OVERVIEW OF THE CREMATION PROCESS

EQUIPMENT AND OPERATIONS

THE CREMATION PROCESS IN DETAIL

CHAIN OF CUSTODY

REDUCING LEGAL RISK

IAOPCC

CERTIFIED
PET CREMATORY
OPERATOR PROGRAM™

CANA

The IAOPCC/CANA Certified Pet Crematory Operator Program Manual

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2nd Edition

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CERTIFIED PET CREMATORY OPERATOR PROGRAM™ CANA

The Cremation Association of North America (CANA)

Founded in 1913, the Cremation Association of North America (CANA) is an international organization of over 3,300 members, composed of funeral homes, cemeteries, crematories, industry suppliers, and consultants. CANA members believe that cremation is preparation for memorialization.

The Cremation Association of North America was originally formed to promote the "modern way" and the "safe and hygienic way" of dealing with a dead human body. The focus was on cremation as a form of disposition and had nothing to do with the funeral and memorialization of the deceased. At that time, and up into the early 1920s, cremation was the choice of the wealthy and the well-educated. All crematories were located on cemetery property and elaborate columbaria were built for the elaborate urns then being used.

After it became apparent, through scientific investigation, that proper in-ground, full body burial was safe, cremation fell out of favor and remained in the 3% to 5% range. It wasn't until the early 1980s that the rate reached double digits and started to increase on the average of about 8% annually.

In 1985 CANA, which had been monitoring the annual national and state cremation rates, projected the cremation rate for the year 2000 would be a little over 25%. This prediction made a real impact in the death care profession because that projection represented more than a 100% increase in the number of cremations in just fifteen years. CANA's projection was actually a little under the actual cremation percentage for 2000 as the rate was 26.19% with 629,362 cremations. CANA continues to gather disposition data and report current and projected cremation trends. CANA adopts a conservative approach, typically following the 50% percentile. CANA statistics are remarkably accurate and relied upon by industry leaders.

CANA members have recognized this steady growth of cremation and have been active in promoting the importance of memorialization when cremation is chosen. CANA is not a 'pro-cremation over burial' association, but is concerned with the proper treatment and respect for those who have chosen cremation and believes that cremation is preparation for memorialization.

CANA also feels that the word "cremains" should not be used when referring to cremated remains. "Cremains" has no real connection with the deceased whereas a loved one's "cremated remains" has a human connection.

A membership in CANA is the best way for any cremationist, funeral director or cemeterian to stay abreast of trends in cremation, receive reliable cremation statistics, and learn how to deal with an aging population that is choosing cremation in greater and greater numbers. Call our office today to learn more.

The International Association of Pet Cemeteries and Crematories (IAOPCC)

The **International Association of Pet Cemeteries & Crematories (IAOPCC)** is a not-for-profit organization dedicated to advancing the standards, ethics, and professionalism of pet cemeteries and crematories around the world. *With Members in more than 15 countries, we are the Recognized Leader in the Pet Aftercare Profession!*

Founded in 1971 in West Chicago by Pat Blosser, our mission continues to set and elevate the standards and ethics of the pet aftercare profession, provide continuing education for our Members, and to educate pet parents on the importance of seeking services from an **IAOPCC** Pet Cemetery/Crematory Member versus the other options available to them.

The **IAOPCC** represents the gold standard in both business and ethics in the aftercare industry. Being an **IAOPCC** Member assures your clients that they are dealing with a reputable provider offering the finest in aftercare for their pet. **IAOPCC** Members are expected to uphold the high standards set by the Association and are bound by the standards and practices set forth by the Association.

In an unprecedented and historical first**,** the **IAOPCC** is the only organization with published recommended procedures for every step of the pet cremation process, including transportation, each type of pet cremation, readily retrievable records, facility standards and continuing education for pet crematorium staff members. ***Following five years of study and research, these Accreditation standards, processes, and program of inspections were rolled out in January of 2014 across the United States, Canada, and worldwide to its members.***

As a professional in the Pet Aftercare Industry, you are invited to join the **IAOPCC**. Membership not only acts as an endorsement for your business, it tells your clients that you care. For sponsors and suppliers, membership provides you inside access to reach our members. If you have not yet opened a pet cemetery and/or pet crematory, you may join the **IAOPCC** as an Affiliate Member allowing you to learn all aspects of the pet aftercare profession prior to establishing your business. Participating in the **IAOPCC** as a Member gives you access to the *tools* needed to become successful! Contact our offices today to learn more about Membership with us.

What You Can Expect from an IAOPCC Member?

- IAOPCC Members adhere to a strict Code of Ethics & Standards of Business Practices;
- IAOPCC Members have an open door policy providing a physical location for clients and/or visitors to see its operations;
- IAOPCC Members allow for pet parents to view their pet's body prior to cremation and/or burial and offer the opportunity to be present when the pet is being cremated and/or buried*;*
- IAOPCC Members provide full disclosure of the pet identification and tracking process;
- IAOPCC Member cemeteries provide for a deed restriction and perpetual care fund for continuation and maintenance of the cemetery;
- IAOPCC Members are required to meet EPA air quality standards and comply with local, state, provincial, and federal laws;
- IAOPCC Members will not misrepresent their services nor conduct their business in a fraudulent manner;
- IAOPCC Members offer the utmost in quality care and services providing pet parents and their pets compassionate care;
- IAOPCC Members have resources available for grief counseling services and grief education for families.

TABLE OF CONTENTS

INTRODUCTION **A**

About this Manual A

COURSE OVERVIEW **A**

LEARNING OUTCOMES **B**

Activities B

COURSE DETAILS **C**

ASSESSMENT **C**

ACKNOWLEDGEMENTS **D**

CANA Member Subject Matter Experts D
CANA Supplier Member Subject Matter Experts D

MODULE 1: OVERVIEW OF THE CREMATION PROCESS **1**

IAOPCC Definition of Cremation 1
What Do You Already Know? 1
The Cremation Process 3

MODULE 2: EQUIPMENT AND OPERATIONS **4**

Lesson 1: The Cremator 4
Lesson 2: The Science of Combustion 5
Lesson 3: Common Components and Features 9
Lesson 4: Cremator Design 12
Lesson 5: Control 16

MODULE 3: THE CREMATION PROCESS IN DETAIL **24**

Lesson 1: Receiving Remains 24
Lesson 2: Preparation for Cremation 25
Lesson 3: Cremation Process 28
Lesson 4: Recovery & Processing of Remains 31

MODULE 4: CHAIN OF CUSTODY **34**

Lesson 1: Documentation 34
Lesson 2: Receiving Remains 37
Lesson 3: Tracking Remains 39
Lesson 4: Returning Cremated Remains 42

MODULE 5: REDUCING LEGAL RISK **45**

Lesson 1: Operations 45
Lesson 2: Staff Training 46
Lesson 3: Compliance 47
Lesson 4: Regulatory Investigations 48

MODULE 6: WRAP-UP **49**

APPENDIX **50**

Glossary of Terms 50
Accreditation Program for Pet Crematory Facilities 55
History of Pet Funerals & Cremation 56
Application for Doyle L. Shugart Scholarship Program 60
OSHA and CCOHS Guidelines 63
Answer Key 64

CREMATORY OPERATIONS CERTIFICATION TEST STUDY GUIDE **66**

Introduction

In this increasingly competitive and litigious environment, possessing qualifications that set you apart from the rest of the industry is critical. This course ensures that you and your employees have the most current crematory operations training available in the industry and provides proof to the public of your commitment to safe cremation practices that demonstrate the utmost respect and caring for their loved ones. The content of this course is designed to increase your understanding of crematory operations and will provide you with a solid overview of best practices related to cremation. This training complements on-the-job training and machine-specific training you might receive. While this training will not guarantee you will get a job, it looks great on a resume.

About this Manual

The policies, procedures, and recommended standards of practice in the CANA/IAOPCC Certified Pet Crematory Operator program and manual are purely aspirational and in no way create a standard of care above the standard that currently exists in each operator's location of practice. These standards are not to be used by parties to litigation over whether or not they have been observed. The subject matter experts and content contributors present examples intended to teach basic principles of crematory operations, but you, the practitioner, must consult state/provincial and local laws for specific regulations governing your practice.

Course Overview

This course presents material in a series of modules. They are as follows:

Module 1: Overview of the Cremation Process
Module 2: Equipment and Operations
Module 3: The Cremation Process in Detail
Module 4: Chain of Custody
Module 5: Reducing Legal Risk
Module 6: Tying it all Together
Module 7: Final Exam

Learning Outcomes

At the end of this course, participants should be able to:

Module 1:

1. Define cremation.
2. Distinguish between commonly used terms.
3. Summarize the overall process of cremation from the time a dead body is received until cremated remains are returned to the family.

Module 2:

4. Describe the process of combustion, including the inputs and outputs, and how to control the rate.
5. Name the common components of a cremator, and briefly explain their purpose.
6. Describe the importance of temperature control.
7. Identify the cremator components that require regular maintenance.
8. List the Personal Protective Equipment (PPE) that should be worn when operating a cremator.

Module 3:

9. Explain the key processes and steps in the receiving, preparing, recovering and processing of remains.

Module 4:

10. Identify and use the proper forms for documenting chain of custody.

Module 5:

11. Describe additional ways that a business can minimize legal risk.

Activities

Attendees of this course will participate in the following activities, designed to provide maximum opportunities for successfully achieving the learning outcomes:

- Activities
- Individual problem solving
- Case studies
- Video

Course Details

- Both the course and the exam will be completed through EdApp.
- You have 90 days from the course start date to complete the course and the final examination, and you will receive your score immediately upon completion.
- You will have three (3) attempts to receive 80% or better on the test. Once you receive a passing score, your Crematory Operator Certificate will be mailed to you.
- This print copy is provided as a study guide. You may use this document when taking the test, but be aware that question order and choices will be randomized.

Assessment

In order to receive a Certified Pet Crematory Operator certificate, participants of this course are required to:

1. complete all six course modules.
2. complete the final examination questions in one sitting.
3. receive a score of 80% or better on the final examination.

The course and final examination will be completed through EdApp. You will have three (3) attempts to receive a passing score. Correct and incorrect answers are not shown until a passing score is achieved. You may use your manual during the test. A print copy of the test has been provided at the back of this manual for study purposes; however, the questions and choices will be randomized when taken online.

After successfully completing the course, you will receive a printed **Certified Pet Crematory Operator Certificate** from Gateway Headquarters by mail approximately 4-6 weeks after course completion.

Please note: the CANA/IAOPCC Certified Pet Crematory Operator program is not interchangeable with the human crematory certification received through the CANA COCP™.

Acknowledgements

CANA first offered a Crematory Operators Certification Program (COCP) in 1983 and continued to use the same curriculum through 2012, which was licensed from Matthews Cremation Division and an attorney. Several CANA board members also provided a practitioner perspective as they hosted the training.

In 2013, CANA enlisted the expertise of numerous practitioners, manufacturers and lawyers to create an all new crematory operations curriculum, owned and copyrighted by CANA, which reflects current legislative and regulatory requirements and best practices. The new curriculum also led to a change in the course title to Crematory Operations Certification Program. This curriculum is updated regularly to ensure the most accurate, current and relevant information is presented for the benefit of all funeral professionals, not just crematory operators. The most recent revision was completed in 2022.

CANA and IAOPCC collaborated to adapt the most current curriculum to the pet industry. This manual is a result of that collaboration. CANA and IAOPCC thank the following subject matter experts who contributed content and expertise to the development of this course:

CANA Member Subject Matter Experts

Donna Shugart-Bethune • Deceased Pet Care Funeral Homes & Crematories • Atlanta, GA
Christopher Farmer, Esq. • The Farmer Firm • Houston, TX
Angie Hansen • Memorial Pet Care • Meridian, ID
William McQueen • McQueen & Siddall, LLP • St Petersburg, FL
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John Mitchell • U.S. Cremation Equipment • www.uscremationequipment.com
Steve Rohleder • FC Industries, Inc • Kansas City, MO
Larry Stuart Jr. • Crematory Manufacturing & Service Inc. • www.crematorymanufacturing.com

Special thanks to B&L Cremations Systems, Crematory Manufacturing & Service, Inc., Therm-Tec, Inc., and U.S. Cremation Equipment for providing some of the photographs used to illustrate this manual.

Module 1: Overview of the Cremation Process

IAOPCC Definition of Cremation

The mechanical and/or thermal or other dissolution process that reduces remains to bone fragments. Cremation would include the subsequent processing and pulverization of bone fragments. There are three methods of cremation used for pets and their definitions are included in the activity below (#11-13).

What Do You Already Know?

