



**STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT**

**NEW SOURCE REVIEW PERMIT  
TO CONSTRUCT AND OPERATE  
A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator:	Connecticut Resources Recovery Authority
Address:	100 Constitution Plaza, 6 <sup>th</sup> Floor Hartford, Connecticut 06103-1702
Equipment Location:	Reserve Road, Gate 20, Hartford
Equipment Description:	CE Power Systems Model VU-40 Waterwall Municipal Waste Combustor No. 12 with Spreader Stoker and Traveling Grate

Town/Permit Numbers:	075-0045
Premises Number:	158
Prior Permit Issue Dates:	April 18, 1985 (Permit to Construct) July 12, 1988 (Temporary Permit to Operate) August 27, 1993 (Permit to Operate)
Minor Modification Issue Date:	4/25/07
Expiration Date:	None

*for* Anne McCarthy  
Gina McCarthy  
Commissioner

April 25, 2007  
Date

I CERTIFY THAT THIS IS A TRUE COPY OF THE ORIGINAL

Sharon Renee Johnson

**ORIGINAL**

PERMIT FOR MUNICIPAL WASTE COMBUSTOR

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION  
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PART I. OPERATIONAL CONDITIONS

A. Operational Limits

1. Municipal Waste Combustor (MWC)

a. Allowable Fuels/Materials:

i. Refuse Derived Fuel (RDF). RDF shall consist only of Municipal Solid Waste (MSW) as defined and restricted under CGS 22a-207 et seq. and any applicable Bureau of Materials Management and Compliance Assurance permit. RDF shall not consist, in part, or in whole, of any of the following: commercial hazardous waste, industrial hazardous waste, biomedical waste, "beryllium containing waste" as defined by 40 CFR 61 Subpart C.

ii. Bituminous Coal

iii. Natural Gas

iv. Special Waste upon prior authorization by the commissioner.

b. Maximum Facility RDF Combustion Rate: 739,855 tons per calendar year.

c. When RDF, bituminous coal and natural gas are combusted simultaneously in this MWC, at no time shall the coal or natural gas contribution to the total BTU input exceed 249.9 MMBTU/hr.

d. Maximum Unit Load (Steam Production): In no event shall the MWC unit load exceed 254,100 pounds per hour, based on a 4-hour block average.

e. The Permittee shall comply with the operating practices for MWC unit load and particulate matter control device temperature as set forth in RCSA §22a-174-38(g).

f. This MWC shall be capable of maintaining a minimum combustion gas temperature of 1500°F after secondary air injections for at least one second.

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Premises No.: 0158

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**PART I. OPERATIONAL CONDITIONS, continued**

**B. Design Specifications**

1. Municipal Waste Combustor

- a. Design RDF Firing Rate: 28.15 tons per hour based on a design higher heating value of 5785 BTU/lb
- b. Design RDF Heat Input: 326 MMBTU per hour
- c. Design Coal Firing Rate: 9.85 tons per hour based on a design heating value of 12,690 BTU/lb
- d. Design Coal Heat Input: 249.9 MMBTU per hour
- e. Design Unit Load (Steam Production): 231,000 pounds per hour
- f. Steam Temperature at Superheater Outlet: 825°F
- g. Steam Pressure at Superheater Outlet: 880 psig

2. Auxiliary Burner System

- a. Burner Manufacturer/Model No: CE Series 80 IFM
- b. Fuel Type: Natural Gas
- c. Number of Burners: four
- d. Maximum Heat Input: 40 MMBTU/hr (10 MMBTU/hr each burner)

**C. Stack Parameters**

- 1. Minimum Stack Height: 218 ft above grade
- 2. Minimum Exhaust Gas Flow Rate at MRC: 70,000 acfm
- 3. Typical Stack Exit Temperature, Range: 150-210°F
- 4. Minimum Distance from Stack to Property Line: 500 ft

**PART II. CONTROL EQUIPMENT REQUIREMENTS (Applicable if -X- checked)**

*(See Appendix E for Design Specifications)*

- |  |  |
|--|--|
| <input type="checkbox"/> None                                  | <input checked="" type="checkbox"/> SNCR System  |
| <input checked="" type="checkbox"/> Fabric Filter (FF)         | <input type="checkbox"/> Carbon Injection System |
| <input checked="" type="checkbox"/> Spray Dryer Absorber (SDA) | <input type="checkbox"/> Other:                  |

- A.** The minimum number of compartments of the fabric filter to be in service at any point in time is 8.

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**PART II. CONTROL EQUIPMENT REQUIREMENTS, continued**

- B.** The Permittee shall properly maintain and operate the fabric filter (FF), the spray dryer absorber (SDA), and the selective non-catalytic reduction (SNCR) system at all times in accordance with the requirements of RCSA §22a-174-7.
- C.** In the event of a malfunction of the pollution control systems, which results in an exceedence of an applicable emission limit, the Permittee shall not charge any RDF or coal into this MWC until after the air pollution control equipment has been put back on-line.

