



Department of
Environmental
Conservation

Environmental
Facilities Corporation

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CREMATORY OPERATOR TRAINING PROGRAM SUBPART 219-4

To be integrated into all NYSDEC approved crematory operators training programs

Prepared and Presented by:

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SECTION 1 - Air Pollution Control Requirements

Overview of Air Pollution Control in New York

Historically, the control of air pollutants released from combustion processes that are integral to our society has focused on the knowledge that soot and particulate emissions are a human health hazard causing damage to the lungs. While combustion processes at large power generating and industrial plants can impact air quality on a regional and national scale, smaller sources such as cremation units can have significant impacts on local air quality. As a result, New York State regulates crematory operations to provide for a reasonable degree of control of air emissions and protection of local air quality. The New York State Department of Environmental Conservation (NYSDEC) is responsible for regulating air emissions from human and animal crematories. The NYSDEC has nine regional offices across the state that monitor these facilities and enforce the emission control requirements.

Regulation of Crematory Operations

Crematories in New York State are regulated by the NYSDEC to ensure that the air emissions from these facilities meet state and federal air pollution control requirements. Regulated pollutants from cremation units include particulates, oxides of nitrogen and carbon monoxide. It is very important for crematory operators to understand the air pollution control requirements and their obligations in operating the cremation unit. Essentially, these requirements consist of obtaining a registration or permit from the NYSDEC and meeting established equipment design and operating requirements. Non-compliance with these requirements can cause local air quality problems and possibly result in fines or other enforcement action by the NYSDEC.

Cremation units are subject to a series of NYSDEC air pollution control regulations in Chapter 6 of the New York Code of Rules and Regulations (6 NYCRR). The first is 6 NYCRR Part 200 of the air regulations that contains essential terms and definitions that are used in many different regulations. 6 NYCRR Part 201 contains the permitting and registration requirements for stationary sources of air pollution like cremation units, as opposed to mobile sources such as automobiles. 6 NYCRR Part 202 covers emissions or stack testing requirements and 6 NYCRR Part 211 contains the general nuisance provision that prohibits emissions of air contaminants to the outdoor atmosphere in either quantity, characteristic or duration that would unreasonably interfere with the comfortable enjoyment of life or property. Finally, 6 NYCRR Subpart Part 219-4 of the incineration regulation establishes the specific emission control and operating requirements for human and animal crematories installed on or after January 1, 1989. Human and animal crematories installed prior to this date are subject to the requirements of 6 NYCRR Subpart 219-5 or 219-6.

Are crematory operators required to receive training and certification?

NYSDEC requires that every crematory must be operated under the on-site supervision of a person certified through *NYSDEC's Crematory Operator Training Program* **and** that all operators be trained on the proper operation and maintenance of the cremation equipment, operating permit requirements and associated stack emissions.

NYSDEC specifically requires that:

- Every crematory, subject to this regulation, must be operated under the on-site direction of a person possessing NYSDEC Crematory Operator Certification
and
- No person may operate a crematory subject to this regulation unless that person possesses a NYSDEC Crematory Operator Certification or is certified in writing by the holder of a NYSDEC Crematory Operator Certification relative to the proper operation and maintenance of the facility's equipment; of the facility's environmental permit conditions AND the impact of the plant's operation on emissions.

Please Note: The New York State Non-for-Profit Corporation Law [Chapter 579 section 1517(j) enacted in 2006] requires **all operators be certified in crematory operations**. The Crematory Regulations added the requirement for Cremation Certification Courses [19 NYCRR Part 204 promulgated under emergency rule making in 2007] to include 6 NYCRR Part 219-4.

The *NYSDEC Crematory Operator Training Program – Subpart 219-4* meets this requirement.

Operator certifications will be issued by NYSDEC after the successful completion of the *NYSDEC's Crematory Operator Training Program*. Certifications must be renewed every five years.

When you are inspected by NYSDEC staff, upon request, you are required to provide Crematory Operator Certificate(s) issued by the NYSDEC.

Crematory Emission Standards

The emission control requirements for cremation units installed prior to January 1, 1989 are regulated under Subpart 219-5. Unless the unit is located in New York City, Nassau County and Westchester County, then they are regulated under Subpart 219-6.

Any unit installed on or after January 1, 1989 is regulated under Subpart 219-4.

6 NYCRR Subpart 219-5 & 219-6: Older Crematories

Emission control requirements for cremation units installed prior to January 1, 1989 are regulated under Subpart 219-5 or 219-6 depending on the county where they are located. This rule also applied to various types of incinerators before new standards were developed by NYSDEC for each major category of waste incineration in the late 1980's. These old crematories must meet particulate emission limits established on a pound per hour sliding scale basis tied to the hourly charging rate. Opacity (smoke) limits are higher (20%) compared to those found in Subpart 219-4.

