

$$Mean\ Difference = |\bar{d}| + |cc| \leq 5\ ppm$$

where, $|\bar{d}|$ = *absolute value of the mean of the differences*

$|cc|$ = *the confidence coefficient*

(k) Record keeping requirements.

(1) The owner or operator of a municipal waste combustor shall maintain records of the information specified in subdivisions (2) through (11) of this subsection, as applicable, labeling each record with the calendar date on which the data was generated. Each

record shall be maintained for a period of at least five (5) years from the date the record was created.

(2) Operator training and certification records shall be maintained on an annual basis, as follows:

(A) The names of the chief operators and shift operators, certified by the commissioner, and employed at the plant, including the dates of initial and renewal certifications and documentation of current certification;

(B) The names of the chief operators and shift operators who have completed an operator training course as required under subdivision (3) of subsection (h) of this section; and

(C) The names of the persons at the plant who have completed a training program as required under subdivision (5) of subsection (h) of this section.

(3) Emission concentrations and parameters, measured using a CEM system, shall be recorded as specified in this subdivision:

(A) All six-minute arithmetic average opacity levels;

(B) All one-hour average sulfur dioxide emission concentrations;

(C) All one-hour average sulfur dioxide reduction efficiency levels;

(D) All one-hour average nitrogen oxides emission concentrations; and

(E) All one-hour average carbon monoxide emission concentrations, municipal waste combustor unit load measurements, and particulate matter control device inlet temperatures.

(4) Average concentrations and percent reductions, as applicable, shall be maintained as specified in this subdivision:

(A) All 24-hour daily geometric average sulfur dioxide emission concentrations and all 24-hour daily geometric average percent reductions in sulfur dioxide emissions;

(B) All 24-hour daily arithmetic average nitrogen oxides emission concentrations;

(C) All 4-hour block or 24-hour daily arithmetic average carbon monoxide emission concentrations, as applicable; and

(D) All 4-hour block arithmetic average municipal waste combustor unit loads and particulate matter control device inlet temperatures.

(5) The calendar dates when any of the average emission concentrations, percent reductions, operating parameters or opacity levels recorded under subdivisions (3) or (4) of this subsection are above the applicable limit shall be identified. The reasons for such exceedances, a description of corrective actions taken and a description of the measures taken to prevent future exceedances shall also be recorded.

(6) The calendar dates for which the minimum number of hours of any of the data required by this section have not been obtained shall be identified, the reasons for not obtaining sufficient data, a description of corrective actions taken and a description of the measures taken to prevent future losses of data.

(7) Where sulfur dioxide emissions data, nitrogen oxides emissions data or operational data (i.e., carbon monoxide emissions, municipal waste combustor unit load and particulate matter control device temperature) have been excluded from the calculation of average emission concentrations or parameters, the owner or operator shall be identify such exclusion as well as the reason(s) for excluding the data.

(8) The results of daily calibrations and quarterly accuracy determinations for opacity, sulfur dioxide, nitrogen oxides, carbon monoxide and oxygen or carbon dioxide continuous emission monitoring systems shall be recorded.

(9) The test reports and supporting calculations documenting the results of an initial performance test conducted to determine compliance with the emission limits specified in this section for particulate matter, opacity, cadmium, lead, mercury, dioxin/furan emissions, hydrogen chloride and fugitive ash shall be recorded. The maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device temperature shall be recorded for the initial performance test for dioxin/furan emissions for each particulate matter control device. The test results and supporting calculations documenting the relationship between carbon dioxide and oxygen concentrations established in accordance with this section shall be recorded if established during the initial performance test.

(10) The test reports and supporting calculations documenting the results of all annual performance tests conducted to determine compliance with the emission limits specified in this section for particulate matter, opacity, cadmium, lead, mercury, dioxin/furan emissions, hydrogen chloride, and fugitive ash shall be recorded. The maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device temperature (for each particulate matter control device) shall be recorded for each performance test for dioxin/furan emissions. The relationship between carbon dioxide and oxygen concentrations shall be recorded if the relationship is reestablished during the annual performance test.

