

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY PROGRAM**

**GENERAL PLAN APPROVAL AND/OR GENERAL OPERATING PERMIT
(BAQ-GPA/GP-14)**

HUMAN OR ANIMAL CREMATORIES

1. Statutory Authority and General Description

In accordance with Section 6.1(f) of the Air Pollution Control Act, 35 P.S. § 4006.1(f), and 25 *Pa. Code* § 127.611, the Department of Environmental Protection (“Department”) hereby issues this general plan approval and/or general operating permit for human or animal crematories (hereinafter referred to as "General Permit").

2. Applicability/Source Coverage Limitations

This General Permit shall serve as a plan approval and/or an operating permit for human or animal crematories.

This General Permit may not be used where the installation of the crematory, individually or in conjunction with other source installations or modifications, would be subject to the requirements of 25 *Pa. Code* Chapter 127, Subchapter D (relating to prevention of significant deterioration) or 25 *Pa. Code* Chapter 127, Subchapter E (relating to new source review).

This General Permit has been established in accordance with the provisions described in 25 *Pa. Code*, Chapter 127, Subchapter H (relating to general plan approvals and operating permits). If the Department determines that the crematory at the facility cannot be adequately regulated under the requirements of this General Permit, a plan approval and/or an operating permit issued in accordance with 25 *Pa. Code*, Chapter 127, Subchapter B (relating to plan approval requirements) and/or Subchapter F (relating to operating permit requirements) will be required. If the facility is a Title V facility, a Title V operating permit issued in accordance with Subchapters F and G (relating to Title V operating permits) is required.

Plan Approval

Once authorization to use this General Permit is granted, construction of the human or animal crematory designated in the application may proceed.

This General Permit does not authorize the construction of a new crematory with a rated capacity equal to or greater than 500 pounds per hour.

This General Permit may be used to authorize the construction of a new crematory that is subject to the best available technology (BAT) required under *25 Pa. Code* §§ 127.1 and 127.12(a)(5). For purposes of this General Permit, compliance with the emission limitations specified in Condition 12 and the work practice standards in Condition 13 satisfies the BAT requirement for new crematories.

A facility that had been authorized to use this General Permit for any existing unit(s) shall submit a new General Permit application, along with the appropriate fee, prior to the installation of any new unit(s).

Operating Permit

This General Permit is not intended for use by a Title V facility as defined in *25 Pa. Code* § 121.1 (relating to definitions). A Title V facility is one whose sources have the potential to emit or actually emit at a rate equal to or greater than the “Facility Potential to Emit” levels shown in the following table. A crematory is eligible to operate under this General Permit if its potential to emit and its actual emissions will remain below the “Facility Potential to Emit” levels listed below.

Pollutant	Facility Potential to Emit (PTE)
CO	100 TPY
NO _x	100 TPY
SO _x	100 TPY
VOCs	50 TPY
PM ₁₀	100 TPY
HAP	10 TPY
HAPs	25 TPY

Once authorization to use this General Permit is granted, operation may proceed provided that the permittee notifies the Department in accordance with Condition 6.

3. Application for Use

Any person applying for authorization to use this General Permit to construct and/or operate a crematory shall notify the Department, in writing, using the General Permit application provided by the Department and shall receive prior written approval from the Department as required under *25 Pa. Code* § 127.621 (relating to application for use of general plan approvals and general operating permits).

With the application for any new crematory, the permittee shall provide a letter from the local municipality and a letter from the county in which the unit(s) are located, or are proposed to be located, signed by the public officials on their respective letterheads, stating that “The installation and/or operation of this crematory is not inconsistent with applicable comprehensive plans and zoning ordinances” or “All required zoning

approvals or variances have been secured for the installation and/or operation of this crematory.”