These requirements should be outlined in the facility's State Facility Permit. SBEAP staff can help you review and confirm that your cremation unit is meeting the appropriate standards.

6 NYCRR Subpart 219-4: Newer Crematories

Emission control requirements for crematories, installed on or after January 1, 1989, are contained in Subpart 219-4 of the NYSDEC air regulations. The following discussion should provide most operators with adequate information and a good understanding of the key requirements of this emission control regulation.

Who does this regulation apply to?

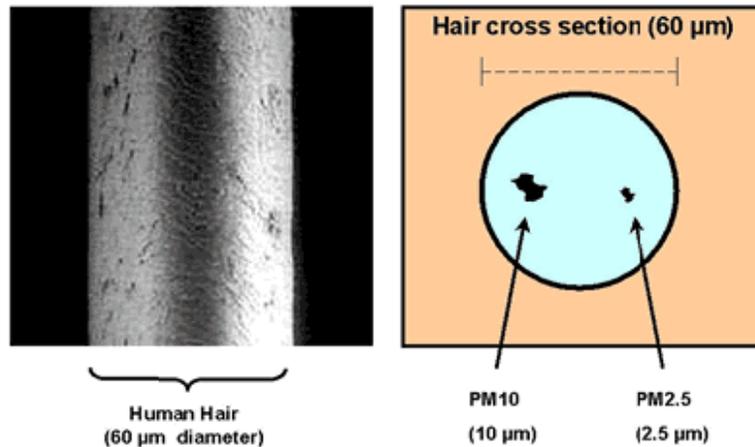
Subpart 219-4 applies to all cremation units that were installed or modified after January 1, 1989 used for the cremation of human and animal bodies, body parts, and for the incineration of associated animal bedding. For the sake of simplicity and clarity, this chapter will focus exclusively on cremation of human bodies.

What Pollutant is regulated?

Particulate matter (PM) is a term used for very small solid and/or liquid particles found in the atmosphere that range in size from 0.005 to 500 micrometers or microns (μm). Particles 2.5 microns or less in diameter are known as "fine" particles; those larger than 2.5 microns are known as "coarse" particles.

The size of the particle mainly determines where in the respiratory tract the particle will come to rest when inhaled. Larger particles are generally filtered in the nose and throat and do not cause problems, but particulate matter smaller than about 10 microns, referred to as PM-10, can settle in the bronchi and lungs. If small enough, some particles will be absorbed in to the blood stream.

HOW SMALL IS PM?



The effects of inhaling particulate matter have been widely studied in humans and include:

- increased respiratory distress such as coughing and difficulty breathing;
- decreased lung function which may cause aggravated asthma and chronic bronchitis;
- cardiovascular problems; and
- premature death in people with heart or lung disease

People most affected by particle pollution exposure are children, older adults, or those with heart or lung diseases. More information about PM pollution and its effect on human health can be found on EPA's website: <http://epa.gov/pm/health.html>.

While many natural phenomena, such as volcano eruptions, forest fires and soil erosion caused by wind, emit particulate matter directly into the atmosphere, particulate emissions generated by the cremation process are the main focus of this regulation.

Particulates are generated during the cremation and combustion processes from incomplete fuel combustion of the charged remains, meaning that the exhaust gases contain some solids and liquids that did not finish burning. Combustion is improved by keeping temperature, air input and burn rate at optimum levels.

Particulate matter emitted through the exhaust flow is measured as a concentration, the weight of particulates emitted in a given volume of air (cubic feet) exhausted. Because particulate matter is so small in size, it cannot be measured in pounds, but instead is measured in grains.



One pound equals 7,000 grains.

The NYSDEC limits particulate emissions to the outdoor atmosphere from any emission source located in a crematory facility to 0.08 grains per dry standard cubic foot of flue gas (corrected to seven percent oxygen). So you can see that the limit is a very low number.

Particulate emissions generated by combustion processes are effectively controlled by proper design and operation of the process equipment resulting in complete combustion of the charged material with minimal emissions.

Does my cremation unit have to meet certain design requirements?

Yes. Controlling the temperature and exhaust gas flow rate within the combustion chamber is the primary means of effectively processing the cremation or charge and achieving low emissions during the processing. The cremation unit must be properly designed to accomplish this. Units that are no longer operating within their design specifications may need to be overhauled and tested to confirm that they are complying with the applicable emission limits.

NYSDEC requires the furnace design be capable of a residence time for combustion gases of at least one second at no less than 1,800°F. The residence time refers to how long the gases take to travel through the final combustion zone. This chamber or zone must be large enough to provide for good mixing of gases, air and heat for thorough combustion. Thorough combustion will reduce the amount of particulates (ash and unburned gases) in the exhaust.