Match each set of terms with the correct definitions.

remains | cremated remains | processed remains

_____ 1. the remaining bone fragments after the cremation process is completed

_____ 2. the dead animal remains prior to cremation

_____ 3. the end result of pulverization (bone fragments reduced to unidentifiable dimensions)

authorized agent | client | crematory authority

_____ 4. the legal entity or the authorized representative of the legal entity who conducts the cremation

_____ 5. the owner of the pet

_____ 6. the person(s) legally entitled to order the cremation of the remains

cremation container crematory/crematorium cremation chamber urn

_____ 7. the receptacle in which the animal remains may be delivered to the crematory

_____ 8. the enclosed space within which the cremation process takes place

_____ 9. the building that houses the cremator

_____ 10. any receptacle in which processed remains can be placed and securely closed to prevent leakage of processed remains

communal cremation individual/partition/segregated cremation private cremation

_____ 11. only one pet is placed in the cremation chamber and cremated

_____ 12. several pets are cremated in the same cremation chamber, with no regard for keeping them separated

_____ 13. several pets are cremated in the same cremation chamber at one time, with some form of separation between the pets

holding facility holding vault

_____ 14. a place to store or hold remains, usually a cooler or freezer

_____ 15. an area designated for the retention of remains prior to the cremation

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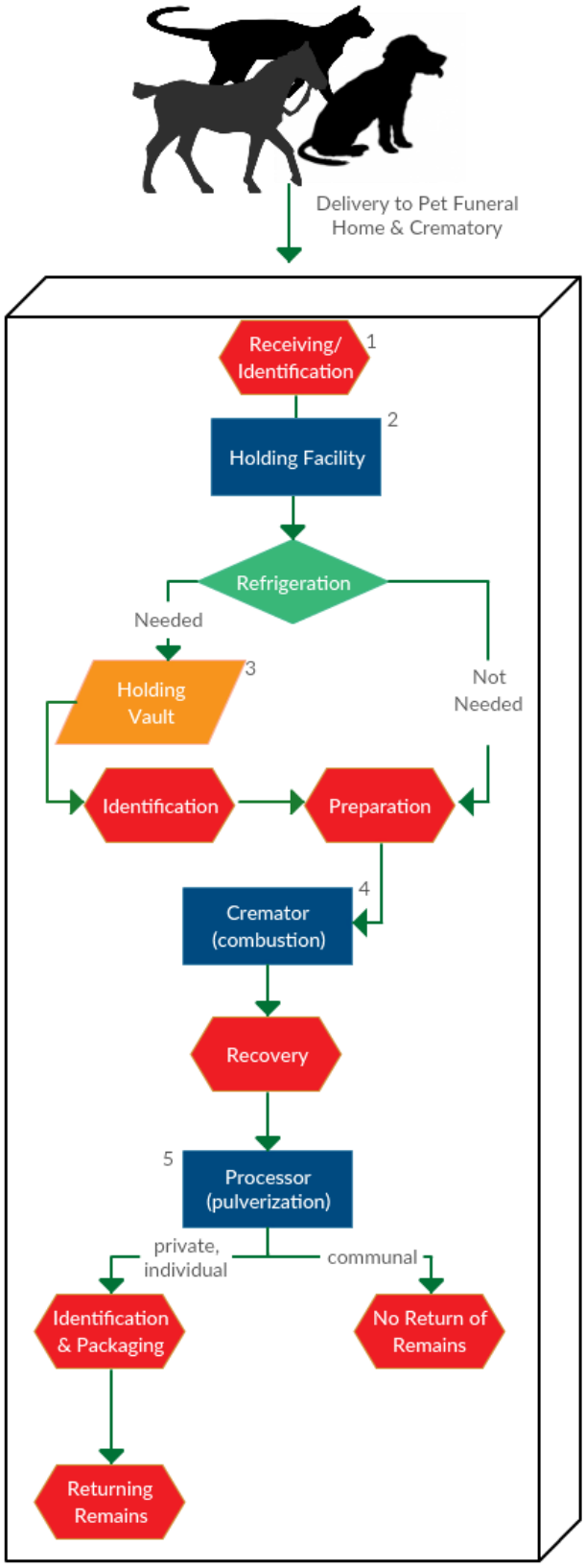
The Cremation Process



Notes:

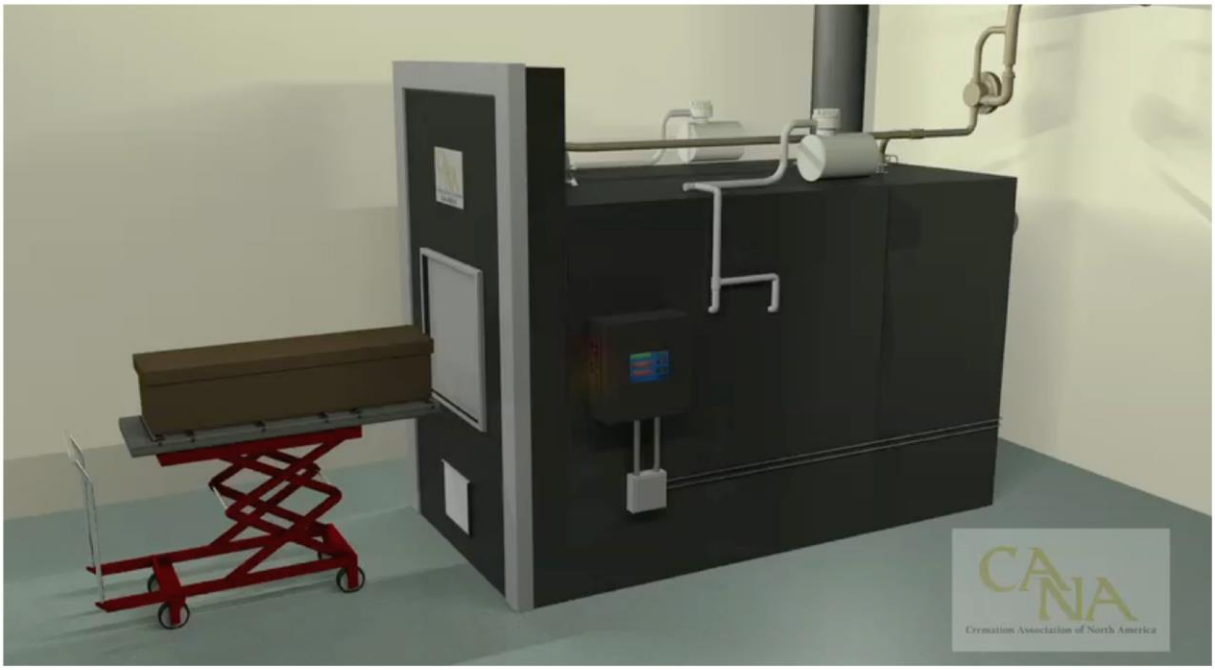
Reference IAOPCC Accreditation Standards 2017

1… Section V
2… Terminology, 1.8
3… Terminology, 1.8 and Section VII
4… Section VIII
5… Section VIII

Module 2: Equipment and Operations

Lesson 1: The Cremator

The modern cremation process incinerates and controls the products of combustion. Cremators are designed to provide efficient, safe combustion and effective control of the products and emissions of the combustion cycle.



Notes:

Lesson 2: The Science of Combustion

Definition

Combustion, the act or instance of burning, involves a chemical reaction in which oxygen is rapidly combined with a fuel, giving off heat. The oxygen combines with certain components of the fuel – such as carbon, hydrogen or sulfur – and changes them to different gases. The components of the fuel that are not burned remain as soot.

$$\text{Fuel} + O_2 \rightarrow CO_2 + 2H_2O + \text{heat}$$

What are the sources of fuel?

_____

_____

_____

Chemical Reactions

The gases produced during combustion are generally either:

- carbon monoxide or carbon dioxide (CO/CO_2), formed when carbon and oxygen combine (C + O)
- water in the form of water vapor (H_2O), formed when hydrogen and oxygen combine (H + O)
- sulfur dioxide (SO_2), formed when sulfur and oxygen combine (S + O)

The chemical equations that represent this process depend on which components of the fuel are reacting with the oxygen.

Examples:

$$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O + \text{heat}$$

$$S + O_2 \rightarrow SO_2 + \text{heat}$$

Complete (Perfect) Combustion

Perfect combustion is the result of mixing and burning the exact proportions of fuel and oxygen so that no unburned fuel or oxygen remains. Perfect combustion results in the formation of carbon dioxide and water. Perfect combustion is impossible.

Often, excess air is supplied in the cremator, but excess oxygen plays no part in the process. Carbon and sulfur atoms can only combine with two oxygen atoms each, so excess oxygen does not react.

$$C + 2O_2 \rightarrow CO_2 + O_2 + \text{heat}$$

But, if not enough oxygen is supplied, two atoms of carbon could combine with two atoms of oxygen, sharing the available oxygen, but neither has enough to become carbon dioxide. Instead they form carbon monoxide (CO), a compound that will burn to carbon dioxide if more oxygen is provided.

$$2\,C + O_2 \rightarrow 2CO + \text{heat} \qquad \underset{\text{if add'l oxygen supplied}}{+\,O_2} \rightarrow 2CO_2$$

This is referred to as ***incomplete combustion***, when carbon monoxide and carbon are formed instead of carbon dioxide.

The oxygen for combustion normally comes from air. Since air is about 78% nitrogen and 21% oxygen, the volume of air required for combustion is much larger than that required if using pure oxygen. Although the nitrogen in the air does not take part in the combustion, the combustion reaction does absorb some of the heat, which lowers the flame temperature and may result in the formation of oxides of nitrogen (NO_2). And so, the greater the excess air, the greater the temperature reduction.

Principles of Combustion

To be incinerated, material must be kept at a high enough temperature for a long enough period of time to cause all the material to fully combust. Gases (e.g. CO, CO_2, SO_2) will be driven from the material as it burns, so it is important to circulate these gases and mix them with oxygen from flowing air so that the gases will also combust as completely as possible. Thus, turbulence must be induced to provide for complete combustion.

The Three T's of Combustion

Temperature

- (or heat) is the driving force of the combustion process
- is provided by one or more burners which preheat the cremator and support the combustion of materials

Time

- is an element of cremator design by the provision of enough space in the combustion chambers of the cremator to retain the gas flow for a long enough period of time to allow for complete combustion of both the solid material and the volatile gases.

Turbulence

- is an element of cremator design by providing a series of ***baffles*** or constrictions in the chambers. These constrictions cause the gas to change direction and/or velocity, which mixes them with air (oxygen) to permit complete combustion.
- Separation or stratification (layering) of the combustion gases would occur if turbulence were not induced by the design. Without this turbulence some of the gases would go through the unit unburned.

The driver behind the three principles is air.

Combustion is impossible without the presence of oxygen.

Retention Time

Retention time is the actual time that the products of combustion remain in the heat of the secondary chamber. Enough time is needed for the products of combustion to re-combust, mix and to allow for the carbon atoms to combine with oxygen to form CO_2 and with hydrogen to form H_2O. The relationship between the 3 T's (time, temperature, turbulence) is critical with respect to a minimum effective retention time.

- The hotter the products of combustion (gases) the faster they flow through the secondary chamber, reducing the retention time.
- Turbulence plays a factor as well, as it will reduce the speed of flow, increasing the retention time.

Retention time is calculated based on many variables including the area of the secondary chamber, the rate of combustion typical to the design of the specific make/model of cremator, the draft and pressure created, the typical operating temperature of the chamber and expected turbulence. This is a theoretical calculation, and actual conditions will change depending on all of the variables involved (body size and composition, container material, number of cremations performed prior, etc.), but a minimum retention time must be achieved for efficient secondary combustion and destruction of pollutants.

THE EQUIPMENT

All cremators are designed around the three T's of combustion: Time, Temperature, and Turbulence.

Cremators are designed for specific retention times. Controlled air designed crematories achieve complete combustion at ⅓ to ½ second retention times, however a one second retention is available if required by permit. Hot hearth designed crematories operate at one second retention by design. Both controlled air and hot hearth crematories provide effective destruction of the products of combustion prior to their exiting into the atmosphere.

Notes:

Classification of Wastes

WASTE Classification	WASTE DESCRIPTION	BTU/ POUND
Type 0	A mixture of highly combustible waste, primarily paper, cardboard, wood, boxes, and combustible floor sweepings. Commercial and industrial sources.	8500
Type 1	A mixture of combustible waste such as paper, cardboard, wood scrap, foliage, floor sweepings, and up to 20% cafeteria waste, commercial, and industrial sources.	6500
Type 2	Rubbish and garbage. Residential sources.	4300
Type 3	Animal and vegetation waste from restaurants, cafeterias, hotels, etc. Institutional, club, and commercial sources.	1000
Type 4	Human and animal remains consisting of carcasses, organs, and solid tissue wastes from farms, laboratories, and animal pounds.	1000

A cremator is classified as an incinerator, specifically a class VI incinerator. This means it is only approved for Type 4 refuse, and should not be used for any other purpose. Manufacturers design modern cremators to meet this classification and use.

Lesson 3: Common Components and Features

See if you can correctly identify the parts of a cremator. For each term, identify the number of the labeled part from the diagram.