4. Compliance

Any crematory operating under this General Permit must comply with the terms and conditions of the General Permit. The crematory shall be:

- a. Operated in such a manner as not to cause air pollution, as defined in *25 Pa. Code* § 121.1.
- b. Operated and maintained in a manner consistent with good operating and maintenance practices.
- c. Attended by a trained operator at all times when the unit is in operation.
- d. Operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this General Permit.
- e. Designed to provide sufficient secondary chamber volume to maintain the exhaust gases at the required temperature for at least one second.
- f. Fueled by natural gas, LP gas, propane or # 2 fuel oil meeting the applicable sulfur requirements for commercial fuel oil. Compliance with this requirement shall be deemed to establish compliance with the sulfur compound emission limitations in Conditions 9 and 12 of this General Permit.
- g. Observed by a trained operator for stack emissions as required in Conditions 8 and 11 below. These are to be qualitative observations establishing the absence or presence of visible and odor emissions. If these observations confirm that there are no visible and no odor emissions from the crematory during each cremation cycle, this shall be deemed to establish compliance with the visible and odor emission limitations in Conditions 9 and 12 below. As an alternative to the stack emission observations, the permittee may install and operate an opacity monitoring device, provided that the device is maintained in accordance with the manufacturer's recommendations and the operator is instructed in the proper operation and maintenance of the opacity monitoring device as part of the operator training program identified in Condition 18. The operator must observe the output readings during each cremation cycle, and readings in excess of the applicable limitations identified in Conditions 9 and 12 below shall be addressed in the same manner as the visual stack observations.
- h. If nighttime operation of the crematory is to occur, adequate artificial lighting of the plume at the stack outlet must be provided to enable these observations of stack emissions to occur at night.

- i. Stack tested for particulate matter emissions as required in Condition 7 below or, as an alternative, the permittee may provide a copy of a stack test performed on an identical unit within the last five years. Compliance with this requirement shall be deemed to establish compliance with the particulate matter emission limitations in Conditions 9 and 12 of this General Permit.

5. Permit Modification, Suspension and Revocation

This General Permit may be modified, suspended, or revoked if the Department determines that affected crematories cannot be adequately regulated under this General Permit.

Authorization to use this General Permit shall be suspended or revoked by the Department if the permittee fails to comply with applicable terms and conditions of the General Permit.

Authorization to use this General Permit to construct and/or operate a crematory shall be suspended if the permittee causes, permits or allows any modification (as defined in 25 *Pa. Code* § 121.1) of the crematory covered by this General Permit without Department approval. Upon suspension of the General Permit, the permittee may not continue to operate the crematory until the Department grants approval, in writing.

6. Notice Requirements

The application required by 25 *Pa. Code* § 127.621 shall be submitted to the appropriate Regional Office responsible for authorizing the use of general plan approvals and operating permits in the county in which the crematory is, or will be, located.

- a. This General Permit may be used by the owner or operator of a new source to authorize operation provided that the Department receives written notice from the permittee of the completion of construction and the intent to commence operation at least five (5) working days prior to completion of construction.
- b. The permittee shall notify the Department within twenty-four (24) hours of discovery or by 12:00 noon of the next business day following a weekend or holiday of any malfunction of the crematory which results in, or which may reasonably be expected to result in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 *Pa. Code*, Subpart C, Article III (relating to air resources) or any of the conditions of this General Permit.

7. Sampling and Testing

- a. In order to demonstrate compliance with the particulate matter emission limitations in Conditions 9 and 12 of this General Permit, the permittee shall either perform a

stack test during initial operation of the unit or, as an alternative, provide a copy of a stack test performed on an identical unit within the last five (5) years.

- b. If, at any time, the Department has cause to believe that air contaminant emissions from a crematory authorized to use this General Permit are in excess of the limitations specified in, or established pursuant to, any applicable regulation contained in *25 Pa. Code*, Subpart C, Article III, the Department may require the permittee to conduct tests deemed necessary by the Department to determine the actual emission rate(s). The permittee shall perform such tests in accordance with applicable provisions of *25 Pa. Code*, Chapter 139 (relating to sampling and testing) and in accordance with any restrictions or limitations established by the Department within one hundred and eighty (180) days of the date the Department notifies the permittee, in writing, of the testing requirement.