For a multi-chamber cremation unit or retort, these parameters must be met after the combustion gases pass through the primary combustion chamber and then on through a secondary chamber. The temperature of the secondary chamber is maintained and regulated by the afterburner. The secondary chamber is designed for additional combustion to reduce the amount of particulates in the exhaust and

minimize visible emissions. In such units, the primary combustion chamber temperature must be maintained at no less than 1,400°F.

Dual chamber retorts are now the industry standard and are designed to routinely achieve the complete burning of combustion gases leaving the primary chamber.

The second chamber typically provides the space (required to meet the one second residence time) and temperature (provided by the afterburner) to complete the burning of the combustion gases and further reduce particulate emissions and opacity.

Auxiliary burners in the cremation unit must be designed to provide the required combustion chamber temperatures by means of automatic modulating controls.

Are there operating requirements too?

Yes indeed. The cremation unit operator is required to monitor the exhaust stack during processing to determine that exhaust gases/smoke does not exceed visible emissions limits. Exhaust smoke is an indication of improper combustion and excessive particulate emissions. Because particles in the atmosphere absorb and scatter light, they obscure line of sight and reduce visibility. Smaller particles have more exposed surface area which contributes to visibility problems, or haziness. These visible emissions are measured in percent opacity.

Opacity is frequently used to estimate the effect of air pollution on visibility and is defined as *“the degree to which the transmission of light is reduced or the degree to which visibility of a background as viewed through the diameter of a plume is reduced”*.

Simply stated, **opacity** is defined as the degree to which emissions, other than water, reduce the transmission of light and obscure the view of an object in the background.



0% opacity means that 100% of the background is transmitted & you see all of the background through the exhaust.

100% opacity means that 0% of the background is transmitted & you cannot see anything through the exhaust.

Subpart 219-4 states that no operator may cause or allow emissions to the outdoor atmosphere having a six-minute average opacity of 10 percent or greater from any cremation unit.

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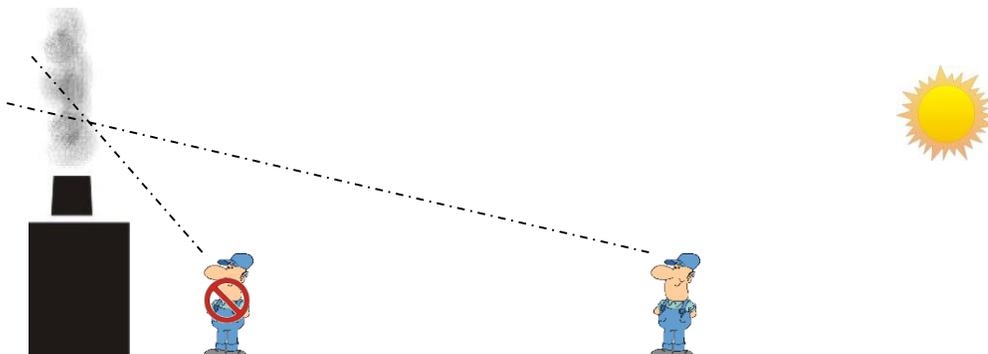
NYSDEC emphasizes that the opacity limit is based on a six-minute average, giving the operator time to make adjustments to the combustion controls if needed to stop excess smoke. If the cremation unit is equipped with an opacity monitoring device, it will certainly be beneficial to the operator in their efforts to consistently comply with this requirement. Many cremation units are equipped with an opacity monitor on the stack, affording the operator the ability to respond quickly to minor upsets during the processing of a difficult cremation unit charge without having to do a visual check outside of the facility. Periodic calibration and maintenance of the opacity monitor should be part of routine inspection and maintenance programs.

There are several technologies that are used to determine opacity by detecting particulates in the exhaust air flow. It is important to know what type of opacity monitor is installed on your cremation unit(s).

The most common opacity monitors are transmissometers that measure the transmission of light through a medium such as dust or smoke. The components mount on either side of the stack or duct. A beam of light is projected from one side through the exhaust flow and detected by a sensor. If the projected light is obstructed, due to the presence of smoke/particulates, the energy of the light will be reduced. Opacity is determined by comparing the energy levels of the detected light to that of the projected light, expressed as percent.

If the cremation unit is not equipped with an opacity monitoring device, visual observations are required to monitor the exhaust for opacity. The operator will need to become more familiar with the methods of checking opacity by eye. In order to get a reliable and consistent opacity reading on stack emissions, the observer should stand with the sun to their back and observe the stack from an angle such that the smoke plume is seen rising against a contrasting background. This will help the observer better estimate how the smoke is obscuring the background and interfering with light transmission.

Look through the smoke as it exhausts from the stack at a distance and with the sun behind you. If you're too close, you will look through more smoke and erroneously read the opacity too high.