_____ primary combustion chamber

_____ secondary combustion chamber

_____ main burner

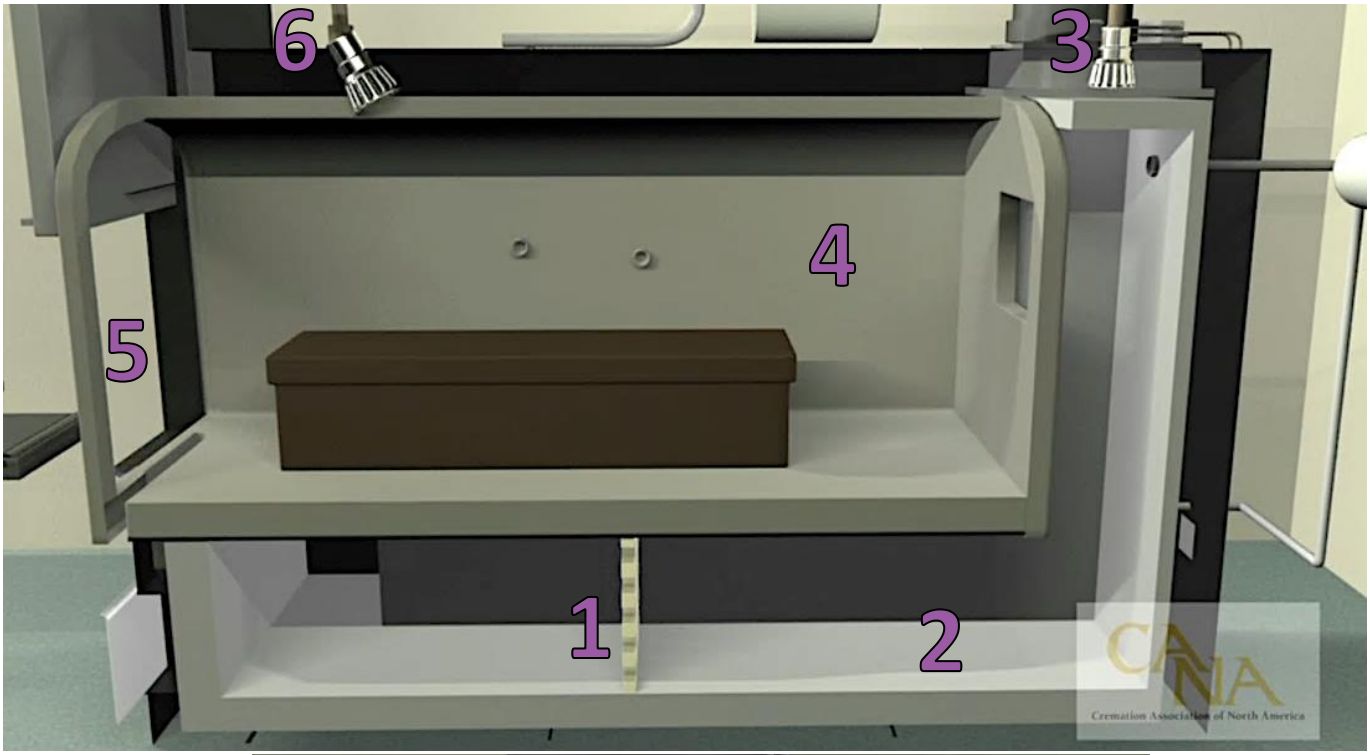
_____ afterburner

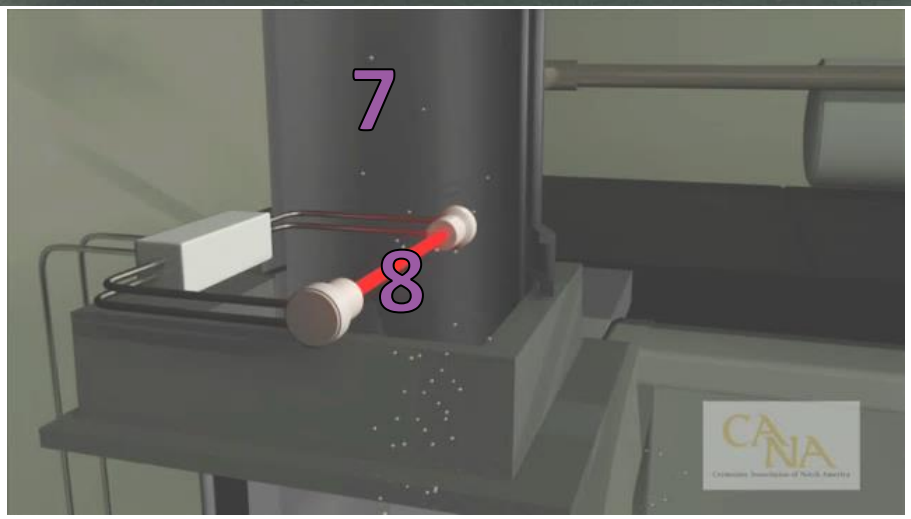
_____ charging door

_____ chimney stack

_____ baffles

_____ opacity monitor



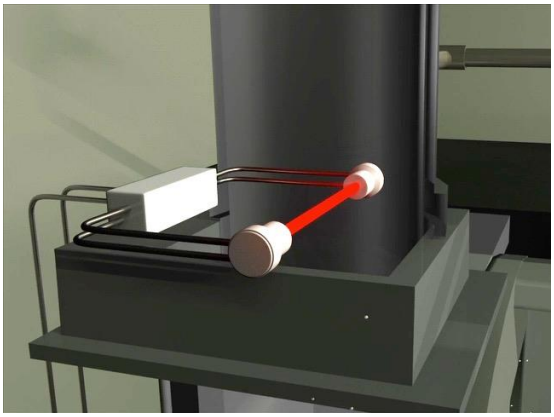


Components Common to All Cremators

The following components are common to all cremators, although design specifics vary among manufacturer models.

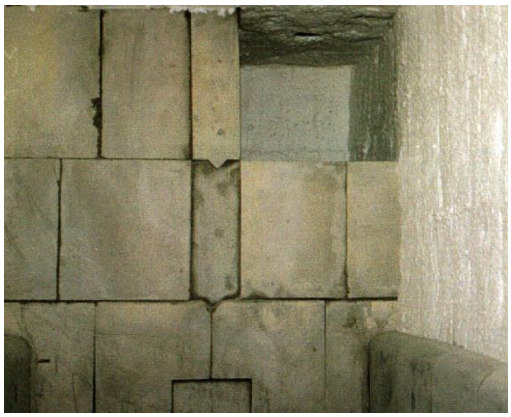
- The ***charging door*** is operated by hydraulic or variable speed electric door lifts. Personal protective equipment should be worn by the crematory operator when opening the charging door for insertion of the remains or for repositioning or removal of the cremated remains. Any safety locks should be engaged before the crematory operator reaches into the chamber for any reason.

- The ***primary combustion chamber*** is where the remains are placed. Air ports surround the hearth floor. The ***main burner*** provides ignition of the ***charge*** or ***cremation container*** and helps maintain temperatures in the primary chamber.
- The ***secondary combustion chamber*** receives the gases produced by combustion in the primary chamber. The ***afterburner*** or secondary burner is located in the secondary chamber and maintains secondary chamber temperature for full combustion to take place.
- The ***throat*** is the area that connects the primary and secondary chamber.
- The ***hot air duct*** or ***chimney stack*** is lined with refractory (described on the next page) and receives the fully combusted products of combustion. The hot air then flows into the atmosphere.



- The ***opacity monitor*** is the part of the system that monitors visible emissions. An infra-red beam is transmitted to a receiver across the stack base and measures the amount of opacity. When the opacity monitor detects smoke at the base of the stack, this means there is incomplete combustion of the volatile gases in the secondary chamber. If the amount of opacity exceeds the allowed amount the system will, at the very least, set off an audible alarm to alert the operator that adjustments to the system need to be made. Newer units may actually make the adjustments automatically. These adjustments may include: shut down of the primary burner, shut down of the floor air, and/or shut down of the throat/secondary air.
- The ***excess air system*** brings in air from outside the unit. Negative pressure creates a draft that brings air in. The crematory room must feature louvered panel fans and/or open doors or windows to ensure air flow.
- A ***thermocouple*** is a heat-sensing device made up of two dissimilar metals. The circuit develops a small DC voltage proportional to the temperature at the joint of the two metals. The signal is then carried to the temperature controller by means of thermocouple extension wire of the same type as the thermocouple itself. Most cremators are equipped with two thermocouples: one for the primary chamber and the other for the secondary chamber. Each thermocouple is connected to the appropriate controller card or equivalent device and the temperatures are digitally displayed on the Control Panel or screen.

- Cremators incorporate several ***limit switches*** that sense movement and position of certain sub-systems such as the loader, charging door, etc.
- The ***refractory material*** lining the unit provides insulation to retain the heat and prevent it from escaping. Types of refractory may include bricks, pre-cast shapes, material poured in place and cured, and ceramic fiber modules.



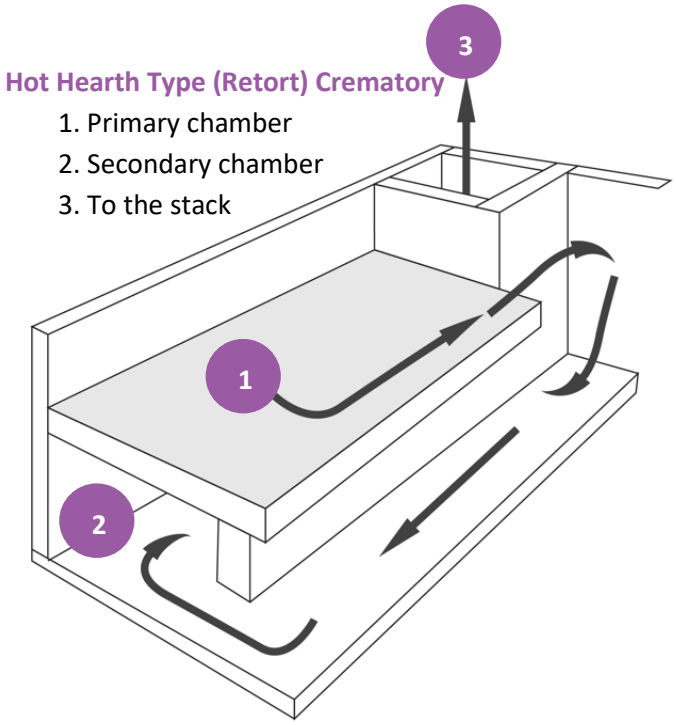
- The ***flame detectors*** are located on the burners either on top or at an angle. Their purpose is to detect the burner flame and ensure safe operation of the burners. Failure of the burner to ignite or to be interrupted during operation will be caught by the detector and automatically close the gas valve to the respective burner.

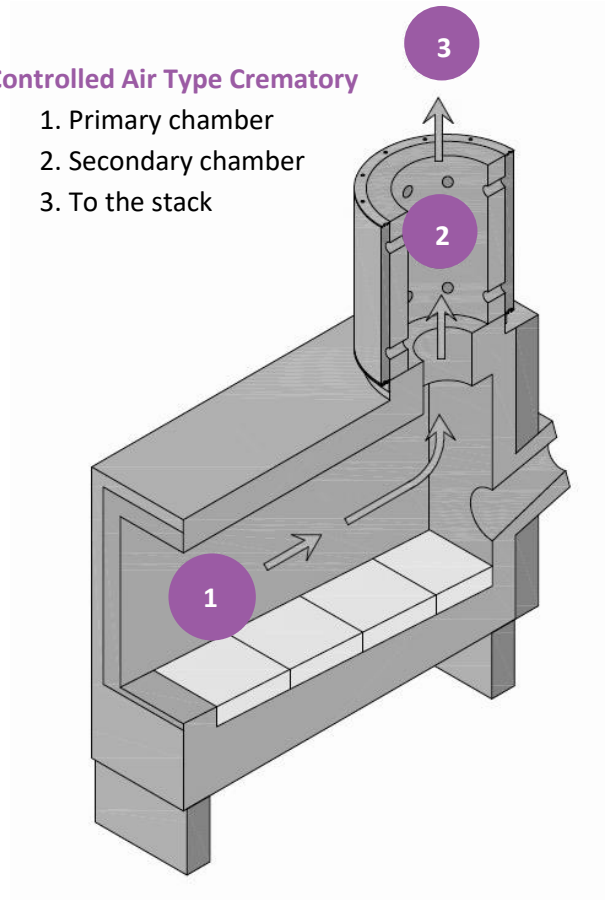
Notes:

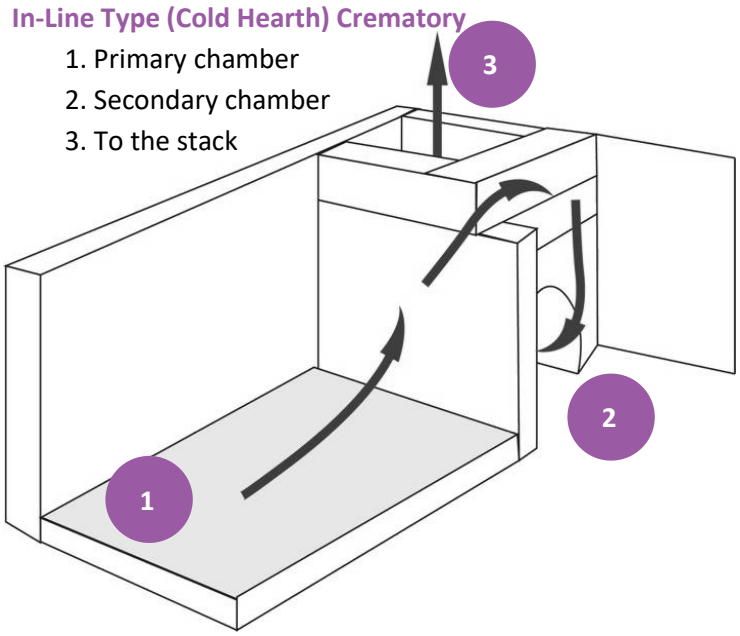
Lesson 4: Cremator Design

Basic Design

There are three basic cremator designs—*hot hearth (retort)*, *controlled air*, and *in-line (cold hearth)*. The basic differences in these designs are in gas flow direction, the shape of the ports and chambers, and in the placement of the secondary chamber. In the hot hearth type, the secondary chamber is located below the main chamber. In the controlled air type, the secondary chamber is located above the primary chamber. In the in-line type the secondary chamber is behind the main chamber.







THE EQUIPMENT

The basic differences between retort, in-line, and controlled air designs are in gas flow direction, the shape of the ports and chambers, and location of the secondary chamber.

New Industry Trends

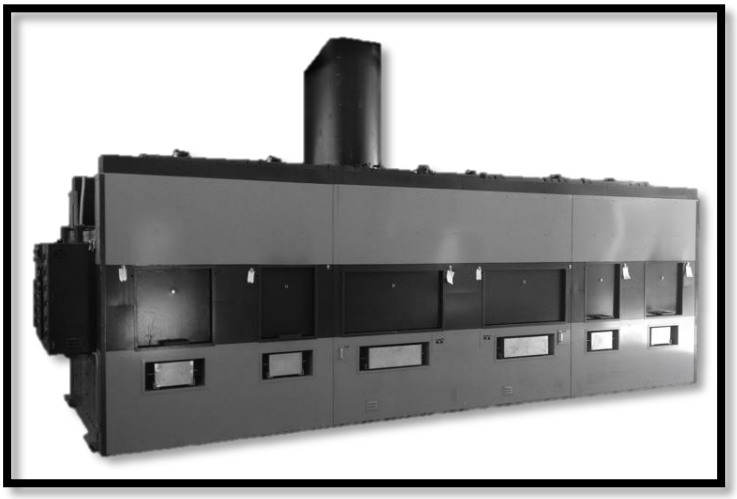
Cremators come in many different shapes and sizes, and are designed to accommodate private, individual/partitioned/segregated, or communal cremations.

The picture at right is an example of a typical hot hearth cremator, commonly used for private cremations.

The picture below shows a controlled air type furnace, also used for private cremations.

Historically, crematory operators would add rows of firebricks to section off a cremator in order to conduct partitioned/segregated cremations. Because more pet parents are choosing private cremations, multi-door and multi-chamber cremators are now being designed to accommodate private cremations without the manual labor of adding firebricks. Here are some examples of what those cremators may look like.