8. Monitoring, Recordkeeping, and Reporting for Crematories for which Construction Commenced on or before April 17, 1989 and are not subject to the Department's "Recommended Criteria for Crematory Incinerators"

The permittee shall comply with applicable monitoring, recordkeeping and reporting requirements set forth in this General Permit. The permittee shall collect and record the information specified in this condition. The information shall be maintained at the facility for a minimum of five (5) years and shall be made available upon request to the Department.

- a. The permittee shall verify compliance with the visible and odor emission limitations in Condition 9 through the following procedures:
 - i. The permittee shall observe the exhaust stack of the crematory at least once during each cremation cycle for the presence of visible emissions;
 - ii. If any visible or odor emissions are apparent, the permittee shall take immediate action to eliminate them; and
 - iii. If any visible or odor emissions are apparent after the corrective action, the crematory shall not start another cremation cycle until the permittee can verify compliance with the visible emission limitations specified in Condition 9 through methods prescribed in *25 Pa. Code* § 123.43 (relating to measuring techniques), such as Method 9 readings taken by a certified visible emissions reader.
- b. The permittee shall install, maintain, and operate continuous temperature monitors to measure the temperatures at the exit from the primary combustion chamber and at the exit from the secondary (or last) chamber of the crematory. Sensors shall be located such that flames from the burners do not impinge on the sensors. These temperatures shall be recorded in either analog or digital read-only format.

- c. The permittee shall maintain records of:
 - i. Visible emission observations and any corrective actions;
 - ii. A time and corresponding temperature during each cremation cycle when the temperature of the secondary (or last) combustion chamber achieves the temperature required in Condition 10;
 - iii. The amount and type of fuel used on a monthly basis;
 - iv. The hours of operation;
 - v. The number of cremations performed;
 - vi. Operating training certification(s);
 - vii. Burner adjustments and maintenance;
 - viii. Thermocouple calibrations, adjustments and replacements;
 - ix. The fuel oil sulfur content as certified by the supplier of any and all fuel oil burned in the crematory; and
 - x. The removal from the body and proper disposal of any implanted electronic devices and potentially hazardous remedial devices (See Condition 14 of this General Permit).

9. Emission Limitations for Crematories for which Construction Commenced on or before April 17, 1989 and are not subject to the Department’s “Recommended Criteria for Crematory Incinerators”

The operation of the crematory shall not at any time result in the emission of:

- a. Particulate matter emissions in excess of 0.1 gr/dscf, corrected to 12% carbon dioxide as specified in *25 Pa. Code* § 123.12 (relating to incinerators).
- b. Sulfur compound emissions in excess of 500 parts per million, by volume, dry basis, as specified in *25 Pa. Code* § 123.21.
- c. Visible emissions in excess of either of the following limitations:
 - i. Equal to or greater than 20% for a period or periods aggregating more than three minutes in any 1 hour;
 - ii. Equal to or greater than 60% at any time.

- d. Odor emissions in such a manner that the malodors are detectable outside the property of the permittee as specified in *25 Pa. Code* § 123.31 (relating to odor emissions).

10. Work Practice Standards for Crematories for which Construction Commenced on or before April 17, 1989 and are not subject to the Department’s “Recommended Criteria for Crematory Incinerators”

Crematories for which construction commenced on or before April 17, 1989 shall comply with the following work practice standards:

- a. The temperature at the exit of the secondary (or last) chamber shall achieve and be maintained at or above 1600 ° F throughout the cremation cycle.
- b. If an interlock system is available, the unit shall not be charged until:
 - i. The secondary (or last) chamber exit temperature is established and holding at or above 1600 ° F; and,
 - ii. The previous cremation cycle is complete.
- c. If an interlock system is not available, the permittee shall develop and follow a written standard operating procedure for the crematory. All operators of the unit shall be trained in the procedure. The operating procedure shall specify the minimum secondary (or last) chamber exit temperature at which the next cremation cycle may commence.
- d. The manufacturer’s representative or another qualified technician shall adjust the burners at appropriate times such as when the use of an alternate fuel is initiated and when visible emissions are observed.