**PART III. CONTINUOUS MONITORING REQUIREMENTS**

*(See Appendix A for General Requirements)*

Continuous emission monitoring (CEM)/continuous parameter monitoring shall be required for the following pollutant/operational parameters; and enforced on the following basis:

**Summary of RCSA §22a-174-38 Continuous Monitoring Requirements**

<u>Pollutant/ Operational Parameter</u>	<u>Averaging Times</u>	<u>Emission Limit</u>	<u>Units</u>
<input checked="" type="checkbox"/> Opacity	6-minute arithmetic average	10%	
<input checked="" type="checkbox"/> SO <sub>2</sub>	24-hour geometric average	29 <sup>1</sup>	ppmvd @7% O <sub>2</sub>
<input checked="" type="checkbox"/> NO <sub>x</sub>	24-hour daily average	146	ppmvd @7% O <sub>2</sub>
<input checked="" type="checkbox"/> CO	24-hour daily average	200	ppmvd @7% O <sub>2</sub>
<input checked="" type="checkbox"/> O <sub>2</sub>	1-hour		
<input checked="" type="checkbox"/> Unit Load	4-hour block average		pounds/hour
<input checked="" type="checkbox"/> FF Inlet Temp.	4-hour block average		°C or °F
<input checked="" type="checkbox"/> Furnace Temp.	4-hour block average		°F

<sup>1</sup> Or achieve 75% reduction by weight or volume, whichever is less stringent

- A.** The Permittee shall operate CEM systems to continuously monitor and record opacity, sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and oxygen (O<sub>2</sub>).
- B.** The Permittee shall operate a steam flow meter to continuously monitor and record the MWC unit load (steam production). Averaging time is a 4-hour block average.

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**PART III. CONTINUOUS MONITORING REQUIREMENTS, continued**

- C. The Permittee shall continuously monitor and record the fabric filter inlet temperature. Averaging time is a 4-hour block average.
- D. The Permittee shall continuously monitor and record the furnace temperature as measured in the boiler bank area. Averaging time is a 4-hour block average.
- E. The Permittee shall continuously monitor and record total combined overfire and underfire air, FF/SDA system differential pressure, SDA lime slurry flow rate and SNCR reagent injection rate.
- F. The Permittee shall review all recorded CEM data daily and shall notify the commissioner in writing, on forms prescribed by the commissioner, of any deviation from an emissions limitation, and shall identify the cause or likely cause of such deviation, all corrective actions and preventive measures taken with respect thereto, and the dates of such actions and measures as follows: (1) For any hazardous air pollutant, no later than 24 hours after such deviation commenced; and (2) For any other regulated air pollutant or parameter, no later than ten days after such deviation commenced. [RCSA §22a-174-33(p)(1)]
- G. The Permittee shall ensure that the CEM systems meet all applicable performance specifications and quality assurance requirements of RCSA §22a-174-38(j) and RCSA §22a-174-4.
- H. The Permittee shall use redundant thermocouples for each temperature measurement required by this permit. Defective thermocouples shall be replaced as soon as practicable. The fabric filter thermocouple signal transmitter shall be calibrated annually.
- I. The Permittee shall report all CEM data to the commissioner on a quarterly basis using a one-hour average. Opacity shall be reported using a six-minute arithmetic average.

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PART IV. ADDITIONAL MONITORING, RECORD KEEPING AND  
REPORTING REQUIREMENTS

A. Monitoring Requirements

1. The Permittee shall determine the calendar year quantity of RDF by summing the scale house weight data for the calendar year minus the estimated tipping floor inventory on the last day of the year, less the scale house weight data for separated pre- and post-combustion scrap metal, oversized MSW, bulky waste and rejected wastes.
2. The Permittee shall use a non-resettable totalizing fuel meter to continuously monitor the weight of coal combusted in the MWC. Coal usage shall be recorded on an hourly basis.
3. The Permittee shall use a common non-resettable totalizing fuel meter to continuously monitor total natural gas combusted in the three MWCs. Total natural gas usage shall be recorded on an hourly basis.
4. The Permittee shall determine the calendar year quantity of Special Waste for the facility by summing the truck scale house weight data.

B. Record Keeping Requirements

1. The Permittee shall make and keep records summarizing the calendar year quantity of RDF and Special Waste combusted for the facility.
2. The Permittee shall make and keep records of hourly amounts of coal, and natural gas combusted for this MWC. The Permittee shall total these amounts to create records of fuel combusted for the calendar year. Calendar year natural gas usage for each MWC shall be allocated based on records of the calendar year operating hours for each MWC.
3. The Permittee shall make and keep records of daily operating hours of this MWC. The Permittee shall total these records to create records of operating hours for the calendar year. Records of operating hours shall be made to distinguish periods of start-up and shutdown of this MWC.

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**PART IV. ADDITIONAL MONITORING, RECORD KEEPING AND  
REPORTING REQUIREMENTS, continued**

4. The Permittee shall calculate and record monthly and consecutive 12 month emissions for SO<sub>2</sub>, CO and NO<sub>x</sub> in units of tons/month and tons/year for the preceding month. The consecutive 12 month emissions shall be determined by adding the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of each month.
5. The Permittee shall calculate and record calendar year emissions for PM, VOC/HC, Pb and ammonia in units of tons/year. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of each calendar year.
6. The Permittee shall make and keep records of all required performance tests.
7. The Permittee shall make and keep records of the date, the time of the shift, the name of the operator of that shift and the operator's certification. [RCSA §22a-174-38(h)(1)]
8. The Permittee shall make and keep records of the name of each person that has reviewed the operating manual, the date of initial review and the date of the annual review. [RCSA §22a-174-38(h)(5)]
9. The Permittee shall maintain records of information specified in RCSA §22a-174-38(k).
10. The Permittee shall make and keep records of the dates on which the condition of the boiler tubes is evaluated based on boiler draft and pressure drops, the name of the inspector and the evaluation of the condition of the boiler tubes.
11. The Permittee shall make and keep records of the dates on which cleaning of the boiler tube heat transfer surfaces is performed.
12. The Permittee shall make and keep records of the dates and time periods of startup, shutdown and malfunction.

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13. All records shall indicate the date and time of occurrence of the recorded event.
14. The Permittee shall keep all records required by this permit on premises for a period of no less than five years and shall make such records available to the commissioner upon request.