(11) For MWCs equipped with activated carbon injection systems for mercury or dioxin/furan emissions control, the records specified in this subdivision shall be maintained:

(A) Estimates of the average carbon mass feed rate, measured in kilograms per hour or pounds per hour, during the initial mercury performance test and all subsequent annual performance tests, with supporting calculations;

(B) Estimates of the average carbon mass feed rate, measured in kilograms per hour or pounds per hour, during the initial dioxin/furan emissions performance test and all subsequent annual performance tests, with supporting calculations;

(C) Estimates of the average carbon mass feed rate, measured in kilograms per hour or pounds per hour, for each hour of operation, with supporting calculations;

(D) For each calendar quarter, estimates of the total carbon usage for each MWC unit in kilograms or pounds for each calendar quarter by two independent methods, according to the procedures specified below:

(i) For each MWC unit, estimate the weight of carbon delivered, and

(ii) For each MWC unit, estimate the average carbon mass feed rate in kilograms per hour or pounds per hour for each hour of operation based on the parameters specified under subparagraph (K) of subdivision (i)(4) of this section, and sum the results for the total number of hours of operation during the calendar quarter;

(E) Carbon injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon feed rate (e.g., screw feeder speed); and

(F) The calendar dates when average carbon mass feed rates were less than either of the hourly carbon feed rates estimated during mercury or dioxin/furan emissions tests. The reasons for such feed rates and a description of corrective actions taken shall also be recorded.

(l) Reporting requirements.

(1) The MWC owner or operator shall submit an initial performance test report to the commissioner within sixty (60) days after the date of completion of the initial performance test as specified in subsection (i) of this section. Such an initial test report shall include the following:

(A) The initial performance test data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load and particulate matter control device inlet temperature;

(B) The initial performance test data for particulate matter, opacity, cadmium, lead, mercury, dioxin/furan, hydrogen chloride, and fugitive ash emissions. Dioxin/furan emissions shall be reported in the following units:

(i) ng/dscm total mass, corrected to seven percent oxygen or equivalent percent carbon dioxide, and

(ii) picograms per cubic meter, corrected to 12% CO_2 using 32 degrees Fahrenheit and 29.92 inches Hg as normal conditions, using the Toxic Equivalency Factors specified in subdivision (22) of section 22a-174-1 of the Regulations of Connecticut State Agencies;

(C) The performance evaluation for the continuous emission monitoring system using the applicable performance specifications and procedures cited in subsection (j) of this section;

(D) The maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device inlet temperature(s) established during the initial dioxin/furan performance test;

(E) For those units for which the relationship between carbon dioxide and oxygen is established as required by subdivision (12) of subsection (c) of this section, the owner or operator shall submit the results of the tests establishing the relationship, including test results, identification of the unit test, the date and time of each test run, and, as necessary, a schedule for making the appropriate modifications to the CEM system to incorporate the equivalent % CO_2 correction factor;

(F) For units that apply activated carbon injection for mercury control, the owner or operator shall submit the average carbon mass feed rate recorded under subdivision (11) of subsection (k) of this section; and

(G) For those units that apply activated carbon injection for dioxin/furan control, the owner or operator shall submit the average carbon mass feed rate recorded.

(2) The MWC owner or operator shall submit a quarterly report to the commissioner within thirty (30) days following the end of each calendar quarter in which the data were collected. The first quarterly report shall be submitted within thirty (30) days following the end of the calendar quarter in which the initial performance test is conducted. Each quarterly report shall include the following:

(A) All emissions data recorded pursuant to this section during the calendar quarter;

(B) Each calendar date during the calendar quarter reported when any of the average emission concentrations, percent reductions, operating parameters or opacity levels recorded exceeded the applicable limit identified in this section; the reasons the limit was exceeded and a description of the corrective actions taken;

(C) Identification of the calendar dates when average carbon mass feed rates were less than either of the hourly carbon feed rates estimated during mercury or dioxin/furan emissions tests, and the rates recorded. The reasons for such feed rates and a description of the corrective actions taken shall also be reported; and

(D) The data and results of any CEM quality assurance testing conducted pursuant to this section.