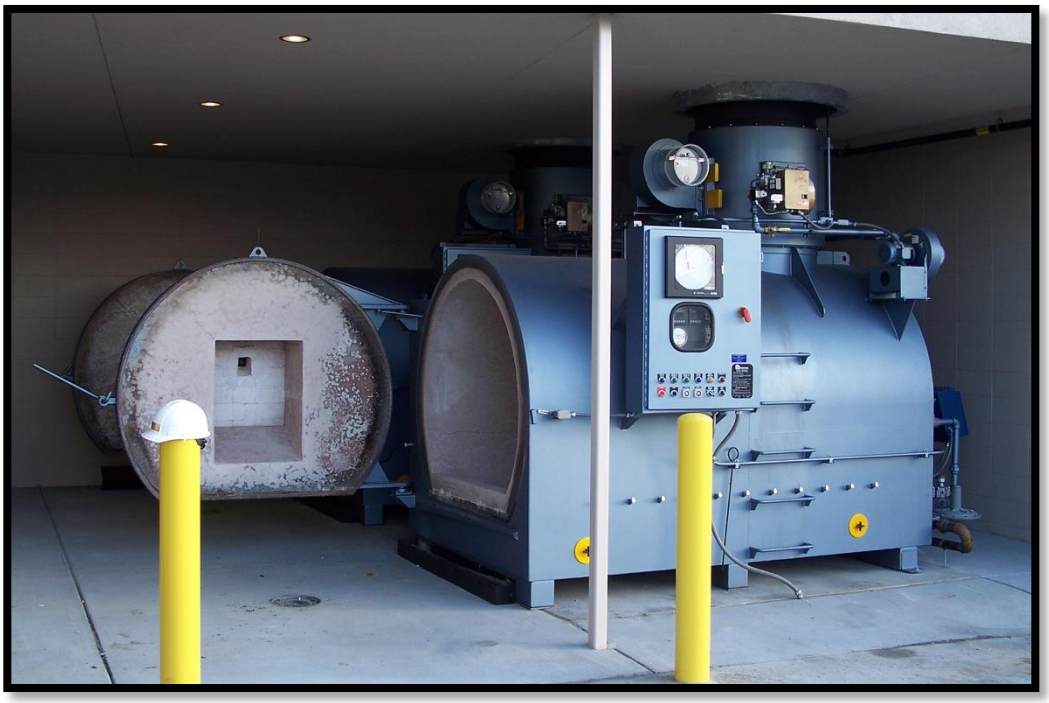
Inside view of a multi-door, partitioned cremator. The firebrick walls provide permanent segregation within the cremation chamber.



Multi-door, partitioned cremators

Multi-chamber cremator

Equipment used for communal cremations, where there is no regard for separation of individual animals, may be very large to accommodate 500 to 5,000 pounds.



Alkaline hydrolysis is an alternative to flame-based cremation, though it is not commonly used due to the limited number of states that permit this method. In the alkaline hydrolysis process, sometimes referred to as “water cremation,” a mixture of water and potassium hydroxide is used, along with temperature and a pressurized environment, to dissolve the pet’s muscle and tissue, leaving the bone fragments.

Combustion in the Cremator

The process of cremation is the gasification of a solid. This is accomplished by heating the body, which contains between 65% and 85% water by weight. This mass must be heated to a temperature high enough to facilitate the combustion process.

British Thermal Unit (BTU): the amount of heat necessary to raise the temperature of 1 pound of water by 1°F, at or near maximum density.

This can be a delicate balance due to the varied materials being burned (body, container, etc.) and their widely differing rates of combustion. The body and or the cremation container can contain a lot of excess energy which will increase the BTU value of the reactions, resulting in increased rates of combustion and potential over-run of the secondary chamber. Fat burns 17 times hotter and faster than muscle and organ tissue. In addition, it is estimated that 100 pounds (± 10%) of animal fat tissue provides the same BTU value as 12.56 gallons of kerosene. The system is designed to provide for as a consistent and controlled rate of combustion as possible.

The combustion process in the cremator proceeds in two stages — primary or solid fuel combustion of the deceased through direct flame impingement in the main/primary chamber, followed by secondary or gaseous phase combustion. The products of combustion flow to the secondary chamber, where they are destroyed by secondary combustion. Inorganic particles (particulate matter) settle out of the stream as the turbulence is created and the gases slow down during the process. They expand and allow these particles (typically part of the box) to settle into the second half of the secondary chamber (settling area). The gases formed as a by-product of combustion – CO_2, H_2O, O_2, etc. finally discharge via a stack. The secondary chamber is where all of the pollution control happens prior to leaving the stack and is an area that is many times not inspected on a regular basis.

Sources of Energy

Fire requires fuel, heat, and oxygen. Heat is required to start the cremation process, but it is also generated during combustion of the animal remains. There are several sources of energy; list them below. It is critical to know these sources to be able to schedule cremations each day.

- _____
- _____
- _____
- _____
- _____

Notes:

_____

_____

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Temperature Control

Temperature control is about controlling the rate of combustion. When the temperature in the cremator exceeds the designed level, the remains and container burn faster, overloading the secondary chamber and providing more pollutants than can be managed.

How modern cremators control this temperature can vary, but the basic principle is the same for all units. Rates of combustion for animal cremators run anywhere from 50–500 pounds/hour, depending on whether private, individual or communal cremations are being done. Each cremator is designed for a specific combustion rate, at which the system can control the temperatures by starting and stopping based on set temperatures (1400 – 1600°F). Burners will cut back when the set temperature is reached and turn back on when the temperature goes below that, modulating to keep the temperature, and thus the rate of combustion, consistent.

If the body/cremation container ignites and burns faster than the designed burn rate, which can be seen when the temperature rises quicker than normal, the burner AND air need to be cut back BEFORE the set temperature is reached because the body/cremation container will be enough to keep the combustion going at a steady rate. Some operators control this by manually turning off the burner, some units have a “run/hold” feature, and some are automatic, where the system monitors not only temperature but also how fast the temperature rises and lowers, and adjusts the burner and air velocity accordingly.

Design Specifications and Limitations

Crematory manufacturers offer several models to meet your specific needs. When selecting a cremator, it is important to consider the following factors:

- Your actual and anticipated case load—private, individual, or communal cremations, and how many you will do each year.
- The environmental controls and local regulations that govern your facility.
- Your type of business, and whether you are geared toward small companion pets or large animals.
- The cost of the model and the income you anticipate it will generate.

Maintenance & Safety

To continue to obtain reliable performance from your cremation equipment, it is necessary to perform periodic inspections and maintenance. Keeping the cremator and ancillary equipment clean is important. Keeping mild detergent and a mild bleach solution on hand to clean surfaces will help maintain cleanliness. When dusting, be careful around wires as they may be difficult to reattach.

There are some maintenance procedures that may be performed by crematory operators and others that must be performed by trained, certified technicians. Refer to the documentation and schedules produced by your equipment manufacturer.

Replacing parts such as thermocouples and spark plugs may be safely accomplished by operators. However, more technical repairs, advanced troubleshooting or repairs in confined spaces must be handled by approved service technicians.

Here are some items that will need regular maintenance. Again, most should be done only by a service technician. In addition, be mindful of policies in place at your facility that may limit the interaction an operator has with the equipment.

Items Requiring Regular Maintenance

Clean observation port glass on door	Weekly
Clean the smoke detector lenses	Weekly if light-based system
Inspect refractory and insulation	See explanation regarding refractory inspection
Inspect all hydraulic hoses	Annually, by service technician. If you see oil on the floor, inspect and notify service provider.
Inspect & clean burner igniters (spark plugs)	Semi-annually or when crematory not operating correctly
Inspect & clean UV scanner	Semi-annually or when crematory not operating correctly
Clean the crematory	Daily; should be “camera ready” at all times
Check hydraulic fluid level and replenish as needed	Annually, by service technician
Change all thermocouples and protection tube	Only when broken
Complete Manufacturer Inspection	Every two years

Refractory Inspection

The refractory should be visually inspected before each load and the stack inspected at least monthly**.** Inspect the refractory in the:

- cremation chamber
- down-pass
- flame port
- inside the main loading door
- in the secondary combustion chamber

Follow OSHA lock-out/tag-out procedures to disconnect your unit from electrical and gas service whenever working on your machine. Have another person outside the cremation equipment to ensure that the utilities are not accidentally turned on while inspection is in progress.

Make sure the refractory brick has not fallen away, exposing any of the steel structure. The refractory in this area is a minimum of 2½ in. thick (new refractory is a minimum of 4½ in. thick). General wear or spalling of up to 2½ in. depth can be tolerated, but should be noted for future repairs. Wear or spalling beyond 2½ in. depth should be repaired as soon as possible.

When in doubt, contact your manufacturer's representative or a certified technician. Most problems may be handled over the phone, while others will require a service call. Consult the equipment vendor or refractory supplier for further instructions.

Several manufacturers offer remote monitoring services to assist the crematory operator in diagnosing problems and troubleshooting without a service call. Check with your manufacturer or service technician to determine if this service is available to you and to schedule regular service calls.

Equipment Checklist

The following equipment and supplies should be kept available at all times:

- Loading truck, cart, or device
- Rollers/guides (cardboard or wood)
- Hand tools
- Hand magnet to remove ferrous metal from cremated remains
- Stainless steel holding vessels for cremated remains
- Cleaning equipment: brushes, brooms, cleaning agents, household bleach, disposable rags, mop and bucket
- Processor (hand or automatic)
- Clean-out pans
- Heat-resistant vacuum
- Dust vent/exhaust fan

Rake

Loader

Clean-out Brush

Infant/Stillborn Pan

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Personal Protective Equipment

It is important to consider OSHA or other legal and regulatory requirements associated with work in the crematory.

Wear personal protective equipment (PPE) when handling animal remains and containers, and use Universal Precautions. This includes hand washing, gloves, a face mask or other protective gear, and bleach. Other PPE and safety items should always be available for emergency needs.

Signs Should Include:

1. Authorized Personnel Only
2. Confined Space
3. No Admittance
4. Caution! Biohazard!
5. Do Not Place Any of Your Body Under the Charging Door

Safety Items	PPE for Normal Activities	Universal Precaution Equipment	Always Available
Latex gloves	X	X	X
Leather/high temperature gloves	X		
Back support belt	X		
Particle mask		X	X
Heat reflective face shield	X		
General face shield or mask		X	
Heat reflective apron	X		
Coveralls/gown/apron		X	
Steel-toed shoes	X		
Antimicrobial wipes		X	
Safety glasses		X	
Shoe covers		X	
Hair cover		X	
Ear plugs			X
Fire extinguisher			X
First Aid Kit			X
Eye wash station/kit			X
Flashlight			X
Household bleach diluted 1:10 with water, for cleaning work surfaces			X
Emergency evacuation plan			X
Signage			X

Crematory Emissions

While cremation is rising in popularity, so is concern about crematory emissions and the related impact on the environment. Particulate matter, which may include soot, ash, and other uncombusted particles, is released into the atmosphere during a cremation, but is minimal in volume.

Visible emissions, commonly referred to as smoke, are of greatest concern to regulatory bodies and the general public. Some cremation equipment is designed with sensors to detect visible emissions and adjust the cremator to minimize such emissions.

Key tips to minimize visible emissions:

• Follow manufacturer recommendations for equipment, including regular maintenance.

• Scrutinize the contents of containers and remains that are cremated.

• Consider upgrading outdated equipment to increase retention time, turbulence, and monitor temperatures, and adjust as necessary.

Visible Emissions Stack Testing

Your manufacturer's representative is an excellent resource for information about such systems.

In 1999 CANA funded a large portion of an emissions study conducted by the U.S. EPA. The testing concluded that:

- Crematories are capable of low emission without additional pollution abatement equipment.
- Higher temperatures can increase the speed of the cremation and will increase pollution such as fuel-related emissions. This test was crucial for our industry because it proved fact versus perception and eliminated the need for costly equipment upgrades (abatement systems, filtration systems, etc.).

Based on this information, the EPA decided against further regulation of crematories at the federal level.

Summary of EPA Emissions Testing Data*

Secondary Chamber Temperature (°F)	Particulate Matter (gr/ dscf)	Carbon Monoxide (ppmdv)	Visible Emissions (% opacity)	Mercury (grams per hour)	Sulfur Dioxide (ppmdv)	Nitrogen Oxides (ppmdv)
1400	0.016	1.99	1.25	0.198	8.4	106.86
1600	0.034	0.3	2.57	0.295	16.38	116.1
1800	0.068	4.95	10.83	0.0729	30.3	91.84

*Emission Test Evaluation of a Crematory at Woodlawn Cemetery in the Bronx, NY, EPA -4541R -99-049, September 1999. Copies of the full report are available from the EPA or to CANA members via the CANA website.

Environmental Protection Agency • 40 CFR Part 60/Vol 70 No 241

In guidelines issued December 16, 2005, the EPA determined that the human body should not be labeled or considered "solid waste.'' Therefore, crematories are not solid waste combustion units, and are not a subcategory of OSWI for regulation. Further, they determined that the regulatory definitions of "solid waste'' and "discarded'' found in 40 CFR part 261, therefore, do not apply to nonhazardous solid wastes. Section 129 of the CAA regulates only nonhazardous solid wastes. As described in previous Federal Register notices pertaining to the proposed and final CISWI rules (64 FR 67104, November 30, 1999 and 65 FR 75342, December 1, 2000) EPA has adopted, under the joint authority of the CAA and RCRA, a definition of solid waste that is used solely to identify nonhazardous solid waste for the regulatory programs authorized by CAA section 129, such as the final CISWI and OSWI rules. The definition of discarded cited by the commenter is not applicable to CAA section 129 rules. However, as stated in the preamble to the proposed OSWI rules, if EPA or States determine in the future that crematories should be considered for regulation, they would be addressed under other authorities.

<u>Basic EPA Guidelines – Particulate, Secondary Retention Time and Temperature</u>

- Particulate (PM_{10}) discharge limited to .1 grains per dry standard cubic foot (dscf).
    - Many States limit particulate to .08 grains/dscf.
    - 7,000 grains = 1 pound; .1 grains/dscf = .000014 pounds.
- Retention time: Best Available Control Technology (BACT), ½ second, 1 second
- Secondary temperature: BACT, 1,600°F, 1,800°F.
- By State:
    - OK, IL, IA, MN – BACT and manufacturer recommended retention time and temperature
    - KS, MO, ND – stack test values that meet particulate requirement
    - CO, MI, NJ, TX – ½ second and 1,600°F
    - NY, PA – 1-sec. and 1,800°F.

Module 3: The Cremation Process in Detail

Lesson 1: Receiving Remains

The IAOPCC recommends that cremations be done within two to five business days of receipt of body and authorization, and cremated remains be returned within two to four business days after the cremation.

Refusing to Accept Remains

There will be situations in which you should refuse to accept and/or pick up remains. Contact your manager when questions arise. The following are situations when refusing to accept remains is advisable:

- The accompanying paperwork is incomplete or questionable.
- Identification is questionable or not acceptable.