C. Reporting Requirements

1. The Permittee shall submit reports to the commissioner of all required performance tests.
2. The Permittee shall submit a quarterly report to the commissioner within 30 days following the end of each calendar quarter. Each quarterly report shall include the information as set forth in RCSA §22a-174-38(1)(2).
3. The Permittee 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. Each annual report shall include the information as set forth in RCSA §22a-174-38(1)(3).
4. The Permittee shall include in the annual report required by RCSA §22a-174-38(1)(3) the following information:
  - a. The calendar year quantity of RDF and Special Waste combusted for the facility.
  - b. The hourly amounts of coal, and natural gas combusted for each MWC.
  - c. The calendar year amounts of coal, and natural gas combusted for each MWC.
  - d. The calendar year operating hours for each MWC.
  - e. The monthly and consecutive 12 month emissions for SO<sub>2</sub>, CO and NO<sub>x</sub> in units of tons/month and tons/year for each MWC.
  - f. The calendar year emissions for PM, VOC/HC, Pb and ammonia in units of tons/year for each MWC.
  - g. The dates on which cleaning of the boiler tube heat transfer surfaces is performed for each MWC.
  - h. The dates and time periods of startup, shutdown and malfunction for each MWC.

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REPORTING REQUIREMENTS, continued**

5. The Permittee shall provide written notification to the commissioner within 72 hours of the time at which the Permittee 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 RCSA §22a-174-38. [RCSA §22a-174-38(1)(6)]

**PART V. OPERATION AND MAINTENANCE REQUIREMENTS**

- A. The Permittee shall not cause or allow the plant to be operated at any time unless a certified chief operator or shift operator is physically present at the plant. [RCSA §22a-174-38(h)(1)] Operators shall be certified by the commissioner under RCSA §22a-231-1. [RCSA §22a-174-38(h)(2)] All chief operators and shift operators must satisfactorily complete an operator training course conducted by the commissioner as set forth in RCSA §22a-174-38(h)(3). The equipment operators shall be trained in the operation and maintenance of both the fuel burning and pollution control equipment.
- B. The Permittee shall maintain an Operating and Maintenance (O&M) Manual that shall be updated on a yearly basis. [RCSA §22a-174-38(h)(4)] The Permittee shall submit any revision to this manual which conflicts or may conflict with any condition of this permit to the commissioner for review and shall receive the commissioner's written approval prior to incorporating such revision in the O&M Manual.
- C. The Permittee shall establish a training program to review the O&M Manual with each person who has responsibilities affecting the operation of the plant. The training program shall be repeated on an annual basis for each person. [RCSA §22a-174-38(h)(5)]
- D. The Permittee shall clean the boiler tubes at least twice per year. Additionally, the facility shall clean the boiler tubes when it is determined that the air flow through the boiler has become restricted due to ash build up on the boiler tubes. This determination will be based on a regular evaluation of the boiler draft and pressure drops. Cleaning of the boiler tubes may be done via online water washing.

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**PART VI. ALLOWABLE EMISSION LIMITS**

The Permittee shall not exceed the emission limits stated herein at any time.

**TABLE 1  
Summary of Mass Emission Limits**

<u>Criteria Pollutants</u>	<u>lb/ MMBTU</u>	<u>ppmvd @12% CO<sub>2</sub></u>	<u>tpy</u>
PM			51.3
SO <sub>2</sub>	<sup>1</sup>		457.0
NOx			420.0
CO			389.0
VOC/HC		70 <sup>2</sup>	130.0
Lead (Pb)			0.48
<u>Non-Criteria Pollutants</u>		<u>ppmvd @7% O<sub>2</sub></u>	
Sulfuric Acid	0.02		
Ammonia		20	

<sup>1</sup> The SO<sub>2</sub> emission limit when combusting only coal is 0.55 lb/MMBTU based on a 24-hour block average. The SO<sub>2</sub> emission limit when combusting only RDF is 0.32 lb/MMBTU based on a 24-hour block average. When a mixture of coal and RDF is combusted, the SO<sub>2</sub> emission limit shall be determined using the following equation:  $[(0.55 * C) + (0.32 * R)]$  lb/MMBTU based on a 24-hour block average. Where C is the fraction of BTU input from coal and R is the fraction of BTU input from RDF over the 24-hour period.

<sup>2</sup> Expressed as methane

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**PART VI. ALLOWABLE EMISSION LIMITS, continued**

**TABLE 2  
Summary of RCSA §22a-174-38 Limits**

	mg/dscm @7% O <sub>2</sub>	ppmvd @7% O <sub>2</sub>
PM	27	
SO <sub>2</sub>		29 <sup>1</sup>
NO <sub>x</sub>		146 <sup>2</sup>
CO		200 <sup>3</sup>
HCl		29 <sup>4</sup>
Cadmium (Cd)	0.040	
Lead (Pb)	0.44	
Mercury (Hg)	0.028 <sup>5</sup>	
Dioxin/Furans	0.000030	

<sup>1</sup> Based on a 24-hour geometric average or 75% reduction by weight or volume, whichever is less stringent.

<sup>2</sup> Based on a 24-hour daily average. Compliance may be achieved through the use of the NO<sub>x</sub> emissions trading program as described in RCSA §22a-174-38(d) or utilization of NO<sub>x</sub> controls.

<sup>3</sup> Based on a 24-hour daily average.

<sup>4</sup> Or achieve 95% reduction by weight or volume, whichever is less stringent.

<sup>5</sup> Or achieve 85% reduction by weight, whichever is less stringent.

The emission limits set forth in RCSA §22a-174-38(c), as specified in Table 2 above, shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).