The most important operating parameters to monitor in hopes of avoiding and/or responding to excess smoke are opacity and combustion temperature. Typically,

excessive smoke can be attributed to the cremation unit operating at too high a temperature causing the exhaust gases to pass through the combustion zone too quickly and unevenly. This can happen with charges having a high fuel or Btu value (i.e. coated highly polished wooden caskets or deceased human bodies with a high fat content) that tend to burn very hot once ignited.

How do I know if my emissions are meeting standards on a regular basis?

Most modern cremation units are equipped with sophisticated temperature monitoring devices and chart recorders to ensure that good combustion conditions are maintained during the processing cycle. Recording equipment must be operated daily (or whenever the unit is in operation) and show the combustion temperature(s) of the cremation cycle. Operators must keep a file of printouts/chart recordings on site and make sure the printouts/charts are dated.

When you are inspected by NYSDEC staff, upon request, you are required to provide access to chart recordings and monitoring documentation.

Such monitoring is essential for continuous control of combustion conditions and help to ensure that excess emissions are avoided to the maximum extent practicable. In the future, facilities that operate older or outdated units may need to update or retrofit their cremation unit by installing a more reliable or new temperature monitoring device, that will enable continuous monitoring and control of combustion temperature in order to meet the particulate emission limits.

NYSDEC requires that crematory facility operators must install, operate and maintain instruments for continuous monitoring and recording of the following parameters in accordance with manufacturer's instructions:

- (1) Primary combustion chamber exit temperature (1400 °F)
- (2) Secondary (or last) combustion chamber exit temperature (1800 °F)

Operators are required to maintain the design temperature at all times when the cremator unit is operating.

Crematory operators should be very familiar with error messages and process indicator gauges/displays that need to be monitored to confirm proper performance of the equipment. For example, a faulty thermocouple will most likely be indicated by an error message on the control board display panel. Operators should also periodically check to see that the combustion chamber temperature readouts displayed on the gauges /display panel agrees with the reading being recorded by

the chart recorder pen. If not, adjust the chart recorder pen to align with the temperature readout as needed.

Are certain materials/wastes prohibited?

Yes. Subpart 219-4 specifically prohibits the following wastes from being processed in a cremation unit:

- Municipal solid waste
- Medical/Infectious waste (other than pathological waste) in excess of five percent of the total permitted hourly charging rate may not be burned in a cremation unit.
- Radioactive waste
- Hazardous waste

Additional materials should also be avoided as they can damage the cremation unit and emit harmful fumes.

- Fiberglass and Plastic Containers/Caskets
- Narcotics
- Contact the manufacturer for additional materials to avoid.

Will my stack have to be tested to show compliance with standards?

Crematory facilities with cremation units that were installed after January 1989 are required to demonstrate compliance with the particulate emission limit and the design standards either through:

- actual testing of stack gases/emissions or
- providing a stack test report for an identical (same manufacturer and model) cremation unit tested in New York.

Cremation unit manufacturers and vendors should be able to provide such test data to avoid each unit having to be tested individually. This is the typical practice in New York and many other states in the nation.

Part 202-2 of the state air pollution control regulations does however give the NYSDEC authority to require stack testing on a new or existing emission source when there is cause to doubt representative stack test data or where other circumstances warrant testing to determine if emission standards are being met. Such circumstances might include for instance, frequent violations of opacity limits even though the designed retention time and combustion temperatures appear to be in compliance with requirements, or where there is reason to suspect that the particulate emission limits are not being met due to the age of the cremation unit.

In the rare situation where actual stack testing is required by NYSDEC, the crematory owner must provide a test protocol consisting of a detailed description of test methods and equipment, including the configuration of breeching, stack and test port locations. This test protocol must be submitted to the NYSDEC Regional Air

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Pollution Control Engineer for approval at least 30 days prior to stack testing, followed by the stack test results in a report within 60 days after completion of the testing.

All stack tests must be witnessed by a NYSDEC Air Quality representative. Results of any stack test done in the absence of an approved protocol, or which is not witnessed will, in most instances, not be accepted.

NYSDEC Air Registration/Permit Program

The NYSDEC requires that all crematories have either an Air Facility Registration (Registration) or State Facility Permit (Permit) to install and operate a cremation unit. Registrations and Permits help the NYSDEC to ensure that air quality regulations are being properly followed and that the applicant has become familiar with the appropriate requirements. Registrations and permits are issued by each of the nine NYSDEC Regional Offices located around the state.

NYSDEC Regional Office staff administer and enforce the air pollution regulations for specific counties as shown below.