The pet remains should be handled with the utmost care and respect at all times.

Identification of Pet/Cremated Remains

When the pet remains arrive at the cremation facility with the proper authorization, the following steps should be taken:

1. Assign an ID for private and individual cremations. If barcode scanning is used, follow best practices for logging procedures.
2. Follow your internal procedures to establish identification with information such as:
   a. First and last name of pet
   b. Owner's first and last name
   c. Date of arrival at facility/how received
   d. Weight
   e. Type of cremation (private, individual, communal)
   f. Disposition of cremated remains
3. Secure the paper ID tag to the container.
4. When ready to perform cremation, remove paper ID tag from container and secure the card next to control panel on cremation unit.
5. If using a unique bar code or stainless steel disc with ID, place in the cremation chamber after insertion of body.
6. After the cremation process is complete, and the remains are retrieved individually and placed into a holding tray, attach the paper ID tag and/or disc.
7. The tag and disc must remain with the cremated remains until final disposition.

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Lesson 2: Preparation for Cremation

Refrigerated Storage Facilities

Storage facilities should be made available to handle one week of average activity. These facilities should remain locked and accessible to authorized personnel with appropriate signage. These facilities should not be in public view nor near the cremation equipment. The storage area should be cleaned regularly with a household bleach solution.

It is essential to follow manufacturer guidelines as to safe operation and maintenance.

Special Cases

<u>Small animals or exotics</u>

Cremating small pets can be particularly challenging and should be considered a special handling case. Cremated remains will be minimal. Doing everything possible to ensure the return of all recoverable remains to the family is crucial. The family should understand the special nature of the case, and full disclosure regarding the possibility of little or no remains should be clearly communicated.

Proper placement of the deceased pet remains in the primary chamber is important. Place the small pets in a specially designed infant cremation tray or stainless-steel pan widely available from your supplier. The tray will contain the cremated remains in a smaller area and improve the possibility of retrieval. The tray should not be placed directly in the path of the flame of the main burner due to the force emitted by the burner. Place the tray to the side of the direct reach of the flame and check it after 20 minutes to assure ignition and progress. If ignition has not taken place, move the tray closer to the flame, but not in its direct path. If the cremator uses floor air, then it should be off to prevent unnecessary turbulence in the primary chamber which would cause the loss of some remains. The entire cremation will likely be complete in 30–45 minutes or less depending on the size of the pet.

Medical Implants

While not normally found in pets, medical implants including pacemakers, defibrillators, and other battery powered devices should be removed prior to cremation. These devices should be removed by a Veterinarian and not by the Crematory Operator; it is recommended that proof of device removal is provided in writing, and included in the authorization form. Scanning the pet's body with a metal detector may help discover if the pet has a device and/or implants. Removal is necessary to avoid an explosion in the chamber. Such an explosion will affect the cremation and damage the equipment. If the cremator door is kept closed, an exploding device may not injure crematory personnel. No entry should be made into the cremation chamber for at least 45 minutes after the start of the cremation process in case such a device was missed in the examination. This may help protect the crematory operator from accidently being injured by a potential explosion. The common locator chip in many household pets is not a concern as it does not contain a power source; this chip is not retrievable after the cremation.

BEST PRACTICE

Ensure that proof of device removal is provided in writing and included in the cremation authorization from the veterinarian's office.

Surgical Implants

Some pets may have implants such as hip plates, pins, screws, wires, etc.

They should only be returned to the family upon request. In the case of adopted/rescued pets, the family may not be aware of any implant or metal surgical appliances, and receiving implants they were not aware of may cause them to question whether they are receiving the remains of their pet. Knowledge of implants a pet may have should be disclosed on the cremation authorization.

Infectious Diseases

The following procedures should be followed when handling animal remains where the cause of death may be attributed to infectious or contagious disease, though we should treat all animal remains as if they have infectious or contagious diseases such as ringworm and parvovirus which may harm operators or their pets if passed on:

- Handle body fluids so as to minimize exposure of personnel to sprays of droplets.
- Use disposable gloves, aprons, and other protective clothing to minimize direct skin contact with infectious fluids.
- Clean work surfaces thoroughly when activities are completed using household bleach diluted 1:10 with water.
- Perform the cremation as soon as possible.

OSHA states that remains are potentially infectious prior to, during, and even after the embalming process.

Three Ingredients for Infection

1. Presence of an infectious organism
2. The organism must have a hospitable environment in which to survive
3. Presence of a susceptible host

Scheduling Cremations

You are only to perform one cremation in the chamber at a time, unless performing a partitioned or communal cremation specifically authorized in the cremation authorization. Scheduling of cremations for the day must take several factors into consideration. The first cremation of the day, when the chamber is cool, should be a large case which would otherwise react unpredictably in a heated chamber.

If the pet's family requests to view the cremation or start the cremation, this may affect the scheduling of cremations.

Activity: Scheduling Cremations

Practice scheduling cremations based on the information we have discussed thus far.

Hot Hearth

Your case load for today includes the following cases. In which order would you cremate them, assuming you are using two (2) 750 lb. capacity hot hearth (retort) cremators?

- 69 lb. and 9lb. communal
- 7 lb. partitioned
- 11.5 lb. partitioned
- 11 lb. partitioned
- 14 lb. partitioned
- 15 lb. partitioned
- 56 lb. partitioned
- 77 lb. partitioned
- 85 lb. partitioned
- 4.5 lb. private
- 5 lb. private
- 8 lb. private
- 14 lb. private
- 15 lb. private
- 57 lb. private
- 66 lb. private

My answer:

Controlled Air Type

Using the same case load, what order would you cremate them assuming you are using a 450 lb. capacity controlled air type cremator.

My answer:

Notes from video:

_____

_____

_____

_____

Lesson 3: Cremation Process

It is important to follow established procedures each and every time you perform a cremation.

Activity: Sequence of Operation

See if you can put these steps in the correct order, by writing **1** next to the first step, **2** next to the second step, and so on.

My Answers		Correct Answers
	Cool down	
	Purge/Pre-heat	
	Sweep out	
	Scrutinize/Inspect	
	Package	
	Load	
	Process	
	Monitor	

Sequence of Operation

1. Open the charging door of the cremation unit and inspect that the cremation chamber floor is clean and ready to receive the container. Use a portable work light to assist your inspection if necessary. Upon completing the inspection, close the charging door.
2. The first step in reducing the amount of pollutants produced by the cremator is to inspect (scrutinize) the materials included with the remains and container for cremation.
3. Depending on your machine type, the first step in the actual cremation process is purging which replaces the air in the internal chambers of the cremator with fresh outside air.
4. Transport the deceased pet's remains to the cremation facility operating floor. Use caution and follow correct safety procedures when lifting heavy material.
5. Remove the ID card from the deceased pet and record the necessary information on the cremation log. If using a metal disc system, assign a pre-numbered metal ID disc for that particular cremation. Record this number on the ID card and cremation log (scan barcode/check disc).
6. Open the charging door of the cremation unit and place the metal ID disc with pet's body on the cremation chamber floor. Label and attach the ID card to the corresponding section in relation to the location of the body in the cremation chamber. Record section on cremation log.
7. Close the charging door.
8. Preheating is necessary to ensure that the temperature in the secondary chamber is high enough to combust the products of combustion from the main chamber and comply with local state/provincial temperature requirements. If the cremator is equipped with a temperature recording device, prepare the necessary paperwork accordingly.
9. Perform the cremation according to company policy and manufacturer specifications.
10. An adequate cool-down period between cremations may save refractory life, prevent premature ignition of the next case, and prevent a rate of combustion higher than the secondary chamber can handle. (Some units may not require cool-down periods. Check with your manufacturer.)
11. Completely remove all cremated remains from the main chamber and process as per your cremated remains processor instructions.

Notes:

Monitor the Cremation

Monitor the cremation process by watching temperatures and for any visible emissions.

- Do not open the charging door for at least one hour after the cremation has started. At that time, you may inspect the actual cremation process to determine if repositioning is necessary. NOTE: some cremators do not require repositioning.
- Do not leave the charging door open for any reason other than loading or unloading remains.
- During the cremation process, it may become necessary to reposition the remains. In such case, the amount of movement should be minimized. When removing the apparatus or tool used for repositioning from the cremation chamber, ensure that it is free of all matter before exiting the chamber.
- At the completion of the cremation process, open the charging door and inspect the cremated remains.
- Ensure the cremation process is complete before starting the cool-down of the cremation unit. Close charging door.
- Always follow state/provincial and OSHA requirements for crematory operator safety.

Notes:

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Lesson 4: Recovery & Processing of Remains

Recovery

After the cool-down period, open the charging door of the cremator and position the portable work light near the door opening. Again, ensure the cremation process is complete. Cremated remains should be white in appearance, if possible. In some instances, certain diseases and conditions of the body can affect the appearance of the remains (e.g. cancerous tumors, sand colic in horses). Place the recovery tray in position on the cremator. Hand tools usually provided by the manufacturer include rakes or hoes, push rods, or brooms for the manual removal of cremated remains from a cremator. Automatic removal systems, including vacuums and rotating floor apparatus, may be used.

Carefully remove the cremated remains by using a long-handled hoe into the recovery tray. Floor conditions (type of material and amount of normal wear) are a significant factor in the removal of cremated remains. Poorly maintained floors may cause the loss of up to 10% of the cremated remains in cracks or crevices in the floor. Therefore, it is imperative that the floor be maintained on a regular basis. Further, after the cremated remains have been raked or hoed into a holding container, the chamber should be swept immediately, with a long handled-broom into the recovery tray, to ensure cremated remains do not lodge in cracks or crevices.

Place or attach the bar code, ID card and metal ID disc in the recovery tray. Check the bar code or ID disc number with the number on the ID card and cremation log.

Upon completion, visually inspect the cremation chamber floor. There should be no visible remains left.

Place the recovery tray with the cremated remains into a cooling area to prepare the remains for processing and final disposition.

Notes:

Processing & Pulverization

Pulverization, the reduction of the cremated remains in size for final disposition, may be accomplished by manual or automatic equipment. Before the reduction process is started, the remains should be identified by comparing the bar code or ID disc number with the number on the ID card. Then, remains should be carefully processed and scrutinized. Place the cremated remains on a flat surface. Remove all ferrous material by using a hand magnet. Non-ferrous material must be removed by hand. Inspect the color of the bone fragments. While discoloration may result from several different causes, the primary cause is an incomplete cremation process. Any deviation from the expected white should be noted for correction.

Upon checking the cremated remains prior to processing or packaging, medical implants such as ball joints and sockets, pins, and rods may be recovered. These should be placed in suitable containers and kept from public view. If family has requested return of medical implants, these should be labeled and placed with remains separately.

After inspection of the cremated remains, they are ready for pulverization. Transfer the cremated remains into the processing unit. Accreditation Standards Chapter VII Section 2 #4 states: The method employed ensures that all bone fragments are rendered unidentifiable and no fragment exceeds 2 millimeters in length or diameter and the majority are less that 1 mm in length or diameter.

Upon completion of the pulverization process, carefully transfer the cremated remains and residue into a process recovery container.

Notes:

Temporary Containers & Packing

Once the cremated remains have been cleaned and/or processed, they should be placed in a clear plastic bag (minimum 2-millimeter thickness). The plastic bag should be secured with a lock-strap or other means of permanent sealing. Nothing else should be placed in the plastic bag. The remains should not be contaminated with metal or other objects unless specifically authorized by the authorizing agent. The ID disc may be attached to the bag or placed in the temporary receptacle according to company policy.

Before any permanent label is affixed to the temporary receptacle, check the ID disc number and the ID card, all labels, and certificates for compatibility and accuracy. Once the plastic bag is secured within the temporary receptacle or urn, any space between the cremated remains and the closure lid should be filled with shredded white paper or other suitable packing and the lid or top securely and permanently fastened. The lid or top should be made in such fashion that removal of lid after closing the container would destroy or damage the continuity of the container. Temporary containers are not reusable.

The container with proper identifying label and the cremation certificate should be placed in a corrugated box. All open seams of the box should be taped closed to prevent spillage. Another identifying label should be placed on the outside face of the box. If you are placing the temporary receptacle into a corrugated box, a permanent label should be affixed to the corrugated box. Seal the corrugated box using reinforcement tape.

Best Practice

When packing cremated remains, do not close the lid of the container or the urn until you and the receiver can independently verify the identity by name and tag number. If a family questions the identity because the tag number on the permit and medallion do not match, this will provide a defense to exonerate your crematory.

Best Practice

Weigh the cremated remains independent of the urn. When litigation questions the identity of the decedent, the plaintiff usually has the cremated remains analyzed. Some people are not above contaminating cremated remains for financial gain. This will also protect you should the funeral home use a smaller urn and discard the overage.

Best Practice

Store cremated remains in a locked cabinet if not released the day they are ready. Cremated remains must be responsibly maintained and in a durable cremated remains container. Further security is always advised. Do not release cremated remains not authorized in writing by the person with the right to control disposition of remains.

Module 4: Chain of Custody

Cremation is an irreversible, unstoppable process. Every step of the process needs to be performed in accordance with policies and procedures that have been designed to prevent errors. Critical to this is proper documentation of every phase of the process, from documentation of initially receiving the pet remains to documenting the ultimate disposition of the cremated remains, including returning the cremated remains to the authorized recipient if performed.

It is important to recognize here, as in other parts of this course, there may be some state and provincial laws governing documentation and record keeping, and every crematory operator must learn what rules and regulations specifically apply to their business. However, in addition to complying with applicable laws, it is best to always demonstrate professionalism by establishing and adhering to policies and procedures consistent with the IAOPCC's Accreditation standards and practices. The IAOPCC provides samples of documents, forms, and checklists to use as models to develop your own records and policies.

GLOSSARY

Chain of Custody

Refers to the chronological documentation of the custody, control, transfer, analysis, and disposition of remains and personal property.

Lesson 1: Documentation

The following forms may be used to document the steps in the cremation process. Some of the forms may overlap, contain redundancies and include the same information, but it is important to maintain complete, accurate, and cross-referenced records.

Forms may have different names in your crematory, and you may use fewer or additional forms. This list is not intended to be exhaustive and is rather a starting point.