11. Monitoring, Recordkeeping, and Reporting Requirements for Crematories for which Construction Commenced after April 17, 1989 and are subject to the Department’s “Recommended Criteria for Crematory Incinerators” (Technical Guidance Document #275-2101-007)

The permittee shall comply with applicable monitoring, recordkeeping and reporting requirements set forth in this General Permit. The permittee shall collect and record the information specified in this condition. The information shall be maintained at the facility for a minimum of five (5) years and shall be made available upon request to the Department.

- a. The permittee shall verify compliance with the visible and odor emission limitations in Condition 12 through the following procedures:

- i. The permittee shall observe the exhaust stack of the crematory at least once during each cremation cycle for the presence of visible and odor emissions. As an alternative to the stack observations, if the crematory is equipped with an opacity monitoring device, the operator may observe the output from the opacity monitoring device for the presence of visible emissions;
 - ii. If any visible or odor emissions are apparent, the permittee shall take immediate action to eliminate them; and
 - iii. If any visible or odor emissions are apparent after the corrective action, the crematory shall not start another cremation cycle until the permittee can verify compliance with the visible emission limitations specified in Condition 12 through methods prescribed in *25 Pa. Code* § 123.43, such as Method 9 readings taken by a certified visible emissions reader.
- b. The permittee shall install, maintain, and operate temperature monitors to measure and continuously record the temperature at the exit from the primary combustion chamber and at the exit from the secondary (or last) chamber of the crematory. Sensors shall be located such that flames from the burners do not impinge on the sensors.
- c. The permittee shall maintain records of:
- i. Visible emission observations and any corrective actions;
 - ii. The temperature of the primary and secondary combustion chamber during each cremation cycle on a continuous basis;
 - iii. The amount and type of fuel used on a monthly basis;
 - iv. The hours of operation;
 - v. The number of cremations performed;
 - vi. Operator training certifications and training program content;
 - vii. Burner adjustments and maintenance;
 - viii. Thermocouple calibrations, adjustments and replacements;
 - ix. The fuel oil sulfur content as certified by the supplier of any and all fuel oil burned in the crematory; and
 - x. The removal from the body and proper disposal of any implanted electronic devices and potentially hazardous remedial devices (See Condition 14 of this General Permit).

12. Emission Limitations for Crematories for which Construction Commenced after April 17, 1989 and are subject to the Department’s “Recommended Criteria for Crematory Incinerators” (Technical Guidance Document #275-2101-007)

The operation of the crematory shall not at any time result in the emission of:

- a. Particulate matter emissions in excess of 0.08 gr/dscf, corrected to 7% oxygen.
- b. Sulfur compound emissions in excess of 500 parts per million, by volume, dry basis, as specified in *25 Pa. Code* § 123.21.
- c. Visible emissions in excess of either of the following limitations:
 - i. Equal to or greater than 10% for a period or periods aggregating more than three minutes in any hour;
 - ii. Equal to or greater than 30% at any time.
- d. Odor emission in such a manner that the malodors are detectable outside the property of the permittee as specified in *25 Pa. Code* § 123.31.

13. Work Practice Standards for Crematories for which Construction Commenced after April 17, 1989 and are subject to the Department’s “Recommended Criteria for Crematory Incinerators” (Technical Guidance Document #275-2101-007)

Crematories for which construction commenced after April 17, 1989 shall comply with the following work practice standards:

- a. Before charging the unit, the temperature at the exit of the secondary (or last) chamber shall achieve 1800 °F or higher and be maintained throughout the cremation cycle;

or,

For units that are charged when both chambers are cold, the temperature at the exit of the secondary (or last) chamber shall achieve and be maintained at or above 1800 °F before firing of the primary chamber burner.

- b. The crematory shall provide an interlock system that either:
 - i. Precludes charging of the primary chamber until the secondary (or last) chamber exit temperature is established and holding at 1800 °F and after charging, precludes opening the charge door until the cremation cycle is complete; or,

- ii. In units that are charged when both chambers are cold, precludes firing the primary chamber burner until the secondary chamber temperature is established and holding at 1800 ° F. In these units, the interlock system must also preclude opening the charge door until the previous cremation cycle is complete and the primary chamber is cooled to less than 150 ° F.
- c. The manufacturer's representative or another qualified technician shall adjust the burners after the unit is constructed and before a new unit is first operated and at other appropriate times such as when the use of an approved fuel is initiated and when visible emissions are observed.