NYSDEC Regional Map

Region 1: Nassau & Suffolk counties

Region 2: Brooklyn, Bronx, Manhattan, Queens & Staten Island counties

Region 3: Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster & Westchester counties

Region 4: Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schoharie & Schenectady counties

Region 5: Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren & Washington counties

Region 6: Herkimer, Jefferson, Lewis, Oneida & St. Lawrence counties

Region 7: Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga & Tompkins counties

Region 8: Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne & Yates counties

Region 9: Allegany, Cattaraugus, Chautauqua, Erie, Niagara & Wyoming counties



Part 201 of the NYSDEC air regulations require facility owners to apply for and obtain a Permit or Registration before installing and operating a new emission source, such

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as a cremation unit. Air Facility Registration applications must be sent to the NYSDEC Regional Air Pollution Control Engineer (RAPCE) while State Facility Permit applications must be submitted to the NYSDEC Regional Permit Administrator. Contact information for each of the Regional Offices can be found in Section 8. Once a Permit or Registration has been issued, the RAPCE must be notified in writing and at least 10 days prior to operation commencement.

Existing facilities operating without a Permit or Registration should submit an application and pursue the necessary approval as soon as possible after becoming aware of this requirement. If an existing facility already has a Permit/Registration and is planning to add or replace a cremation unit, the Permit/Registration will need to be amended to reflect the new equipment.

Crematory facility owners and operators should contact the Small Business Environmental Assistance Program (SBEAP), located at the New York State Environmental Facilities Corporation, for free and confidential help if they need to apply for a registration or permit. In addition to preparing the necessary forms, SBEAP staff will explain the state emission standards for crematories and help you understand how to stay in compliance with these requirements.

If you have a Permit or Registration issued by the NYSDEC, or by a county agency on behalf of the NYSDEC, make sure that you keep it on site and are complying with any conditions of the permit and Subpart 219-4 requirements.

When you are inspected by NYSDEC staff, upon request, you are required to provide a copy of your Permit or Registration.

If you are not sure about your status, call the SBEAP toll-free at 1-800-780-7227 and let us help you determine if you have a permit or registration, or need to apply for one.

The registration application will require, at minimum, the following basic information:

- the manufacturer and model number of the cremator unit(s)
- manufacturer's specifications for the cremation unit to demonstrate that it is designed to meet NYSDEC emission control standards (i.e., temperature and exhaust gas retention time)
- stack information
- the location of the unit within the facility
- a location map
- stack test data, if necessary

Whether you choose to have the SBEAP prepare the application or choose to have a consultant or engineer prepare it for you is your choice. Remember, the SBEAP will do it free of charge. The application forms are available on the NYSDEC

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(www.dec.state.ny.us) and SBEAP (www.nysefc.org, under *Programs*) websites, as well as from the NYSDEC Regional Office.

Annual Regulatory Fees

The NYSDEC requires that facilities with air emission sources pay an annual regulatory fee to cover a portion of the costs of the department's regulatory functions.

NYSDEC charges a fee of \$160.00 for a process air contamination sources having an annual emission rate less than twenty-five tons per year of any one of the following: total particulates, sulfur dioxide, nitrogen dioxide, carbon monoxide, total volatile organic compounds or other specific air contaminants. It would be quite rare for any modern cremation unit to have particulate emissions exceeding twenty five tons per year.

Each cremation unit at a facility is considered an air contamination source, therefore a typical crematory facility will be charged a fee of \$160.00 times the number of cremation units in operation. The NYSDEC typically mails out the annual fee bills during the late summer months for the previous year of operation.

Does the NYSDEC require any reporting on a regular schedule?

Yes, all cremation units must be inspected annually and a report filed with the NYSDEC. Refer to SECTION 2 of the Training Manual.

SECTION 2 - Annual Inspection and Reporting

Annual Inspection

As required by 6 NYCRR Subpart 219-4, each owner or operator of a crematory facility, with cremation unit(s) installed after January 1, 1989, must annually inspect the facility and submit a report to the NYSDEC, certifying that the condition and operation of the cremation unit(s) meet manufacturer's specifications.

Routine inspection and maintenance is essential for the proper performance of any complex machinery. Cremation units must perform consistently under extreme operating conditions in order to process each charge effectively and efficiently while complying with air emission standards. This can only be accomplished with adequate attention to inspection and maintenance of the cremation system controls on a regular schedule. While some of this work may be performed by facility personnel, professional technicians will need to be relied upon for the more complex inspection and repair needs involving specialized training and instrumentation.

Subpart 219-4 specifically requires that:

Each owner or operator of a crematory facility must annually inspect their facility and submit a report to the commissioner, certifying that the condition and operation of the facility meet manufacturer's specifications.

The SBEAP has observed that most crematory equipment instrumentation does not require regular calibration. Rather, the manufacturers typically equip the cremation unit with instrumentation, electronics and mechanisms that do not require periodic calibration or adjustments by field technicians. Visual observations and part replacement is more typically the main focus of the annual inspection of equipment.