- Authorization Form to Pick Up and/or Cremate
- Identification (ID) Tagging System
- Release of Cremated Remains to Authorizing Agent (Veterinarian or Owner)
- Logs (cremation, refrigeration and/or holding area, crematory maintenance, and housekeeping)

Notes:

Risk of Liability

A key thing to remember about liability risk is how small, seemingly minor lapses can have huge consequences for the operator and the facility. It is easy to think that because you have not had any problems so far you will never need to be prepared to defend your performance. However, you should be prepared to do so should the need arise.

Incomplete chain of custody documentation — Failure to complete chain of custody documentation will support a plaintiff's claim that the process itself was flawed. Complete documentation that fully documents the process from receipt to delivery is the only objective evidence you have to prove that you did the job correctly.

Inaccurate chain of custody documentation — Even when we do ensure that we have complete documentation, inaccuracies, no matter how small, can support a plaintiff's claim that the process itself was flawed. In order to have the objective evidence to support your position before a jury, the documentation must be accurate.

Established, Consistent Policies Are Important — The IAOPCC Accreditation Program for international pet cremation standards and procedures have been identified and can help operators minimize risk. Implementing these policies and procedures can help, but only if the operator's performance consistently adheres to the best practices. Having the right policies and procedures in place and following them in every case without fail will help you demonstrate that your performance conforms to all relevant regulations and meets professional standards.

Documenting chain of custody is key to avoiding lawsuits for negligence in this area. Every step of the way must be recorded without exception, and the records must be archived and accessible if needed.

The IAOPCC and CANA recommend that crematory facilities make a brief description of the cremation practice, policy, and procedures at your particular facility available to the Owner/Veterinarian/Authorizing Agent upon request.

Notes:

Common Errors

Despite the importance of maintaining clear and comprehensive documentation throughout every step of the process, we consistently see facilities making the same types of easily avoided errors.

Circumstances commonly leading to errors — Even crematory operators who know how to do their jobs well can find themselves tempted to make decisions that could put them at risk. Smart people can sometimes do stupid things, especially when they are under pressure.

"It will never happen to me" — When we do our jobs right and take pride in performing well, we can start to think that there is no risk that we would ever have to explain, justify, or defend our operations. We know that we are doing everything correctly, and no one would ever have cause to question our processes. We believe the fallacy that such things happen to the other guy.

Small operations — There are a couple of risks that confront small operations. With a small staff, people often fill multiple roles and, when things are busy, it can be easy to become distracted. Also, small operations are more likely to have informal training and performance definitions, and small deviations from best practices might be overlooked.

Misinformation — Sometimes we think that we know what we need to do and how we need to do it but we are simply wrong. In this field, regulations range widely from location to location, and the policies and laws at one facility may have no similarity to those at others.

Deliberate failure to comply — At times, circumstances lead people to decide that compliance in a particular situation is not the top priority. When multiple tasks compete for attention, we might cut corners or think that we can put something off until things aren't as busy.

We will now review best practices for policies, procedures, and documentation in the areas of receiving, tracking, and returning pet cremated remains.

As each topic area is discussed, use the tables provided to make note of key forms used at each stage.
Processes and procedures have been filled in for you.

Lesson 2: Receiving Remains

	Forms	Processes	Procedures
Receiving Remains	1. 2. 3.	There should be a defined process for receiving pet remains for cremation. It is critically important to verify and document the identity of the deceased pet and authority to cremate deceased pet.	A. Review the Cremation Authorization Form for completeness. B. Prepare the Identification (ID) Tagging System C. Ensure that the name of deceased pet and crematory are clearly marked on the container.

Once the crematory facility has taken custody, the crematory operator will determine if the cremation will be performed immediately or be placed in the holding/storage facility. Any additional administrative duties should also be performed at this time, such as assigning a cremation number and entering the deceased pet into the daily log book.

From the time the cremation facility takes custody until the cremated remains are released for final disposition, the cremation facility should employ at least two separate means of identification to ensure the integrity and identity of the pet remains are not compromised.

Authorization Form

This form contains information relative to the pet's remains delivered to the cremation facility as well as the authorization to cremate. The defining of who has the right to authorize the cremation is the Pet Owner and/or Authorized Agent (i.e., Veterinarian) signing the Authorization Form. Some states and provinces may have specific provisions for what must be included in an authorization form. Others may have no formal requirements. While you should check your local laws, the IAOPCC believes that a pet cremation authorization form should contain at least the following information:

BEST PRACTICE

The Cremation Authorization should be yours – not the Veterinarian's. The cremation authorization allows you to cremate. Therefore, the provisions should protect YOU.

A. Owner of Pet:
   a. First and last name
   b. Owner's Address and phone number
B. Full name of deceased pet to be cremated, along with:
   a. Breed and Weight
   b. Color
   c. Male or Female
   d. Date of birth, if known, or age
   e. Date of death
   f. Was cause of death from infectious or contagious disease, if known?
C. Name, address, signature, and relationship to deceased pet of the person(s) authorizing the cremation, (i.e. Owner, Veterinarian, and/or Authorizing Agent).

Notes:

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Lesson 3: Tracking Remains

Accurate identification of pet's remains is of utmost importance since identification cannot be performed once the remains have been cremated. The IAOPCC Accreditation Program's international pet cremation standards emphasizes this importance. In some facilities, bar code technologies may be used rather than, or in addition to, metal discs and or Pet ID Tagging Systems to track the steps in the cremation process. Whatever the method used, accuracy and consistency are crucial to successful operation.

BEST PRACTICE

Use a non-combustible ID tag that can be placed with the pet's body throughout the process. Papers get accidentally moved. Metal tags in or on the cremation container, in the cremator, recovery pan, and cremated remains container ensure identity.

You should also document requests for special handling, services such as taking a paw or nose print, a fur clipping, or any other service that would be impossible after cremation. For each pet, maintain a file which includes all documents and forms relating to the case.

Once the remains are in the custody of the crematory, it is important to track and record every step of the cremation process. In the event that there are ever any questions about a case, you will be able to demonstrate that the remains were appropriately handled at every stage. Much of this documentation will be done by your pet identification and tracking system and maintaining appropriate logs.

BEST PRACTICE

Create chain of custody documentation that will track the remains throughout the entire process: from when you first take custody of the deceased pet until they leave your control. Chain of custody documentation, including the ID tag, ensure the identity of the remains and provide objective evidence of identification post-cremation.

	Forms	Processes	Procedures
Tracking Remains Reference Section V. Records Accreditation Standards	1. 2. 3. 4. 5. 6.	Track and record every step of the cremation process once the remains are in custody of the crematory. Staff training on recording information in logs.	See log descriptions below.

Pick Up Log

A pick up log should be kept for each pet pick up for cremation.

The following information should be kept in the log:

A. Date and time of pick up
B. Location and phone number of pick up
C. Number of pets picked up for cremated remains return (communals not included on this log)
D. Pet Name and ID Tagging Method
E. Special Instructions
F. Name of the Crematory Representative picking up the deceased pet(s)
G. Client's Name (Owner, Veterinarian, and/or Authorizing Agent)

Cremation Log

A cremation log should be kept for each cremation performed.

The following information should be kept in the log:

A. Name of the deceased pet
B. Weight of deceased pet
C. Type of cremation: Private, Individual, or Communal
D. Date and time of the start of cremation
E. Date and time of the completion of the cremation
F. For private or individual cremation, identification number on metal disc, bar code stickers or other identification method
G. Cremator equipment number (if more than one)
H. Initials of cremation technician performing cremation
I. If individual cremation, section of crematory where body is located
J. Post-cremation weight of each pet that has a Private or Individual Cremation

BEST PRACTICE

Use a log that allows the operator to view the progress of multiple cases (10 to 20) on one page. Logs minimize overlooking cases that have not been cremated or released. It provides instant feedback that prompts the operator to investigate the delay. Logs also make counting monthly cases easier when ID tag numbers are not sequential.

Be sure to check your state and/or provincial laws as to any other operational data that need to be recorded, such as processing date and time, temperature during cremation, and weight of pet remains. In addition, any unusual event should also be documented such as a power outage, excessive visible emissions, or equipment malfunction.

Refrigeration/Holding Area Log

As pets remains are placed in storage prior to cremation, a refrigeration log must be maintained. The refrigeration log should include:

A. Name of the deceased pet
B. Identification tag and/or number on metal disc, bar code stickers, or other method
C. Date and time of placement in the storage facility
D. Location of the pet's remains in the facility
E. Date and time of removal from the facility for cremation

Delivery Log

A delivery log should be kept for each pet cremains delivered or returned.

<u>The following information should be kept in the log:</u>

A. Method of return
B. Date and time of return
C. Location of the return
D. Number of cremated pets returned
E. Pet Name and ID Tagging Method
F. Cremation log number of the individual pets
G. Name of crematory representative delivering the cremated pet remains
H. Name of the receiving Authorizing Agent
I. Signature or initials of receiving Authorizing Agent

Maintenance Log

A detailed description of all work including inspections, preventive maintenance, scheduled maintenance, and emergency maintenance should be documented in a maintenance log. The log should include:

A. Cremator equipment number (if more than one)
B. Time since last maintenance performed
C. Description of work performed or type of inspection
D. Name of person and company performing work
E. Disposition of debris (if any)
F. Photos of inspections or work performed

Staff must be trained in properly recording every step in the process in the appropriate log, and archives should be kept of all logs maintained.

	Forms	Processes	Procedures
Returning Remains	1. 2. 3.	When the cremated remains are ready to be returned to the appropriate person or facility, the transfer of custody away from the crematory must be documented using the required forms.	Delivery Log must contain method of return/delivery.

Mailing Cremated Remains*

Effective September 2019, the Postal Service updated its Mailing Standards of the United States Postal Service, Domestic Mail Manual (DMM) 601.12 which requires mailers to use only Priority Mail Express service when shipping cremated remains. The Postal Service will not authorize cremated remains to be sent using Registered Mail service.

In addition to creating a box specifically for cremated remains, the USPS has updated Label 139. This sticker is optional but recommended, as it is designed to increase visibility during USPS processing and transportation of packages containing cremated remains. It will ensure the package is handled with care. The cremated remains label is available for customers through the Postal Store at usps.com, enabling you to apply it prior to taking it to the post office. Either you or a USPS worker can affix this label to the outside of your package, adjacent to the shipping address.

*Use of the term CREMATED REMAINS here refers to both human and pet cremated remains. Considerations listed also apply to either the entire collected remains or smaller, divided portions thereof.

Shipping Cremated Remains

Important Considerations

- Is shipping permitted to the intended country?
- What paperwork is needed?
- Does the family fully understand the costs and risks?

Alternatives

- Shipping Services
- Airline Cargo
- Carry-on with flights

BEST PRACTICE
A benefit of the Priority Mail Express service requirement is the assurance that the package is tracked online via the USPS website.

Domestic Shipping Checklist

☑ **YES** The United States Postal Service (USPS) is the only legal method for shipping cremated remains domestically.

☒ **NO** Registered Mail is no longer acceptable for shipping cremated remains.

☒ **NO** Purveyors such as DHL, FedEx and UPS will not knowingly permit you to use their services for this purpose.

☑ **YES** Some airlines allow you to ship cremated remains as cargo or hand-carry them on flights. Not all airlines permit this, so be sure to check with your carrier in advance.

☑ **YES** Some air cargo and freight shipping services other than those listed above can transport cremated remains. They are generally more expensive than the USPS and will take longer.

International Shipping Checklist

1. Check with the consulate or embassy to verify the rules for shipping and what documentation is required.
2. Check with USPS to ensure that it is permissible to ship cremated remains to that particular country.
3. Use Priority Mail Express International and check to make sure that third-party purveyors in the recipient country accept cremated remains.

This information is provided by CANA only as an overview of the process, and not as a comprehensive documentation of all requirements. The USPS provides details on how to package and ship cremated remains here:
http://about.usps.com/publications/pub139

Notes:

Module 5: Reducing Legal Risk

While documentation of chain of custody is a key factor in reducing your legal risk, there are other areas that need to be addressed as well.

Lesson 1: Operations

To reduce legal risk, crematories need to ensure that they comply with applicable laws and regulations and practice industry best standards. Some specific operations that you will want to review are those that must meet such requirements.

Crematory Operator Requirements

Crematory operator requirements vary widely depending on where you are. You need to learn the requirements that apply in your case, and then check to ensure that the crematory operators in the crematory all meet the requirements.

Air Quality

Air quality standards must be met and it is critical that the facility is not at risk of being identified as a source of pollution. You must learn the standards that apply in your state or province, and review how the facility monitors its air quality and its history of compliance.

OSHA (Occupational Safety & Health Administration) or CCOHS (Canadian Centre for Occupational Health and Safety)

There are workplace safety concerns that are especially important to consider. Not only are workers exposed to risk because of the service they provide, but employers are also at risk, with workers handling equipment and pet remains. It is essential to be aware of and compliant with all relevant regulations. (See the appendix for links to relevant guidelines.)

> Signage — Signs need to be posted to indicate the areas of the facility that are accessible only to authorized personnel. Biohazard warnings and other cautions should be clearly posted.
>
> Procedures — Crematory operators face potential danger as part of their everyday duties. Crematory workers deal with fire, hot material, biohazards, and heavy objects. Procedures must be defined to ensure that their duties can be performed with the least possible risk to the workers.
>
> Personal Protective Equipment (PPE) — Crematory environments present health risks that must be mitigated by wearing appropriate personal protective equipment (PPE). It is critical that crematories provide PPE and require crematory operators to use it when needed. Crematory operators must comply with those requirements.

Lesson 2: Staff Training

Just because you might know what to do and the proper way to do it does not mean that you are not at risk. Unless the entire staff is properly trained **and** adheres to the established policies and procedures, the facility could still be at risk.

In the space below, write down examples of policies and procedures that might need to be added to those already in place at your workplace:

In the space below, write down examples of existing policies and procedures that might need to be changed or strengthened:

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Lesson 3: Compliance

Consequences of Failure to Comply with Regulations

We all think that it will never happen to us but we need to be prepared. You never know when you might be challenged, and if you are not prepared you might face serious consequences.

Implementation of Policies, Procedures and Training to Avoid Liability

When crematory operators recognize the challenges they might face, they become motivated to make the changes needed to be prepared. Simple changes to policies and procedures, sufficient staff training, and consistent adherence to the new standards can help you do as much as you can to avoid problems.

Unannounced Inspections

Facilities should welcome unannounced inspections by companies for whom they provide cremation services and be happy to share all aspects of their operations. Facilities should be maintained in such a manner that they are always ready for inspection.

Notes:

Lesson 4: Regulatory Investigations

Introduction

If you are in the midst of a regulatory investigation, or have already been cited, it affects the future of your business, and you need to know what you are getting into. Whether it's the Federal Trade Commission or the Department of Labor, their job is to regulate companies.

Know Your Rights

While the regulatory agency may have the right to examine some records and documents, their access is not absolute, and you need to know when to say no. You also should know that you have the right to have counsel present for interviews of management level personnel.

Retaining Counsel

One of the most important things to know is that you should retain counsel. When counsel is involved, privileges attach to protect information, correspondence, and thought processes. This is important because anything you say can and will be used against you. No privilege attaches to communications and documents you provide to the agency, and a savvy plaintiff's attorney will get access to all of those files, notes, and documents.

In addition, because you have an ongoing relationship with that agency, it is important to retain counsel, so your counsel can be the "bad cop" to your "good cop."

Regulation Process

There are several steps in the investigative process.

1. Receiving notice of the investigation
2. Request for a written response and request for production of documents
3. Informal conference with the agency
4. Notification of a citation, if there is an adverse finding

This is not the end of the process. You typically have the opportunity to negotiate a settlement and, if one cannot be reached, you can appeal the citation. Once the citations are received, the time frame to respond is very limited, so you must contact your counsel immediately.

Choosing to Settle

If you do choose to settle, be very careful about what you agree to. Settlement could increase your future fines and penalties, and could set you up for failure should a civil lawsuit be filed.

If you fight a regulatory investigation, make sure you are very informed and be very well represented. It is the future of your business.

Module 6: Wrap-Up

Take 15 minutes to read the scenarios below and answer the questions that follow.

1. You sent your driver out to pick up from a clinic that only has one entrance/exit, so all pets that are being picked up will have to be removed through the front of the clinic. Your driver completes the pick-up and heads off to the next stop. Shortly after you receive a call from an irate client of that clinic who says your driver was "just throwing the pets into the back of the van!"

   How would you handle this situation? Why?

   _____

   _____

   _____

2. Your driver has picked up a pet from one of your vet clinics. Upon arrival at the crematory, the pet was cross checked with the cremation authorization form, verified, recorded, cremated, and returned to that clinic. A few days later you receive a call from the owner of that pet who is hysterical and sobbing uncontrollably. She says that it's not her pet in that urn!

   What do you do? Why?

   _____

   _____

   _____

3. You have a client that has requested a private viewing cremation with same day service. The appointment has been scheduled for the end of the week. When the owner arrives for the appointment, he is informed that the pet was accidently cremated yesterday.

   How will you handle this situation? Why?

   _____

   _____

   _____

Appendix

Glossary of Terms

Alkaline Hydrolysis

Alkaline hydrolysis means the reduction of a dead pet body to essential elements through a water-based dissolution process using alkaline chemicals, heat, agitation, and pressure to accelerate natural decomposition, the processing of the hydrolyzed remains after removal from the alkaline hydrolysis vessel, placement of the processed remains in a hydrolyzed remains container, and release of the hydrolyzed remains to an appropriate party.

Alternative Container

See the definition of "Cremation Container"

Authorizing Agent(s)

An Authorizing Agent is a person legally entitled to control the disposition of remains.

Body parts

Limbs or other portions of the anatomy that are removed from a pet's remains for medical purposes during treatment, surgery, biopsy, autopsy, or medical research; or pet bodies or any portion of bodies that have been donated to science for medical research purposes.

BTU

British Thermal Unit: the amount of heat necessary to raise the temperature of 1 pound of water by 1°F at or near maximum density.

Burial

The interment, inurnment, or entombment of deceased pet bodies.

Burner

A device that mixes fuel and air with the introduction of flame to ignite the case, establish and maintain proper combustion of the fuel and oxygen, and maintain the temperature in the primary chamber.

After-burner/Secondary burner: A burner installed in the secondary combustion chamber or in chambers separated from the main chamber.

Primary burner: A burner installed in the primary combustion chamber to dry out and ignite the material to be burned.

Casket

A rigid container that is designed for the encasement of a pet's remains, usually constructed of wood, metal, or like materials and ornamented and lined with fabric, which may or may not be combustible.

Closed Container

Any container in which cremated remains can be placed and closed in a manner so as to provide dignity, prevent leakage or spillage of remains, and one that prevents the placing of unauthorized foreign materials.

Columbarium

A structure, room, or other space in a building or structure containing niches for permanent inurnment of cremated remains.

Combustion

The interaction of fuel with oxygen, accompanied by a well-defined flame, releasing heat.

Cremated Remains

All the remains of the cremated pet's body recovered after the completion of the cremation process, including pulverization which leaves only bone fragments reduced to consist of unidentifiable dimensions.

Cremation

The mechanical and/or thermal or other dissolution process that reduces remains to bone fragments. Cremation would include the subsequent processing and pulverization of bone fragments. Cremation may occur under any of the following methods: communal, individual, private.

Communal cremation

To cremate several pets in a cremation chamber at one time with no regard for keeping pets separated. This process allows for the co-mingling of cremated remains. No cremated remains are returned to the client.

Individual cremation

More than one pet is placed in the cremation chamber and cremated at the same time with some form of separation between pets such as trays, refractory bricks, or space; the pet's location in crematory is documented and cremated remains of pets are removed one at a time and kept separated. Each pet's individual cremated remains are returned to the client. Also referred to as partitioned or segregated cremation.

Private Cremation

Only one pet is placed in the cremation chamber and cremated, with the cremated remains returned to the client. Private cremation may include viewing of the cremation by the client.

Cremation Chamber

The enclosed space within which the cremation process takes place. Cremation chambers covered by these procedures should be used exclusively for the cremation of pet remains. The term pet remains may include tissue, limbs, and fetuses. Pet cremators should be used exclusively for the cremation of pet/animal remains.

Cremation Container

The case in which the deceased pet's body is delivered to the crematory and in which it is cremated. General recommendations for the container: Be composed of a suitable combustible material; be sturdy enough for handling ease; assure protection of the health and safety of the operator; provide proper covering for the remains. Minimum requirement of 2 millimeters.

Cremation interment container (Urn Vault)

A rigid outer container that, subject to a cemetery's rules and regulations, is composed of concrete, steel, fiberglass, plastic, or some similar material in which an urn is placed prior to being interred in the ground, and which is designed to withstand prolonged exposure to the elements and to support the earth above the urn.

Cremator

The total mechanical unit for the cremation process. Inside it is lined — top, sides, and bottom — with a heavy refractory tile or brick, with a layer of insulation between the inside surface and the outside protective housing or casing.

Crematory Authority

The legal entity or the authorized representative of the legal entity, which is licensed by the local Permitting Department to operate a crematory and perform cremations.

Crematory or Crematorium

The building that houses the cremation chamber(s). It can be a building that serves this one function or a multi-purpose building that also contains the administrative offices, preparation rooms, and/or crematory or cemetery maintenance facilities.

(Pet) Crematory Operator or (Pet) Cremationist

The individual who is authorized and permitted by the operating facility and/or Certified by the IAOPCC and/or CANA associations to operate the retort and perform the pet cremation process.

Damper

Device that regulates the draft (air flow).

Department

This refers to the state or provincial Department of Public Health or any other appropriate agency that administers pet cremation regulations.

Disinterment

The act or ceremony of extracting cremated pet remains from the earth or tomb.

Disposition

The shipment, interment, burial, or cremation of a deceased animal body or parts of a deceased body.

Draft

Air flow caused by the pressure difference between the incinerator and the outside atmosphere. Produces a continuous flow of air and products of combustion through the gas passages of the cremator to the atmosphere.

Draft Controls, dampers, linkages, etc.,

These are used to regulate air flow.

Emission

Combustion products such as smoke, soot, SO_2, etc.

Embalmer

A person who disinfects and/or preserves deceased pet bodies, entirely or in part, by the use of chemical substances, fluids, or gases ordinarily used, prepared, or intended for such purposes, either by outward application of such chemical substances, fluids, or gases on the body, or by the introduction of same into the body by vascular or hypodermic injection, or by direct application into the organs or cavities.

Embalming

Disinfecting, preparing, or preserving for final disposition of deceased pet bodies, in whole or in part, or any attempt to do so, by the use or application of chemical substances, fluids, or gases on the body, or by the introduction of the same into the body by vascular or hypodermic injection or by direct introduction into organs or cavities, or by any other method or process.

EPA

United States Environmental Protection Agency.

Excess Air

The air remaining after a fuel has been completely burned or that air supplied in addition to the quantity required for complete combustion.

Final disposition

The burial or other disposition on a permanent basis of a deceased pet's body, cremated remains, or parts thereof. Some jurisdictions consider cremation final disposition.

Flame Scanner

Sensor that detects and/or monitors proper ignition based on presence of ultra-violet rays from the flames.

Flue Gas

Gaseous products of burning fuel. May contain particulates.

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Fly Ash
Suspended particulate matter in products of combustion.

Foreign Materials
Materials that are not attributable to deceased pet's remains, any blankets, towels, collars, plastic toys, stuffed animals, etc., or any part of the container used. These materials are simultaneously removed from the cremation chamber with the cremated remains and subsequently removed prior to pulverization and disposed of as directed by Authorizing Agent in a legal and professional manner.

Funeral Establishment
A building or separate portion of a building having a specific street address and location and devoted to activities relating to the shelter, care, custody, and preparation of a deceased pet body and which may contain facilities for funeral viewing and services.

Hearth
A solid surface upon which waste material with high moisture content or liquids, or waste material which may turn to liquid before burning, is placed for drying and burning.

Heat of Combustion
Same as Heating Value.

Heat Release Rate
The amount of heat liberated during the process of complete combustion and expressed in BTU per hour per cubic foot (BTU/hr/ft^3) of the internal furnace volume in which such combustion takes place.

Heating Value
The heat released by combustion of a unit quantity of waste or fuel, usually measured in British Thermal Units (BTU).

Holding Facility
An area within or adjacent to the crematory facility designated for the retention of deceased pet remains prior to cremation that should: (1) comply with any applicable public health law; (2) preserve the dignity of the deceased pet's remains; (3) recognize the integrity, health, and safety of the Crematory Authority personnel operating the crematory; and (4) be secure from access by anyone other than authorized personnel.

Pet Remains
The body of a deceased pet, or part of a body or limb that has been removed from a living pet, including the body, part of body, or limb in any stage of decomposition.

Interment
The act of burying a deceased pet's body.

Inurnment
The act of burying an urn containing a deceased pet's cremated remains.

Legal Custody
The immediate care, charge, and control exercised by a person or an authority according to or within the law.

Niche
A compartment or cubicle for the memorialization or permanent placement of an urn containing cremated remains.

Particulates
Any solid or liquid (other than water) so small that it may be carried by the wind or suspended in air.

Pet Funeral Services & Cremation
Any pet funeral or religious service conducted in connection with, or preparatory to, the burial or cremation of a deceased pet's body. May also be referred to as a pet memorial service or celebration of life.

Primary Combustion Chamber

Chamber within a cremator where primary ignition and burning of the case occurs.

Processing

The pre-pulverization process of removing any foreign materials (non-body and container) from the cremated pet remains in preparation for pulverization.

Pulverization

The reduction of identifiable pet bone fragments after the completion of the pet cremation and processing to granulated particles (no larger than 2 millimeters per IAOPCC standards) by manual or mechanical means.

Ratio

The relation of one substance to another; in cremators, the relation of the right amount of air to the right amount of fuel is the proper air/fuel ratio.

Refractory

Special lining for the firebox to provide insulation to retain the heat and prevent it from escaping

Registered Pet Funeral Director

A funeral service professional employed as a Registered Pet Funeral Director, as defined by the IAOPCC Standards and Accreditation to practice pet funeral directing.

Scattering Area

A designated legal and approved area for the scattering of cremated remains after removing the cremated remains from their container; may also be mixed with or placed atop ground soil or ground cover.

Secondary Burner

See After-Burner.

Secondary Combustion Chamber

Chamber within a cremator where unburned combustible gases from the primary chamber are completely burned.

Stack

A vertical passage for conducting products of combustion to the atmosphere. Also called a “chimney” or “flue.”

Temporary Container

A receptacle for cremated remains usually made of cardboard, plastic, or similar material designed to hold the cremated pet remains until an urn or other permanent container is acquired.

Unique Identification Tracking System

The crematory should provide a unique identification tracking method associated with and corresponding to each deceased pet’s remains. This may be a disc, tag, or bar code which is individually imprinted with the name of the crematory facility, its city and state or province. The identification method is to accompany the pet’s remains throughout the entire cremation, processing, and pulverization processed and ultimately be attached to the pet’s cremated remains to which it was assigned.

Urn

Container in which cremated remains are placed for transport or to await final disposition at a later time. May be made of copper, tin alloy, plastic, cardboard, or unfinished wood.

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Accreditation Program for Pet Crematory Facilities

THE INTERNATIONAL ASSOCIATION OF PET CEMETERIES & CREMATORIES (IAOPCC) ANNOUNCES HISTORICAL FIRST -- AN ACCREDITATION PROGRAM FOR PET CREMATORY FACILITIES

Atlanta, Georgia – April 15, 2014 – The International Association of Pet Cemeteries and Crematories (IAOPCC) has announced a worldwide Accreditation Program for Pet Crematory facilities, the first and only Accreditation Program ever to be established for the pet aftercare industry.

Pet Parents can now feel reassured about the care their deceased animal receives now that the new worldwide Accreditation Standards have been announced for pet cemeteries and crematories by the **International Association of Pet Cemeteries and Crematories (IAOPCC).**

Founded in 1971, the **IAOPCC** is a not-for-profit organization dedicated to advancing the standards, ethics and professionalism of pet cemeteries and crematories worldwide. Recognized as the leaders of the pet aftercare industry, they have members in more than 15 countries.

In an unprecedented and historical first**,** the **IAOPCC** is the only organization with published recommended procedures for every step of the pet cremation process, including, transportation, each type of pet cremation, readily retrievable records, facility standards and continuing education for pet crematorium staff members. ***Following five years of study and research, these Accreditation standards, processes, and program of inspections were rolled out in January of 2014 across the United States, Canada, and worldwide to its Members.*** Since 2009 the **IAOPCC Standards Committee,** a group of eight pet crematory owners and operators located throughout the US and Canada, have met monthly to develop these intense and rigorous standards.