(3) Except as set forth in subparagraph (D) of this subdivision, the MWC owner or operator shall submit an annual report to the commissioner no later than January 30 of each year following the calendar year in which the data were collected. The first annual report shall be submitted no later than January 30 of the first year following the end of the calendar year in which the initial performance test is conducted. Each annual report shall include the following:

(A) A summary of data collected for each pollutant regulated under this section and all applicable parameters, as follows:

(i) A list of the particulate matter, opacity, cadmium, lead, mercury, dioxin/furan, hydrogen chloride, and fugitive ash emission levels achieved during all initial and annual performance tests. Dioxin/furan emissions shall be reported as required in subparagraph (B) of subdivision (1) of this subsection,

(ii) A list of the highest emission level recorded for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, and particulate matter control device inlet temperature based on the data recorded for 24-hour daily geometric averages, 24-hour daily arithmetic averages, 4-hour block averages or 4-hour block arithmetic averages, as applicable, for the aforementioned pollutants,

(iii) The highest six-minute average opacity level measured,

(iv) The relationship between carbon dioxide and oxygen, if such relationship is reestablished, including test results, identification of the units tested and the date and time of each test run, and, as necessary, a schedule for making the appropriate modifications to the CEM system to incorporate the equivalent % CO_2 correction factor,

(v) The total number of days that the minimum number of hours of data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load and particulate matter control device temperature data were not obtained, and

(vi) The total number of hours that data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, and particulate matter control device temperature were excluded from the calculation of average emission concentrations or parameters;

(B) The information required by subparagraphs (A)(i), (A)(ii) and (A)(iii) of this subdivision for the previous calendar year;

(C) The data summaries required by subparagraphs (A) and (B) of this subdivision shall highlight any emission or parameter levels that did not achieve the emission or parameter limits specified under this section; and

(D) If a MWC owner or operator is subject to more stringent annual reporting requirements pursuant to a permit issued under Title V of the Clean Air Act and section 22a-174-33 of the Regulations of Connecticut State Agencies, those requirements shall supersede the requirements of this subsection.

(4) At least ninety (90) days before any MWC owner or operator plans to conduct any performance test required under this subsection, such owner or operator shall submit a performance test plan for review and written approval of the commissioner. Such plan shall contain, at a minimum, the following information:

(A) sampling locations;

(B) test methods;

(C) sampling protocols;

(D) sample analysis procedures; and

(E) any other information required by the commissioner.

(5) The MWC owner or operator shall provide written notification to the commissioner three (3) business days prior to conducting any performance test required under this subsection.

(6) The MWC owner or operator shall provide written notification to the commissioner within seventy-two (72) hours of the time at which such owner or operator receives information regarding performance test results indicating that any particulate matter, opacity, cadmium, lead, mercury, dioxin/furan, hydrogen chloride or fugitive ash emission levels exceed the applicable pollutant emission limits or standards defined in this section.

(7) Any report required to be submitted to the commissioner by this section must include a certification signed by a responsible corporate officer or a duly authorized representative of such officer, as those terms are defined in subdivision (2) of subsection (b) of section 22a-430-3 of the Regulations of Connecticut State Agencies, and by the individual or individuals responsible for actually preparing such document, each of whom shall examine and be familiar with the information submitted in the document and all attachments thereto, and shall make inquiry of those individuals responsible for obtaining the information to determine that the information is true, accurate, and complete, and each of whom shall certify in writing as follows:

> "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes or, in accordance with section 22a-6 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

(8) The MWC owner or operator shall submit all reports and notifications required by this subsection on forms furnished or prescribed by the commissioner.

(9) The MWC owner or operator shall submit all reports specified under this subsection as a paper copy, with supporting data in either paper or electronic format, postmarked on or before the submittal dates specified in this subsection, and maintain such reports at the premises as a paper copy with any supporting data in the format submitted for a period of five (5) years from the date of submission to the commissioner.

(m) Compliance schedule.

(1) The owner or operator of a MWC for which construction commenced prior to September 20, 1994 shall achieve final compliance with the applicable emission limits specified in subsections (c) and (f) of this section, with the exception of the emission limit of Table 38-1a, no later than December 19, 2000.

(2) The owner or operator of a MWC for which construction commenced prior to September 20, 1994 shall achieve final compliance with emission limit specified in Table 38-1a of

subsection (c) of this section no later than the date thirty-six months following the effective date of this section.

(3) The owner or operator of a MWC for which construction, modification or reconstruction commenced on or after September 20, 1994 and prior to the effective date of this section shall achieve final compliance with the applicable emission limits specified in subsections (c) and (f) of this section, with the exception of emission limit of Table 38-2a, no later than December 19, 2000.