The NYSDEC recommends that crematory facility owners develop an inspection and maintenance program. An effective, site-specific program should include input from manufacturers, vendors and industry training professionals. Such a program should comprise of periodic inspection and maintenance of the following equipment and systems at a minimum:

- Burners
- Ignition transformers
- Combustion controls
- Temperature controller
- Spare thermocouple(s) available and date they were replaced last
- Combustion air and draft fan
- Emissions monitoring (i.e. opacity monitor)
- Secondary chamber and cremation (primary) chamber Controls

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- Chart recorder
- Exhaust stack
- Refractory condition

Annual Report Format

Annual reports must be submitted to the Regional Air Pollution Control Engineer at the NYSDEC Regional Office and are due within 30 days of the end of the designated reporting period.

The NYSDEC Division of Air Resources has developed the *Subpart 219-4 Crematory Operation Annual Report Form* for crematory facilities to comply with this requirement. These forms are also provided in Section 9. If you have any questions concerning this form please contact the Small Business Environmental Assistance Program toll-free at 1-800-780-7227, or the appropriate NYSDEC Regional Office.

Other reporting formats will be accepted by the NYSDEC provided that all of the information prescribed on this form is included on any alternate forms or format.

Annual Report Instructions

Section I: General Facility Information

Reporting Period: Enter the beginning and ending dates for the reporting period covered by this report. Facilities operating with a State Facility Permit are assigned a report due date as a permit condition. The reporting period for facilities operating under an Air Facility Registration typically begins the date the registration is effective and ends one year from that date. The report is due within 30 calendar days (for example: a Registration's effective date was 4/10/2006, the reporting period would be from 4/10/2006 through 4/9/2007 and the report due on or before 5/10/2007. Future reports will be due on or before May 10 for subsequent years).

NYSDEC Identification Number: Enter the 10 digit NYSDEC Identification Number assigned to your facility. This number is can be found on the facility's Air Facility Registration or State Facility Permit.

Number of Cremation Units: Enter the total number of cremation units that operated during the reporting period.

Facility Name: Enter the facility's name as printed on the NYSDEC Air Facility Registration or State Facility Permit. Do not use an abbreviated name.

Mailing Address: Enter the complete mailing address for the facility.

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Contact Information: Enter the name, title, telephone number and facsimile number (optional) for the contact person. The contact person should be a person familiar with the day-to-day operations of the cremation unit and the details included in the report. Such persons are typically the facility manager or other knowledgeable individual who a NYSDEC representative may contact for additional information, if necessary.

Responsible Official: A president, vice president, secretary, treasurer, general partner, proprietor, principal executive officer, ranking elected official, or any other person who performs policy or decision making functions and is authorized to legally bind the facility.

Provide the name, title, address, telephone number and facsimile number (optional) for the Responsible Official.

Certification by Responsible Official: By signing the certification, after all forms are complete and the Responsible Official has reviewed the information, the Responsible Official certifies that the information submitted in the Annual Report is true, accurate and complete.

Certification Date: Enter the date the Responsible Official signed and certified the Annual Report.

Section II: Cremation Unit Information

This form must be filled out for each of the cremation units at this facility that was operated at any time during the reporting period. For example, if the facility only operated one cremation unit during the reporting period, only one Section II form needs to be completed. If the facility operated three cremation units during the reporting period, three Section II forms must be completed.

Facility Name: Enter the name of the facility.

Reporting Period: Enter the reporting period.

Manufacturer: Enter the name of the manufacturer for this cremation unit.

Make & Model: Enter the make and model information for this cremation unit.

Date Installed: Enter the date this cremation unit was installed.

Cremation Unit Number: Enter the number for this cremation unit with respect to the total number of cremation units included in this report. For example, if there is only one cremation unit included in this report, the Cremation Unit # is 1 of 1. If there are three cremation units included in this report, the Cremation Unit #'s will

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be 1 of 3 on the first Section II form, 2 of 3 on the second Section II form and 3 of 3 on the third Section II form.

For each parameter identified, complete the following:

Inspection / Maintenance Date: Enter date of the most recent visual inspection or maintenance performed on component. Date must be within the reporting period for this report. If the entire cremation unit was inspected or maintenance performed on the same day, enter the date once and enter "same" for the rest is acceptable.

Replacement Date: Enter date only if the original component of the cremation unit has been replaced since the unit was installed.

Condition: Indicate the condition of the component upon completion of the inspection or maintenance performed on the Inspection / Maintenance Date. Condition should reflect any maintenance performed on the component during inspection. The following ratings indicates that upon completion of inspection and/or maintenance,

- Good: the component is operating properly and within manufacturer's specifications. No additional inspection, maintenance or repairs are needed or expected for this component.
- Fair: the component is operating properly and within manufacturer's specifications, but displays wear and tear or deterioration that indicates additional inspection(s) is required during the year to ensure proper operation.
- Poor: the component is functional but deteriorated and will need additional service, maintenance or replacement soon as practicable.

Design Parameters / Requirements: Check and complete all items pertinent to this cremation unit.

Secondary chamber temperature is maintained at no less than 1800°F. Check this box if this cremation unit, as designed, operates as a dual combustion chamber system or operates a single chamber cremation unit. This section includes components of the combustion chamber that, at minimum, require inspection and, as necessary, maintenance in order to ensure 1800°F exit temperature is maintained.

Thermocouple: Check this box if the thermocouple is operating properly and within manufacturer's specifications.

Enter the manufacturer's anticipated useful life of the thermocouple.

Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

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Afterburner: Check this box if the afterburner is operating properly and within manufacturer's specifications.

Enter the afterburner's maximum heat input in Btu's per hour.

Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

Primary chamber temperature is maintained at no less than 1400°F. Check this box if this cremation unit, as designed, operates as dual combustion chamber system. This section includes components of the primary combustion chamber that, at minimum, require inspection and, as necessary, maintenance in order to ensure 1400°F exit temperature is maintained.

Thermocouple: Check this box if the thermocouple is operating properly and within manufacturer's specifications.

Enter the manufacturer's anticipated useful life of the thermocouple.

Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

Ignition burner: Check this box if the ignition burner is operating properly and within manufacturer's specifications.

Enter the ignition burner's maximum heat input in Btu's per hour.

Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

Cremation burner: Check this box if the ignition burner is operating properly and within manufacturer's specifications.

Enter the cremation burner's maximum heat input in Btu's per hour.

Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

Auxiliary Burners: Check this box if additional burner(s), used to maintain the temperature of the primary or secondary chambers, are operating properly and within manufacturer's specifications.

Describe the additional burner(s) (i.e., modulating)

Enter the additional burner(s) maximum heat input in Btu's per hour.

NYSDEC Crematory Operator Training Program

Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

Operating Parameters / Requirements: Emissions from the cremation unit must be less than 10% for a six-minute average time period. Check and complete one of the options listed.

Installed opacity monitor: Check this box if there is an automated opacity monitor installed on the exhaust of this cremation unit. The output from the opacity monitor signals 1) an alarm alerting the operator to take measures to reduce opacity or 2) control module that automatically adjusts combustion variables to reduce opacity.

Enter the set point at which the for the opacity monitor signal is triggered.

Indicate (yes / no) that the transmitter and detector components for the opacity monitor are clean and aligned.

Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

Visual Inspection: Check this box if the exhaust has been visibly checked during the unit's operation. Provide any comments relating to the visible emissions or opacity observed during the unit's operation.

Continuous Emission Monitoring: The primary and secondary chamber exit temperatures must be continuously monitored and recorded while the unit is in operation. Indicate component's replacement date (if applicable) and condition.

Temperature Recorder: Indicate (circle one) whether the temperature recorder has either dual pens or a single pen

Pen(s) are functional: Check this box to indicate that the pen(s) are recording the chamber temperature(s).

Recording accurately reflect chamber temperature(s): Check this box to indicate that the temperature(s) recorded accurately reflect the chamber temperature(s).

Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

Additional Parameters: Check each component that has been inspected during the reporting period. Indicate component's replacement date (if applicable) and condition. Provide any additional comments regarding condition, maintenance, repair, cleaning, etc. performed during the inspection or reporting period.

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New York State Department of Environmental Conservation

Subpart 219-4 Crematory Operation Annual Report Form

Section I: General Facility Information

Reporting Period: through	NYSDEC ID #:	# of Cremation Unit(s):
Facility Name:		
Mailing Address: _____ _____		
Contact Information: Name: _____ Title: _____ Telephone Number: _____ Facsimile Number (optional): _____		
Responsible Official: Name: _____ Title: _____ Mailing Address: _____ _____ Telephone Number: _____ Facsimile Number (optional): _____		
Report Format: <i>check one</i> <input type="checkbox"/> A furnace technician has performed an inspection of the cremation unit(s) at this facility during the reporting period stated above. A copy of their report is attached. <input type="checkbox"/> The facility has prepared this report and information provided is based on routine inspection, prescribed maintenance and / or service checks performed on the cremation unit(s). Section II, Cremation Unit Information form is attached for each cremation unit operating during the reporting period.		
Certification by Responsible Official: I certify that the condition and operation of the cremation unit(s) at the above named facility, including calibration of all instrumentation, meet manufacturer's specifications. Signature of Responsible Official: _____ Date: _____		

New York State Department of Environmental Conservation
 6 NYCRR Subpart 219-4 Crematory Operation Annual Report Form - *continued*