14. Prohibited Use

Any air contamination source that is subject to the requirements of *25 Pa. Code* Chapter 127, Subchapters D (relating to prevention of significant deterioration), E (relating to new source review) and G (relating to Title V operating permits) or *25 Pa. Code* §129.91 (relating to control of major sources of NO_x and VOCs) may not be constructed and/or operated under this General Permit except that the owners and operators of Title V facilities may use this General Permit as a plan approval when the requirements of Subchapters D or E are not applicable.

The owner or operator of the crematory must ensure that all medical devices (e.g. pacemakers, defibrillators, etc.) and potentially hazardous remedial devices (e.g. radioactive implants, etc.) have been removed from bodies and properly disposed of prior to cremation. Documentation certifying compliance with this requirement shall be maintained for each cremation.

The owner or operator of any crematory authorized to use this General Permit may cremate either human or animal remains, but not both in the same unit.

The owner or operator of any crematory authorized to use this General Permit may only cremate either human or animal remains and the container used to transport the remains.

The owner or operator of any crematory authorized to use this General Permit is prohibited from using the crematory to dispose of any animals used for commercial or medical experimentation purposes.

The owner or operator of any crematory authorized to use this General Permit may not incinerate any other type of waste (e.g. hospital, medical, hazardous, chemotherapeutic, radioactive, etc.).

The owner or operator of any crematory authorized to use this General Permit may not cremate human or animal bodies whose weight exceeds 500 pounds, including the weight of the container.

15. Transfer of Ownership or Operation

The permittee may not transfer the authorization to use the General Permit to another person. New owners or operators of the crematory shall submit a new application and fees to the Department as described in Condition 19 of this General Permit.

16. Term of Authorization to Use this General Permit

Authority to operate under this General Permit is granted for a fixed term of five (5) years. Provided the applicability requirements are met, the Department will provide each applicant a written authorization to use this General Permit.

17. Expiration and Renewal of Authorization to Use this General Crematory Permit

The permittee's authority to construct and/or operate under this General Permit terminates on the date of expiration of the Authorization to Use the General Permit unless a timely and complete renewal application is submitted to the Department no later than thirty (30) days prior to the expiration date.

Upon receipt of a timely and complete application for renewal, the crematory may continue to operate subject to the Department's final action on the renewal application. Operation pending receipt of the renewal shall cease if, subsequent to a completeness determination, the applicant fails to submit by the deadline specified in writing by the Department, any additional information required by the Department to process the renewal application.

The renewal application shall include the identity of the owner or operator, location of the crematory, General Permit number, description of source category, the appropriate renewal fee listed in Condition 19 and any other information requested by the Department.

18. Operator Training

The manufacturer's representative or another qualified training source shall provide adequate instruction to all operators of each new crematory and to new operators of existing crematories including hands-on control of the unit for at least two operating cycles. The training shall include all of the following elements:

- a. Principles of combustion;
- b. Operating monitors and controls;
- c. Operating sequence under normal conditions;

- d. Safety and operating procedures under foreseeable upset conditions (e.g. power or fuel interruption, burner malfunction, visible emissions, high and low temperature incidents, etc);
- e. Regulatory requirements;
- f. Calibration, adjustment and replacement of thermocouples;
- g. Preventive maintenance practices and procedures and recommended frequency; and
- h. Recordkeeping requirements and procedures.

19. Permit Fees

The General Permit establishes the following application and permit renewal fees:

Five hundred dollars (\$500).

A new application for BAQ-GPA/GP-14 and fee are required each time the permittee installs or modifies a crematory. The installation or modification of a crematory must be conducted according to the terms and conditions of this General Permit.

20. Applicable Laws

Nothing in this General Permit relieves the permittee of its obligation to comply with all applicable Federal, state and local laws and regulations.

Issued by:

Joyce E. Epps
Director
Bureau of Air Quality

Date Issued:
