



COLORADO

Small Business Assistance Program

Department of Public Health & Environment

A Guide to Air Permitting Requirements for Crematories

This document provides an overview of the air permitting, operating, training, and recordkeeping requirements for crematories in Colorado.

A crematory is an establishment containing a furnace (called a retort or incinerator) used for cremation of human or animal remains. These establishments are also called a Crematorium. Because the operation of a crematory furnace will emit air pollutants (tiny particles of unburned material that mix with the exhaust gases as they leave the cremation chamber and exit through the smoke stack), facilities that utilize them are subject to Colorado air emission reporting and permitting requirements.

Under Colorado Regulation No. 1, Section III.B.1 and Colorado Regulation 3 Part B, Section III.D.7, all facilities that operate a crematory furnace unit are required to have an air permit. To begin the air permitting process, facilities must file an Air Pollution Emission Notice (APEN) with the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (division). The division will use the information provided in the APEN to prepare your air permit.

✓ Air Pollutant Emission Notices (APENs)

You must submit the form titled, “Air Pollutant Emission Notice (APEN) & Application for Construction Permit - General”, to report information about your crematory furnace and the control technology you are using to reduce the emissions of regulated pollutants such as particulate matter and carbon monoxide. The APEN form is available from the division’s website under Construction Permit forms and APENs at the following link:

www.colorado.gov/pacific/cdphe/APENforms. The afterburner on your furnace is not considered an add-on control device for APEN filing purposes.

If you have more than one crematory furnace, you may submit information for these furnaces on the same APEN as long as you meet the requirements of Regulation No. 3, Part A, Section II.B.4. Regulation No. 3 requires equipment grouped on an APEN to be identical and share a similar location within a facility; none should have previously been issued a separate air emission permit. Please note the following regarding APENs:

- APENs are valid for five years and must be renewed at least 30 days before the expiration date (date the last APEN was filed with the division).

- Revised APENs must be submitted to the division when certain changes occur at your facility such as a name change, a change in ownership, a change in the business location, or a significant change in emissions.

✓ Supplemental Form

The form titled “**Supplement to Air Pollutant Emission Notice (APEN) for Incinerators**” must be submitted along with the initial APEN. (You are not required to submit the Supplemental form with subsequent APEN updates or renewals on the same equipment). The Supplemental form provides additional information about the crematory furnace that can be useful to the division in determining air emissions from the unit.

✓ Air Permits

Air permits (also called construction permits) will be issued as “Issuances” (i.e. Issuance 1, Issuance 2, etc). A new Issuance will be written for each modification to a permit. The final step of the air permitting process, to finalize the permit, is to submit the Self-Certification Package. This step requires that the business certifies compliance with the terms and conditions of the permit and allows the business to make changes to the permit if necessary.

The Self-Certification Package can be downloaded from the following page under Permit Approval and Self Certification: www.colorado.gov/cdphe/APENforms

Included in the packet are:

- Guidance for self-certification,
- Definition of a responsible official,
- Testing Requirements (if required), and
- Guidance on compliance plan requirements

The Self-Certification Package must be signed and submitted within 180 days of commencement of operations, or the permit may be revoked. Once you demonstrate compliance with your permit, submit the Self-Certification Package, and pay the processing fees the Division will issue a Final Approval to Operate letter allowing your business the final authority to operate under the conditions of your Construction Permit. **Please note that if the permit processing fee is not paid within 30 days of receipt, you will be in violation of your permit conditions and may result in revocation of the permit.**

The permit is issued for the life of the source, unless there are changes in the operation or throughput of the source, which would require a modification to the permit. The division will use the information provided on the APEN and Supplemental form to prepare your air permit and determine the specific terms and conditions of the permit. Permit conditions may include requirements for visible emissions, hourly and annual burn rates (pounds per hour and/or tons per year of remains), and a list of specific types of wastes that can be burned in the furnace(s).

More information on the air permitting process is located in the guidance document, “Reporting Your Air Emissions and Applying for Air Permits Step-by-Step for Colorado Small

Businesses.” This document is available under APEN and Permitting guidance at: www.colorado.gov/pacific/sites/default/files/AP_Air-Permits-Step-By-Step.pdf

➤ OPERATING REQUIREMENTS

Operation of your crematory furnace must comply with the Colorado Regulation No. 6, Subpart VII, *New Source Performance Standards (NSPS Subpart E) for Incinerators* and state air requirements that include the following:

- Particulate matter emissions must not exceed 0.10 grains per dry standard cubic foot of flue gas, corrected to 12% CO₂. A stack test must be conducted on your furnace(s) in Colorado prior to final approval of the air permit to show compliance with this requirement.

A stack test may not be required if data are available that shows an identical unit has been tested in Colorado for Regulation No. 6 particulate standard compliance. The stack test must be conducted in accordance with the methodology provided in 40 CFR Subpart E (40 CFR Part 60.54). The division maintains a list of units that have been stack tested in Colorado. Your supplier may also be able to provide this information.

- Visible emissions from the stack are not to exceed 20% opacity (Regulation No. 1, Section II.A.1). An opacity test includes a six-minute opacity reading using EPA Method 9. The opacity test should be conducted at the same time as the stack test unless stack test data is available from an identical unit tested in Colorado. If stack test data is available, an opacity test on each furnace must still be conducted prior to final approval of the air permit to show compliance with this requirement.

Note: Opacity is the degree (in percent) an air pollutant obscures the view of a trained observer. For example, at 20% opacity, the observer can see 80% of a background (e.g., the sky) from a specific angle through the smoke emitted from the furnace stack.

- Your crematorium is subject to the odor requirements of Regulation No. 2 and you must not allow the emission of detectable odors from the facility.
- You must maintain monthly records of burn rates (daily rates) and hours of operation at your facility. Burn rates are equal to the batch weight divided by hours of operation (cycle time); this requirement will be listed in the air permit for a crematorium. An example of a combined burn log and maintenance log is provided in Appendix A of this document.
- Annual records of actual production rate must be maintained at your facility (e.g., cremation weights in pounds or tons per year or the number of cremations per year, depending on your air permit requirements).
- Your crematorium may only burn materials listed in the air permit. Other material (e.g., paper, plastics, food waste, medical/infectious waste, contraband) is prohibited without prior approval from the Air Division. Submission of an APEN and the appropriate fee is required to modify your air permit to reflect a change in equipment, process, or type of material burned.

- The permit number must be permanently affixed on the crematory furnace for identification purposes.
- Equipment operations and maintenance must be in accordance with the manufacturer's procedures and guidelines. A copy of the manufacturer's operating instructions must be kept at the facility.
- During start-up of the unit, the secondary combustion zone must be preheated to the temperature specified in the manufacturer's operating instructions before starting the primary chambers (typically 1600 degrees F or greater).
- Both the primary and secondary combustion temperatures must be maintained at the operating levels specified by the manufacturer (typically 1600 degrees F or greater).
- At all times, including periods of start-up, shutdown, and malfunction, the furnace and control equipment must be properly operated and maintained. The division recommends that you maintain an operating and maintenance log specifying start-up temperatures, charge temperatures, hours of operation and preventive and corrective maintenance performed on the unit. This information must be available for inspection upon request. An example of a combined burn log and maintenance log for an incinerator is provided in Appendix A of this document.

➤ TRAINING REQUIREMENTS

Trained personnel who are competent and knowledgeable of the unit's operating instructions and maintenance procedures must operate the crematory furnace. The division recommends that facilities maintain documentation of personnel training (such as a training certificate) at the facility to demonstrate compliance. This information must be available for inspection upon request

➤ RECORDKEEPING REQUIREMENTS

The owner or operator shall maintain records as follows:

- Performance test data (e.g., stack test and opacity test) must be maintained for at least five years. The division recommends that you keep this data for the life of the furnace.
- Records of burn rates, consumption rates, hours of operation, operating and maintenance, and operator trainings must be maintained for at least five years. These records should be available for division inspection upon request.

➤ HELP IS AVAILABLE

The Colorado Small Business Assistance Program (SBAP) provides free services to small businesses seeking help in understanding and complying with environmental regulations. Feel free to contact the SBAP at (303) 692-3175 or 3148.