Section II: Cremation Unit Information

Facility Name:	Reporting Period:	through			
Manufacturer:	Make & Model:				
Date Installed:	Cremation Unit #:	of			

Design Parameters / Requirements: <i>check & complete all that apply</i>	Inspection / Maintenance Date	Replacement Date	good	fair	Poor
<input type="checkbox"/> Secondary chamber temperature is maintained at no less than 1800°F <input type="checkbox"/> Thermocouple: Manufacturer's specified useful life: _____ Additional description of condition or actions taken: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Afterburner: Heat Input Rating: _____ Btu/hour Description of condition or actions taken: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Primary chamber temperature is maintained at no less than 1400°F. <input type="checkbox"/> Thermocouple: Manufacturer's specified useful life: _____ Additional description of condition or actions taken: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Ignition burner: Heat Input Rating: _____ Btu/hour Additional Description of condition or actions taken: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Cremation burner: Heat Input Rating: _____ Btu/hour Description of condition or actions taken: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Auxiliary Burners: Additional burner(s): _____ Heat Input Rating: _____ Btu/hour Description of condition or actions taken: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operating Parameters / Requirements: Cremation unit has maintained six-minute average opacity of less than 10%. <i>Check and complete one.</i>					
<input type="checkbox"/> Installed opacity monitor, set point _____ % Transmissometer/Detector clean & aligned: yes / no Description of condition or actions taken: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Visual Inspection: Opacity has been visually checked during the unit's operation. Comments: _____ _____ _____					

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Section II: Cremation Unit Information - *continued*

Facility Name:	Reporting Period: _____ through _____
Manufacturer:	Make & Model:
Date Installed:	Cremation Unit #: _____ of _____

Design Parameters / Requirements: <i>check & complete all that apply</i>	Inspection / Maintenance Date	Replacement Date	Condition		
			good	fair	poor
Continuous Emission Monitoring: Primary and Secondary exit temperatures are continuously monitored and recorded while the unit is in operation.					
Temperature recorder: Dual or single pen					
<input type="checkbox"/> Pen(s) are functional	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Recordings accurately reflect chamber temperature(s)					
Description of condition or actions taken: _____ _____					
Additional Parameters:					
<input type="checkbox"/> Primary Chamber Refractory Condition: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Secondary Chamber Refractory Condition: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Stack Condition: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Area around unit is free of debris: _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Spark Plug Condition _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional Comments: _____ _____ _____ _____					

NYSDEC Crematory Operator Training Program

SECTION 3 - NYSDEC Regional Contact Information

Region 1 - Nassau & Suffolk counties
SUNY @ Stony Brook, 50 Circle Road,
Stony Brook, New York 11790-3409
Permit Administrator: Roger Evans
(631) 444-0365 /
RAPCE: Merlange Genece (631) 444-0200

Region 2 – Brooklyn, Bronx, Manhattan, Queens
& Staten Island counties
47-40 21st Street,
Long Island City, NY 11101-5407
Permit Administrator: John Cryan
(718) 482-4997
RAPCE: Sam Lieblich (718) 482-4900

Region 3 – Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, & Westchester counties
21 South Putt Corners Road, New Paltz, New York 12561-1696
Permit Administrator: Dan Whitehead, (845) 256-3054
RAPCE: George Sweikert (845) 256-3045

Region 4 - Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady & Schoharie counties
1130 North Westcott Road, Schenectady, New York 12306-2014
Permit Administrator: William Clarke (518) 357-2069
RAPCE: Don Spencer (518) 357-2045

Region 5 - Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren & Washington counties
1115 State Route 86, P.O. Box 296, Raybrook, New York 12977-0296
Permit Administrator: Marc Migliore, acting (518) 897-1234
RAPCE: James Coutant (518) 623-1200

Region 6 - Herkimer, Jefferson, Lewis, Oneida & St. Lawrence counties
317 Washington Street, Watertown, New York 13601
Permit Administrator: Larry Ambeau (315) 785-2245
RAPCE: Thomas Morgan (315) 785-2239

Region 7 - Oswego, Onondaga, Madison, Cayuga, Cortland, Chenango, Tompkins, Tioga & Broome counties
615 Erie Boulevard West, Syracuse, New York 13204-2400
Permit Administrator: David Bimber (315) 426-7438
RAPCE: Reginald Parker (315) 426-7403

Region 8 - Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne & Yates counties
6274 East Avon-Lima Road, Avon, New York 14414-9519
Permit Administrator: Scott Sheeley (585) 226-5400
RAPCE: Tom Marriott (585) 226-2466

Region 9 - Allegany, Cattaraugus, Chautauqua, Erie, Niagara & Wyoming counties
270 Michigan Avenue, Buffalo, New York 14203-2915
Permit Administrator: David Denk (716) 851-7165
RAPCE: Alfred Carlacci (716) 851-7200