Demonstration of compliance with the above emission limits shall be determined by calculating the emission rates from the following sources:

1. PM, hydrogen chloride, cadmium, lead, mercury, dioxin/furan, ammonia: Annual Performance Test. Reference Part VII.
2. SO<sub>2</sub>, NO<sub>x</sub>, CO: Continuous Emission Monitoring. Reference Part III.
3. VOC, H<sub>2</sub>SO<sub>4</sub>, All Other HAPs: Initial Performance Test.

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**PART VI. ALLOWABLE EMISSION LIMITS, continued**

**A. Particulate Matter (PM):**

1. The Permittee shall not cause or allow emission of particulate matter in excess of 27 milligrams per dry standard cubic meter of exhaust gas corrected to seven percent oxygen. [RCSA §22a-174-38(c)(1)] Compliance with this emission limit shall be determined based on an annual performance test, performed as set forth in RCSA §22a-174-38(i). [RCSA §22a-174-38(c)(3)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).
2. This MWC shall not emit greater than 51.3 tons of particulate matter per calendar year.

- B. Opacity:** The Permittee shall not cause or allow visible emissions in excess of 10% opacity. [RCSA §22a-174-38(c)(1)] Continuous compliance with the opacity emission limit shall be based on a six-minute arithmetic average. [RCSA §22a-174-38(c)(5)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).

**C. Sulfur Dioxide (SO<sub>2</sub>):**

1. The Permittee shall not cause or allow emission of sulfur dioxide in excess of 29 ppmvd corrected to seven percent oxygen, or achieve 75% reduction by weight or volume measured as required by RCSA §22a-174-38(c)(7), whichever is less stringent. [RCSA §22a-174-38(c)(1)] Continuous compliance with the sulfur dioxide limit shall be based on a 24-hour 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. [RCSA §22a-174-38(c)(4)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).

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**PART VI. ALLOWABLE EMISSION LIMITS, continued**

2. The SO<sub>2</sub> emission limit when combusting only coal is 0.55 lb/MMBTU based on a 24-hour block average. The SO<sub>2</sub> emission limit when combusting only RDF is 0.32 lb/MMBTU based on a 24-hour block average. When a mixture of coal and RDF is combusted, the SO<sub>2</sub> emission limit shall be determined using the following equation:  $[(0.55 * C) + (0.32 * R)]$  lb/MMBTU based on a 24-hour block average. Where C is the fraction of BTU input from coal and R is the fraction of BTU input from RDF over the 24-hour period.
3. This MWC shall not emit greater than 457.0 tons of sulfur dioxide over any 12 consecutive months.

**D. Nitrogen Oxides (NOx):**

1. The Permittee shall not cause or allow emission of nitrogen oxides in excess of 146 ppmvd corrected to seven percent oxygen. [RCSA §22a-174-38(c)(8)] Continuous compliance with the nitrogen oxides emission limit shall be based on a 24-hour daily average. [RCSA §22a-174-38(c)(9)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11). Emissions trading in accordance with RCSA §22a-174-38(d) may be used to comply with this limit.
2. This MWC shall not emit greater than 420.0 tons of nitrogen oxides over any 12 consecutive months. [RCSA §22a-174-22(e)(2)(4)]

**E. Carbon Monoxide (CO):**

1. The Permittee shall not cause or allow emission of carbon monoxide in excess of 200 ppmvd corrected to seven percent oxygen. Continuous compliance with the carbon monoxide emission limit shall be based on a 24-hour daily average. [RCSA §22a-174-38(c)(10)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).
2. This MWC shall not emit greater than 389.0 tons of carbon monoxide over any 12 consecutive months.

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PART VI. ALLOWABLE EMISSION LIMITS, continued

F. Volatile Organic Compounds (VOC) and Hydrocarbons (HC):

1. The Permittee shall not cause or allow emission of greater than 70 ppmvd of volatile organic compounds (expressed as methane) corrected to 12% carbon dioxide.
2. This MWC shall not emit greater than 130.0 tons of hydrocarbons per calendar year.

G. Hydrogen Chloride (HCl): The Permittee shall not cause or allow emission of hydrogen chloride in excess of 29 ppmvd corrected to seven percent oxygen, or achieve 95% reduction by weight or volume measured as required by RCSA §22a-174-38(c)(7), whichever is less stringent. [RCSA §22a-174-38(c)(1)] Compliance with this emission limit shall be determined based on an annual performance test, performed as set forth in RCSA §22a-174-38(i). [RCSA §22a-174-38(c)(3)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).

H. Cadmium (Cd): The Permittee shall not cause or allow emission of cadmium in excess of 0.040 milligrams per dry standard cubic meter of exhaust gas corrected to seven percent oxygen. [RCSA §22a-174-38(c)(1)] Compliance with this emission limit shall be determined based on an annual performance test, performed as set forth in RCSA §22a-174-38(i). [RCSA §22a-174-38(c)(3)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).

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Firm Name: Connecticut Resources Recovery Authority, Mid-Connecticut Facility  
Equipment Location: Reserve Road, Hartford  
Equipment Description: CE Power Systems Model VU-40 Waterwall Municipal  
Waste Combustor No. 12 with Spreader Stoker and Traveling Grate

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Town No.: 075

Premises No.: 0158

Permit No.: 0045

Stack No.: 101

ORIGINAL

**PERMIT FOR MUNICIPAL WASTE COMBUSTOR**

**STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT**

**PART VI. ALLOWABLE EMISSION LIMITS, continued**

**I. Lead (Pb):**

1. The Permittee shall not cause or allow emission of lead in excess of 0.44 milligrams per dry standard cubic meter of exhaust gas corrected to seven percent oxygen. [RCSA §22a-174-38(c)(1)] Compliance with this emission limit shall be determined based on an annual performance test, performed as set forth in RCSA §22a-174-38(i). [RCSA §22a-174-38(c)(3)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).
2. This MWC shall not emit greater than 0.48 tons of lead per calendar year.

- J. Mercury (Hg):** The Permittee shall not cause or allow emission of mercury in excess of 0.028 milligrams per dry standard cubic meter of exhaust gas corrected to seven percent oxygen, or achieve 85% reduction by weight measured as required by RCSA §22a-174-38(c)(7), whichever is less stringent. [RCSA §22a-174-38(c)(1)] Compliance with this emission limit shall be determined based on an annual performance test, performed as set forth in RCSA §22a-174-38(i). [RCSA §22a-174-38(c)(3)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).

**K. Dioxins and Furans:**

1. The Permittee shall not cause or allow emission of dioxins and furans in excess of 30 nanograms per dry standard cubic meter of exhaust gas total mass corrected to seven percent oxygen. [RCSA §22a-174-38(c)(1)] Compliance with this emission limit shall be determined based on an annual performance test, performed as set forth in RCSA §22a-174-38(i). [RCSA §22a-174-38(c)(3)] The emission limits set forth in RCSA §22a-174-38(c) shall apply at all times except during periods of startup, shutdown, or malfunction as set forth in RCSA §22a-174-38(c)(11).
2. The Permittee shall not cause or allow emission of greater than  $5.04 \times 10^{-7}$  pounds of dioxin and furan toxic equivalents per hour. [RCSA §22a-174-1(29)]

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**PART VI. ALLOWABLE EMISSION LIMITS, continued**

- L. Sulfuric Acid: The Permittee shall not cause or allow emission of greater than 0.02 pounds of sulfuric acid per MMBTU of heat input.
- M. Ammonia: The Permittee shall not cause or allow emission of ammonia in excess of 20 ppmvd corrected to seven percent oxygen. 40 CFR Part 60, Appendix A, Reference Method 26A or other method approved by the commissioner shall be used for determining compliance with the ammonia emission limit. The compliance determination for ammonia shall be based on an arithmetic average determined using all data generated in three test runs. The minimum sample time shall be one hour per each test run.
- N. State Designated Hazardous Air Pollutants: The Permittee shall not cause or allow an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant listed in RCSA §22a-174-29.

**PART VII. STACK EMISSION TEST REQUIREMENTS**

*(See Appendix B for General Requirements)*

- A. The Permittee shall conduct an annual performance test for this MWC for dioxin/furan, particulate matter, hydrogen chloride, cadmium, lead, mercury and fugitive ash as set forth in RCSA §22a-174-38(i). The annual performance test for dioxin/furan shall be conducted as set forth in RCSA §22a-174-38(i)(3). The Permittee shall conduct annual performance testing for ammonia using EPA Method 26A or other method approved by the commissioner. All performance tests shall be conducted under representative full load operating conditions.
- B. The Permittee shall submit the Intent-to-Test (ITT) package to the Stack Test Group of the Bureau of Air Management at least 90 days before the proposed source test date. The Permittee shall provide written notification to the commissioner three business days prior to conducting any performance test. The Permittee shall submit an acceptable test report to the commissioner within 60 days of the completion of the performance test.
- C. The Permittee shall comply with all applicable notification, testing, and record keeping provisions of RCSA §22a-174-38.

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**PART VII. STACK EMISSION TEST REQUIREMENTS, continued**

D. Pursuant to RCSA §§22a-174-5(e) and 22a-174-29(e), the commissioner may require the Permittee to conduct additional performance testing of any pollutant, possibly on an annual basis, based on CEM data, emission test results, and any other information that the commissioner deems appropriate.

**PART VIII. PREMISES REQUIREMENTS**

- A. (State Enforceable Only) The Permittee shall comply with the state odor regulations, as set forth in RCSA §22a-174-23.
- B. (State Enforceable Only) The Permittee shall comply with the state noise control regulations, as set forth in RCSA §§22a-69-1 through 22a-69-7.4.
- C. The Permittee shall institute and comply with the following conditions at all times:
  - 1. Sufficient wind-sheltered storage capacity for refuse, residual particulates and bottom ash on site and provision for landfill disposal of same must be provided for, in the event of strike, malfunction of air pollution control equipment, or other interruption.
  - 2. Vehicular traffic areas shall be paved at the plant site.
  - 3. Transfer, storage and transportation at and from the plant site, of materials collected from the furnace grates and the air pollution control equipment shall be transferred in a covered container or other method equally effective in preventing the material from becoming airborne during storage and transfer.
  - 4. The Permittee shall implement a clean up program on the plant site whereby at least once per day any refuse, RDF or other materials, which may become airborne will be collected.
  - 5. The Permittee shall not allow the public to have uncontrolled access to any portion of this premises.

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**PART VIII. PREMISES REQUIREMENTS, continued**

- D. Except during periods of maintenance and repair of ash conveying systems, the visible emissions to the atmosphere from the conveyance or transfer of combustion ash shall be limited to five percent of the observation period (i.e., nine minutes per three hour period), as set forth in RCSA §22a-174-38(i)(4)(I). During periods of maintenance and repair of the ash conveyance systems all reasonable measures to control emissions from this MWC shall be implemented. [RCSA §22a-174-38(f)]

**PART IX. SPECIAL REQUIREMENTS**

None

**PART X. ADDITIONAL TERMS AND CONDITIONS**

- A. This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- B. Any representative of the DEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
- D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.

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**PART X. ADDITIONAL TERMS AND CONDITIONS, continued**

- E.** Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, 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, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F.** Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.
- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.

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Firm Name: Connecticut Resources Recovery Authority, Mid-Connecticut Facility  
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PERMIT FOR MUNICIPAL WASTE COMBUSTOR

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PART X. ADDITIONAL TERMS AND CONDITIONS, continued

- I. Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

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Appendices attached (Applicable if -X- checked):

- A. Continuous Emission Monitoring Requirements
- B. Stack Emission Test Requirements
- C. New Source Performance Standards
- D. National Emission Standards for Hazardous Air Pollutants
- E. Control Equipment Design Specifications
- F. Residence Time/Temperature Calculation Procedure
- G. Chart: maximum MSW feed rate as a function of the MSW heating value

## APPENDIX A

### Sec. 22a-174-4. Source monitoring, record keeping and reporting.

(a) **Definitions.** For the purposes of this section:

- (1) "Calendar quarter" means a consecutive three (3) month period (nonoverlapping) beginning on January 1, April 1, July 1 or October 1.
- (2) "Coal burning equipment" means fuel burning equipment that combusts coal.
- (3) "Gaseous, liquid or solid fuel burning equipment" means fuel burning equipment that combusts gaseous, liquid or solid fuels.
- (4) "Standby fuel burning equipment" means fuel burning equipment that is used only to provide backup heat or power.

(b) **Opacity continuous emissions monitoring (CEM).**

(1) Except as provided in subdivisions (2) and (3) of this subsection, the owner or operator of the stationary sources listed in subparagraphs (A) through (D) of this subdivision shall install opacity CEM equipment. The owner or operator shall operate and maintain installed opacity CEM equipment in accordance with subsections (c)(3) and (c)(4) of this section and retain the data generated in accordance with subsection (d) of this section:

- (A) Any coal burning equipment;
- (B) Any liquid or solid fuel burning equipment with a maximum rated heat input greater than or equal to two hundred fifty million Btu per hour (250,000,000 Btu/hr);
- (C) Any incinerator with a maximum rated input in excess of two thousand pounds per hour (2,000 lbs/hr); and
- (D) Any process source with particulate matter emissions exceeding twenty-five pounds per hour (25 lbs/hr) after the application of control equipment, when operated at maximum rated capacity.

(2) The provisions of subdivision (1)(A) of this subsection, concerning coal burning equipment, shall not apply to:

- (A) Any space heater installed in any single family home on or before May 1, 1975, provided that such space heater does not combust coal with a sulfur content greater than or equal to three-quarters of one percent (0.75%) by weight (dry basis);

## APPENDIX A, continued

- (B) Any coal burning equipment in a commercial establishment in regular operation on or before May 1, 1975, provided that such coal burning equipment does not combust coal with a sulfur content greater than or equal to three-quarters of one percent (0.75%) by weight (dry basis) and coal consumption is less than seventy-five (75) tons per year; and
  - (C) Any coal burning equipment used primarily for educational or historical demonstrations or exhibits, provided that such coal burning equipment does not combust coal with a sulfur content exceeding one and one-half (1.5%) by weight (dry basis). Such coal burning equipment includes, but is not limited to, blacksmiths' forges, steam locomotives, and steamboats
- (3) The provisions of subdivision (1)(B) of this subsection, concerning gaseous, liquid or solid fuel burning equipment, shall not apply to:
- (A) Any standby fuel burning equipment operating less than one hundred sixty-eight (168) hours in a calendar year. For the purpose of this subparagraph, the term "operating" shall not include emissions testing or operating only to maintain reliability in emergency situations; and
  - (B) Turbines combusting natural gas, liquid fuel or a mixture of liquid fuel and natural gas that comply with the applicable particulate matter and opacity limitations set forth in section 22a-174-18 of the Regulations of Connecticut State Agencies without utilizing pollution control equipment.
- (4) The Commissioner may, in writing, request written documentation from the owner or operator of equipment listed in subdivisions (2) or (3) of this subsection to ascertain the applicability of subdivisions (2) or (3) of this subsection. An owner or operator shall deliver such documentation to the commissioner within thirty (30) days of receipt of such a written request.
- (5) An owner or operator that claims subsection (b)(1) of this section is not applicable by virtue of compliance with subsection (b)(2) or (b)(3) of this section shall, upon notice from the commissioner, install, operate and maintain opacity CEM equipment according to this section, and comply with subsections (c) and (d) of this section, if the commissioner finds:
- (A) Repeated noncompliance with section 22a-174-18 of the Regulations of Connecticut State Agencies has occurred;
  - (B) Noncompliance with the requirements, limitations or restrictions set forth in subdivisions (2) or (3) of this subsection has occurred;

## APPENDIX A, continued

- (C) Operation of the subject source has interfered with or is likely to interfere with the attainment or maintenance of ambient air quality standards, create a health hazard or create a nuisance; or
- (D) Monitoring equipment is technically feasible, economically feasible and needed to determine compliance with chapter 446c of the Connecticut General Statutes and regulations promulgated thereunder.

(6) The notice provided for in subsection (b)(5) of this section shall be in the form of a permit or order and shall specify requirements for opacity CEM equipment installation and operation including a day by which such installation and operation is to commence.

### (c) **General opacity and gaseous CEM equipment operation and performance.**

(1) If, for a source of air pollution, the commissioner determines that opacity or gaseous CEM equipment is reasonably available, technically feasible, economically feasible and necessary for the commissioner to obtain opacity or emissions data to evaluate compliance with chapter 446c of the Connecticut General Statutes and regulations promulgated thereunder, the commissioner may require, by written notice to the owner or operator of such source, the installation and operation of CEM equipment. Such written notice shall be in the form of a regulation, permit or order and shall include requirements for installation and operation including a day by which such installation and operation is to commence.

(2) If the commissioner determines that CEM equipment is not reasonably available for a source of air pollution, the commissioner may, by written notice, require the owner or operator of such source to comply with an alternative monitoring technique or conduct intermittent stack testing to verify the source is in compliance the chapter 446c of the Connecticut General Statutes and regulation promulgated thereunder. Such written notice shall be in the form of a regulation, permit or order and shall include the requirements for such alternative monitoring or testing including a day by which such alternative monitoring or testing is to commence.

(3) **Monitoring plan.** Unless otherwise specified by permit or order of the commissioner, the owner or operator of any source for which construction commenced on or after the effective date of this amendment to this section who is required to install, operate and maintain opacity CEM equipment pursuant to subsection (b) of this section or gaseous or opacity CEM equipment pursuant to subdivision (1) of this subsection shall submit to the commissioner for approval, at least sixty (60) days before the initiation of the performance specification testing required by subdivision (4) of this subsection, a monitoring plan containing the information specified in subparagraphs (A) through (D) of this subdivision:

- (A) A brief description of the source, including, but not limited to, type of unit or process, type of fuel combusted, type or types of emission control devices, and operation parameters;



## APPENDIX A, continued

- (B) A description of the monitoring equipment design, proposed monitor location and sampling site location. This description should include, but is not limited to, facility schematics and engineering drawings of the monitoring and sample probe locations, data acquisition system specifications, analytical monitoring technique and sampling system design;
  - (C) An explanation of the performance specification testing to be conducted by the owner or operator as required by subdivision (4) of this subsection; and
  - (D) A quality assurance plan including procedures for calibration, calibration drift determination and adjustment, preventative maintenance, data recording, calculation, audits and corrective action for monitoring system breakdowns.
- (4) Performance specifications and quality assurance requirements. The owner or operator of any source required to install, operate and maintain CEM equipment pursuant to this section shall meet the following performance specifications and quality assurance requirements:
- (A) The applicable performance specifications and quality assurance requirements of 40 CFR 60 Appendices B and F, unless the source is subject to 40 CFR 75, in which case the owner or operator shall meet the applicable performance specifications and quality assurance requirements of 40 CFR 75;
  - (B) For opacity CEM equipment, the following quality assurance requirements:
    - (i) Calibration shall be adjusted whenever the daily zero or upscale calibration exceeds plus/minus two percent ( $\pm 2\%$ ) opacity;
    - (ii) Data shall be invalid for calculating data availability in accordance with subdivision (5) of this subsection if the zero or upscale calibration value exceeds either the reference zero or the upscale calibration value recorded during the most recent clear-path calibration by plus/minus two percent ( $\pm 2\%$ ) opacity for five (5) consecutive days or plus/minus five percent ( $\pm 5\%$ ) opacity on any single day. The period of invalid data begins with either the fifth consecutive occurrence of a drift value exceeding plus/minus two percent ( $\pm 2\%$ ) opacity or with the last daily check preceding the single occurrence of a drift value exceeding plus/minus five percent ( $\pm 5\%$ ) opacity. The period of invalid data shall end when a calibration drift check, conducted after corrective action, demonstrates that reliable monitoring data is being generated,
    - (iii) Quality assurance audits shall be conducted during each calendar quarter in which the source operates,

## APPENDIX A, continued

- (iv) The commissioner shall be notified, in writing, no fewer than thirty (30) days prior to the initially proposed quality assurance audit, and
  - (v) Quality assurance audits shall be conducted in accordance with the procedures contained in "Performance Audit Procedures for Opacity Monitors," EPA Document No. 450/4-92/010, dated April 1992. If EPA promulgates quality assurance procedures in 40 CFR 60, Appendix F, quality assurance audits shall be conducted according to such procedures. If either EPA Document No. 450/4-92/010 or subsequently promulgated procedures in 40 CFR 60, Appendix F, as applicable, does not contain audit procedures for the opacity CEM selected by the owner or operator, the owner or operator shall, in writing, propose audit procedures to the commissioner for review and written approval at least thirty (30) days prior to the initial opacity CEM audit; and
- (C) If the results of a quality assurance audit fail to conform to the quality assurance requirements of subparagraph (B) of this subdivision, such opacity CEM data shall be deemed invalid by the commissioner, and the owner or operator will be deemed to have failed the quality assurance audit. Data collected after any failed quality assurance audit shall be invalid for calculating percent data availability in accordance with subdivision (5)(A) of this subsection.
- (5) Data availability.
- (A) The owner or operator of any source required to install, operate and maintain CEM equipment in accordance with this section shall meet the following data availability requirements on an emission limitation-specific basis:
    - (i) While the source is operating, the owner or operator shall operate required CEM equipment pursuant to section 22a-174-7(b) of the Regulations of Connecticut State Agencies, and allowable periods of missing data shall apply only to periods of deliberate shutdown allowed by section 22a-174-7(b) of the Regulations of Connecticut State Agencies, unavoidable system malfunction or as otherwise provided under this subdivision,
    - (ii) Except as provided in subparagraphs (B) and (C) of this subdivision, for opacity emissions, data shall be available for no less than ninety-five (95%) of the total operating hours of the source in any calendar quarter,
    - (iii) Except as provided in subparagraphs (B) and (C) of this subdivision, for air pollutant emissions other than opacity, data shall be available for no less than ninety percent (90%) of the total operating hours of the source in any calendar quarter, and

## APPENDIX A, continued

(iv) Percent data availability shall be calculated using the following equation:

$$\% \text{ Data Availability} = \left( \frac{\text{Unit Operating Time} - \text{Monitoring Downtime}}{\text{Unit Operating Time}} \right) * 100$$

where:

Unit operating time = total hours of source operation at any level during the calendar quarter.

Monitoring downtime = total hours of source operation at any level during the calendar quarter where either no CEM equipment data was collected or the CEM equipment data was invalid. Such periods include, but are not limited to, quality assurance activities such as calibration, preventative maintenance, and calibration drift exceedances or quality assurance audits that result in invalid data.

- (B) The commissioner, in writing, may exempt the owner or operator of a source from the minimum data availability requirements of subparagraphs (A)(ii) and (A)(iv) of this subdivision if such source is equipped with properly operating opacity CEM equipment, and the source is operated less than or equal to five hundred four (504) hours in the calendar quarter.
- (C) The commissioner, in writing, may exempt the owner or operator of a source from the minimum data availability requirements of subparagraphs (A)(iii) and (A)(iv) of this subdivision if such source is equipped with properly operating gaseous CEM equipment, and the source is operated less than or equal to three hundred thirty-six (336) hours in the calendar quarter.
- (D) To obtain an exemption under subparagraphs (B) or (C) of this subdivision, the owner or operator of the source shall submit the following information to the commissioner within thirty (30) days following the last day of the calendar quarter for which the exemption is sought:
- (i) A request for an exemption for a specified calendar quarter,
  - (ii) The actual operating hours of the source during the calendar quarter,
  - (iii) The duration of and nature of the CEM equipment breakdowns, repairs or adjustments made during the calendar quarter, and
  - (iv) The actual data availability achieved during the calendar quarter.

## APPENDIX A, continued

### (d) Record keeping and reporting.

(1) The commissioner may, by written notice, require the owner or operator of any source to create, maintain and submit data, records or reports of monitoring data and other information deemed necessary by the commissioner to evaluate compliance with chapter 446c of the Connecticut General Statutes and regulations promulgated thereunder. Such information shall be recorded, compiled and submitted on forms furnished or prescribed by the commissioner. The written notice shall provide the data by which such data, records or reports shall be submitted to the commissioner.

(2) Any document, data, plan, record or report required to be submitted to the commissioner by this section shall 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 there, 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."

(3) The owner or operator of any source subject to the provisions of chapter 446c of the Connecticut General Statutes and regulated adopted thereunder shall maintain all data, document and reports required by this section in a legible and comprehensible form for at least five (5) years from the date such data, document or report is created.

(4) Each calendar quarter, the owner or operator of any opacity CEM equipment required pursuant to this section shall submit the following information to the commissioner:

- (A) The data obtained through such equipment during the preceding calendar quarter that is required to determine compliance with an emission limitation or standard;
- (B) A summary of such data;
- (C) A copy of the quality assurance audit conducted for that calendar quarter; and

## APPENDIX A, continued

(D) A summary of all corrective actions taken in response to a failed CEM equipment audit.

(5) Submissions made to comply with subdivision (4) of this subsection shall be made no later than thirty (30) days following the end of each calendar quarter.

(e) The commissioner may exempt an owner or operator of a source subject to this section from the requirements of this section as they apply to a particular air pollutant if such owner or operator demonstrates in writing, for the commissioner's written approval, that such source is physically incapable of violating any applicable requirement for such air pollutant set forth in chapter 446c of the Connecticut General Statutes and regulations promulgated thereunder.

(f) Upon written notice in the form of a permit or order to an owner or operator of a source granted an exemption under subsection (e) of this section, such owner or operator shall install, operate and maintain CEM equipment in accordance with such notice if:

(1) The commissioner determines there is repeated noncompliance with section 22a-174-18 of the Regulations of Connecticut State Agencies;

(2) Operation of the subject source has interfered with or is likely to interfere with the attainment or maintenance of ambient air quality standards, create a health hazard or create a nuisance; or

(3) The source has been altered or the operations of the source have changed such that subsection (e) of this section is no longer applicable.

**APPENDIX E**  
**Control Equipment Design Specifications**

Air Pollution Control Equipment (applicable if -X- checked).

The Permittee shall comply with the procedures for malfunction of control equipment as set forth in RCSA §22a-174-7.

**Fabric Filter:**

Make and Model: RAY-JET  
Number of Compartments: 12  
Bags per Compartment: 168  
Air/Cloth Ratio: 2:1  
Bag Material: Teflon Coated Woven Fiberglass or equivalent  
Cleaning Method: Reverse Air  
Pressure Drop Across Each Compartment (inches H<sub>2</sub>O): 2-4  
Pressure Drop Across Fabric Filter (inches H<sub>2</sub>O): 2-7  
Design Removal Efficiency (%): 99% +

**SPRAY DRYER ABSORBER (SDA):**

Make and Model: CE with rotary atomizer  
Control Reagent: Lime and water solution (5-10% lime by weight)  
Reagent Flow Rate Range: 2 - 15 gallons per minute  
Reagent Line Pressure: 20 psig  
Design Removal Efficiency (%): N/A

**SELECTIVE NONCATALYTIC REDUCTION (SNCR) SYSTEM:**

Make and Model: NALCO NOxOUT with  
up to 8 atomizing injectors operating at up to 80 psig  
Control Reagent: NOxOUT A or similar solution containing 50% urea  
Reagent Injection Rate: 0-42 gallons per hour  
Design Removal Efficiency (%): 35

**POWDERED ACTIVATED CARBON INJECTION SYSTEM:**

Make and Model: \_\_\_\_\_  
Control Reagent: \_\_\_\_\_  
Reagent Injection Rate: \_\_\_\_\_  
Design Removal Efficiency (%): \_\_\_\_\_