(4) The owner or operator of a MWC for which construction, modification or reconstruction commenced on or after September 20, 1994 and prior to the effective date of this section shall achieve final compliance with the emission limit specified in Table 38-2a of subsection (c) of this section no later than the date thirty-six months following the effective date of this section.

(5) The owner or operator of a MWC for which construction commences on or after the effective date of this section shall achieve compliance with all applicable requirements of this section upon the date of initial operation.

(6) The owner or operator of a MWC subject to this section who is unable to comply with the requirements of this section within the final compliance dates specified in this subsection shall cease operation. Within one year of the effective date of this section such an owner or operator shall either immediately cease operation or, at the discretion of the commissioner, enter into a legally enforceable cease operation agreement with the commissioner that includes a date no later than December 19, 2000 on which operation will cease.

(7) On and after the date one year from the effective date of this section, any MWC that has been operated in full compliance with all requirements of this section for nitrogen oxides shall be exempt from the following provisions of the Regulations of Connecticut State Agencies:

(A) Section 22a-174-22(k) concerning nitrogen oxides emissions testing and monitoring; and

(B) Section 22a-174-22(l) concerning reporting and record keeping for nitrogen oxides.

(8) Any MWC that is operating in full compliance with all requirements of this section for nitrogen oxides, as determined by the commissioner, shall be exempt from the May 31, 1999 deadline contained in Section 22a-174-22, subsection (e), subdivision (2) of the Regulations of Connecticut State Agencies as of the effective date of this section.

Statement of Purpose: This section establishes emission limits to reduce emissions of certain designated air pollutants from municipal waste combustors as well as requirements for operator training and certification, performance testing, compliance monitoring, record keeping and reporting in accordance with section 111(d) and section 129 of the Federal Clean Air Act and regulations issued pursuant to these Clean Air Act sections.

The Connecticut General Assembly

Legislative Regulation Review Committee

Senator George Gunther
Co-Chair

Representative Nancy Beals
Co-Chair

June 23, 1999

RE: 99-046(a)

Arthur Rocque
Commissioner
Department of Environmental Protection
79 Elm Street
Hartford, CT 06105

Dear Commissioner Rocque:

Proposed Regulation
99-046a Department of Environmental Protection **"ABATEMENT OF AIR POLLUTION MUNICIPAL WASTE COMBUSSTORS"** The Regulations of Connecticut State Agencies is amended by adding Section 22a-174-38. (CLJ 1/13/98) (A.G. Approval 6/1/99) Bearing a deadline date of 7/6/99

The above captioned regulation was **Approved in Whole** by the Legislative Regulation Review Committee on 6/22/99.

The enclosed "original" regulation must be filed with the Office of the Secretary of the State within fourteen days of its approval by the Legislative Regulation Review Committee. If for any reason the agency fails to file the regulation in the prescribed time it must notify the Legislative Regulation Review Committee within five days of the missed filing deadline.

Sincerely:

Pamela B. Booth

Pamela B. Booth, Administrator
Legislative Regulation Review Committee

Enclosure (1)

Suite 1800* Legislative Office Building * Hartford, CT 06106-1591 * (860) 240-0580 * fax (860) 240-8833 *lrrc@po.state.ct.us

v copies to: Jane, Rick & Tom T.

Office of Secretary of the State
State of Connecticut
30 Trinity Street, P.O. Box 150470, Hartford, CT 06115-0470

Susan Bysiewicz
Secretary of the State

RECEIVED
JUL 2 1999
Dept. of Environmental Protection
Office of the Commissioner

June 30, 1999

Hon. Arthur Rocque, Jr.
Commissioner of Environmental Protection
79 Elm Street
Hartford, CT 06105

Dear Commissioner Rocque:

This is to acknowledge receipt of two certified copies of the following regulation issued by your department concerning:

Municipal Waste Combustors.

Said regulation was received and filed in this office on June 28, 1999. The effective date of this regulation is June 28, 1999.

Very truly yours,

Peter J. Bartucca
Manager, Records & Legislative Services

PJB:ms
File

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State Cpitol Office (860) 509-6200 *fax 509-6209*
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