Through **the IAOPCC Accreditation Program**, pet crematories are evaluated against a pool of more than 240 standards that represent the best practices in pet cremation care and pet crematory management. An international task force of crematory operators and a veterinary professional created and continually update the standards to reflect the latest developments and improvements in pet after care, pet cremation techniques, records, cleanliness, staff and client safety, and a host of other areas essential to excellent pet and client care.

A Beloved Friends Pet Crematory of Northern Nevada, in Reno, was the first pet crematory in the United States to successfully complete this Accreditation and inspection process. They were awarded their **Accreditation status on April 1, 2014.**

In an industry requiring very little oversight, other than environmental regulations and the usual business licensing, pet aftercare has been largely a self-regulated profession. Currently there are only 2 states, New York and Illinois, in the United States that have any legal standards for pet cremation. With the introduction of the **IAOPCC Accreditation Program,** the **IAOPCC** has given the industry and the pet owner a measure of protection in the integrity of the pet aftercare processes from those pet crematories who seek out **Accreditation** and inspection.

Pet Crematories are awarded points for each standard they meet, and they must amass a certain score in order to pass the evaluation. With the **IAOPCC Accreditation**, pet owners and veterinarians can feel reassured about the care their deceased pets receive.

Contact: Donna Shugart-Bethune
Telephone: 1-800-952-5541
Email: info@iaopc.com

History of Pet Funerals & Cremation

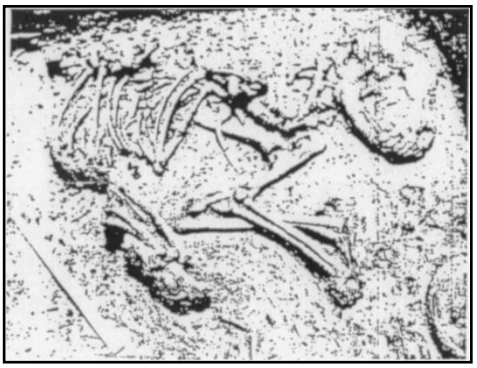
87% of all pet owners surveyed consider their pet a family member. For the other 13%, death is the end of the bond and disposition of the body does not matter. Dignified burial or cremation can play a tremendous role in the recovery process for the families with an intense bond. Death is only the beginning of a very long journey that may take days, months, or years to work through.

The ***Grief Recovery Institute*** revealed that the severity of grief is as follows:

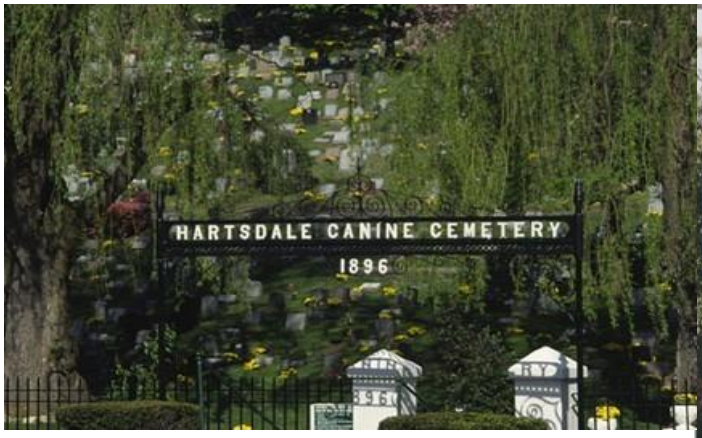
1. Loss of a spouse
2. Loss of a child
3. Loss of a parent or other family member
4. Divorce
5. Loss of a pet

If the owner was a senior citizen with no other family members left, this easily could be # 1 in their life. These figures are of course only averages and vary according to the owner/pet relationship.

Animal burials date back to pre-historic man. Early Egyptian civilization regarded both cats and dogs as god-like creatures. Their embalmed bodies have been found in tombs dating back to when the Old Testament was being written. The Koster Site in Southern Illinois indicates that dogs were buried with ritual significance as long as 7,000 years ago.



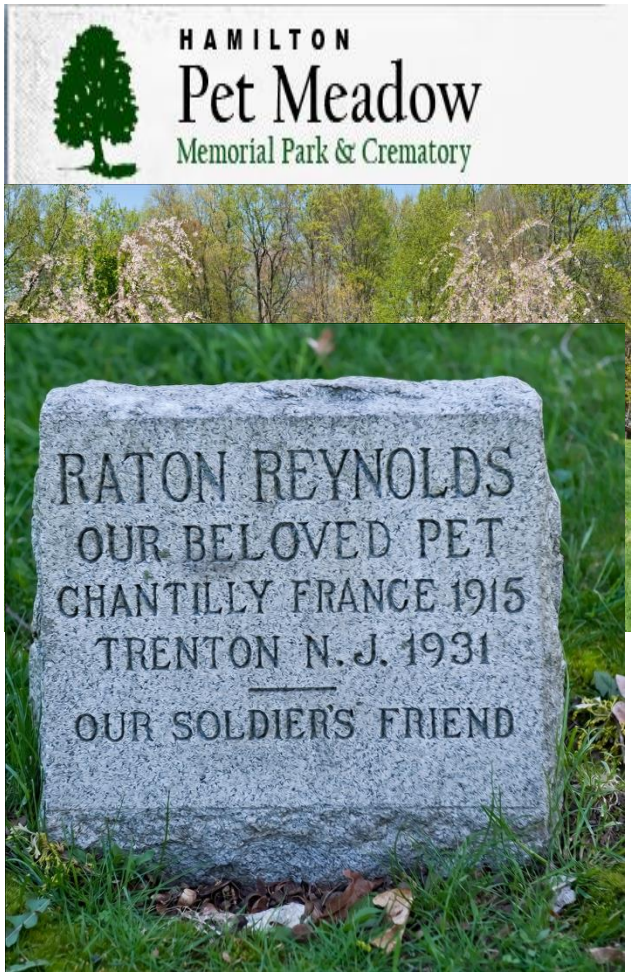
Various images from archaeological digs

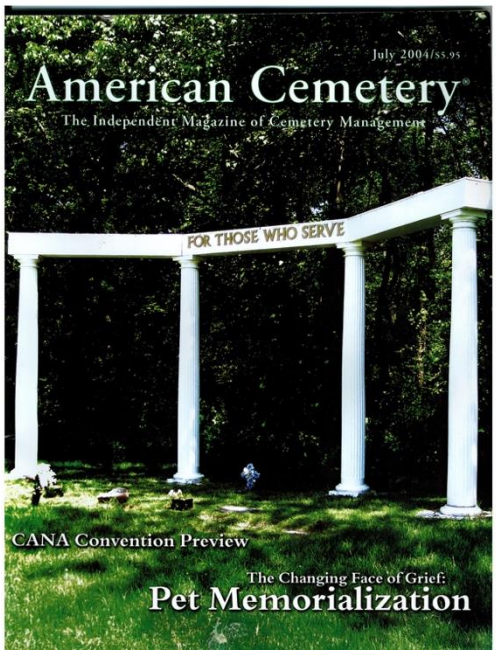


Hartsdale Canine Cemetery
Oldest Operating Pet Cemetery in America
Listed on the U.S. National Historic Registry

1899 Paris's pet cemetery:
The Cimetière Des Chiens

Although it's technically called a Cimetière des Chiens, or "cemetery of dogs," it's not limited to canine burials. In fact, in addition to the dogs buried here you'll also find graves for cats, hamsters, a lion, sheep, rabbits, birds, a horse, a monkey, chickens, mice, and even fish. There's also an entire section reserved for police dogs. In total, more than ***40,000 pets have been buried*** at the cemetery since it was opened. Like the other cemeteries that have been mentioned on the Paris Logue, the Paris dog cemetery also has some famous gravestones. Perhaps the most famous grave at the Paris pet cemetery is that of Rin Tin Tin who starred in several Hollywood films of the 1920s. Although he spent most of his life in the U.S. and died in Hollywood, he had been discovered in France originally, so was returned to Paris to be laid to rest.





Pet Meadow Memorial Park & Crematory

The July 2004 issue of *American Cemetery* featured Pet Meadow Memorial Park & Crematory, a family owned and operated pet cemetery established over 100 years ago.

America's largest pet funeral home, Deceased Pet Care Funeral Homes & Crematories, located in Atlanta, GA, has over 20,000 sq. feet of space for pet families.

APPLICATION FOR

The Doyle L. Shugart Scholarship Program

International Association of Pet Cemeteries and Crematories

The Recognized Leader in the Pet Aftercare Industry

4991 Peachtree Road
Atlanta, GA 30341
Phone: 1-800-952-5541
Fax: 770-457-8160

International Association of Pet Cemeteries and Crematories

THE DOYLE L. SHUGART SCHOLARSHIP PROGRAM

As a pioneer for more than 40 years in the pet aftercare industry, former IAOPCC President and Board Director, Doyle L. Shugart, understood the importance of the deep bond between humans and their companion animals. Doyle worked tirelessly to promote and educate others about the need for compassionate and professional aftercare services when that faithful friend passes away. Following his death in 2012, the IAOPCC dedicated its $1,000 Annual Vet Tech Scholarship Program in honor of Doyle's tremendous educational contribution to our profession. The IAOPCC is proud to present the requirements, eligibility, and evaluation process of the ***Doyle L. Shugart Scholarship Program:***

Eligibility Requirements:

The scholarship applicant will be required to be enrolled in one of the following courses:

Veterinary Technician enrolled in an accredited program

OR

Veterinary Student in their second year or greater of their education.

Essay Requirements:

Applicants must submit an essay of 250 to 500 words about the value of dignified and compassionate aftercare while helping pet care professionals assist their clients as they deal with the loss of their pet.

Applicant Evaluation:

All submitted essays will be evaluated by the Scholarship and Ethics Committee and two finalists will be chosen and submitted to the Board of Directors and Executive Committee for a final vote.

Scholarship Award:

After the final vote the winning essay applicant will be notified of the Board's decision and awarded the $1,000.00 scholarship. The winning essay will be printed in our *News and Views* publication after the scholarship is awarded, along with a picture of the scholarship recipient.

The Annual Scholarship award is at the sole discretion of The International Association of Pet Cemeteries and Crematories. All information and content submitted will be verified for accuracy. Any essay that does not meet qualifications will not be considered for the scholarship.

Revised: October 2012

International Association of Pet Cemeteries and Crematories

THE DOYLE L. SHUGART SCHOLARSHIP PROGRAM

Applicant Information:

Name _____

Address _____

City _____ State _____ Zip _____

Phone (_____) _____ Email _____

Date of Birth _____/_____/_____

Education Information:

Name of University or College _____

I started Veterinary School in: ❒ Fall ❒ Spring ❒ Summer Year _____

I started Veterinary Technician Program in: ❒ Fall ❒ Spring ❒ Summer Year _____

Essay Requirements:

Attach a 250 to 500 word essay on *"The Importance of Dignified Pet Aftercare to the Veterinarian and Veterinary Staff."* The essay must be typed and double spaced.

Deadline:

Application must be received by June 1 of the current application year.

Application can be faxed to the IAOPCC Home Office at 770-457-8160, or mailed to IAOPCC, 4991 Peachtree Road, Atlanta, GA 30341

The IAOPCC is not responsible for applications that are lost in the mail or not received due to fax malfunction.

Revised October 2012

OSHA and CCOHS Guidelines

Occupational Safety and Health Administration (OSHA) Guidelines
http://www.osha.gov/

Bloodborne Pathogens – 29 CFR (Code of Federal Regulations) 1910.1030

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Confined Spaces – 29 CFR (Code of Federal Regulations) 1910.146

http://www.osha.gov/Publications/osha3138.pdf

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9797

"Confined space" means a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
- Is not designed for continuous employee occupancy.

Control of hazardous energy (lockout/tagout). 29 CFR (Code of Federal Regulations) 1910.147

http://www.osha.gov/OshDoc/data_General_Facts/factsheet-lockout-tagout.pdf

http://www.osha.gov/SLTC/controlhazardousenergy/index.html

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9804

This standard covers the servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machines or equipment, or release of stored energy, could harm employees. This standard establishes minimum performance requirements for the control of such hazardous energy.

Hazcom Standard Hazard Communication – 29 CFR (Code of Federal Regulations) 1910.1200

http://www.osha.gov/dsg/hazcom/index.html

Canadian Centre for Occupational Health and Safety (CCOHS)

http://www.ccohs.ca/

Blood Borne Pathogens - http://www.ccohs.ca/oshanswers/diseases/aids/embalming_procedures.html

Confined Spaces - http://www.ccohs.ca/oshanswers/hsprograms/confinedspace_intro.html

Federal, Provincial and Territorial Jurisdictions - http://www.ccohs.ca/oshanswers/legisl/intro.html

Hazcom Standard - http://www.ccohs.ca/oshanswers/hsprograms/hazard_control.html

Answer Key

Pages 1 – 2

1. Cremated remains
2. Remains
3. Processed remains
4. Crematory authority
5. Client/authorized agent
6. Client/authorized agent
7. Cremation container
8. Cremation chamber
9. Crematory/crematorium
10. Urn
11. Private cremation
12. Communal cremation
13. Individual/partitioned/segregated cremation
14. Holding vault
15. Holding facility

Page 5

Possible answers include: Methane, propane, butane, natural gas

Page 9

4	primary combustion chamber	5	charging door
2	secondary combustion chamber	7	chimney stack
6	main burner	1	baffles
3	afterburner	8	opacity monitor

Page 16

Possible answers include: Primary burner, Secondary burner/afterburner, Stored refractory heat, Body and fat, Cremation container

Page 28

5	Cool down
3	Purge/preheat
6	Sweep out
1	Scrutinize
8	Package
2	Load
7	Process
4	Monitor

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Page 37

Receiving Remains Forms:

1. Authorization Form to Pick Up and/or cremate
2. Identification/ID Tagging System
3. Signature

Page 39

Tracking Remains Forms:

1. Pet Authorization and Identification Forms & Tags
2. Pick Up Log
3. Cremation Log
4. Refrigeration and/or Holding Area Log
5. Delivery Log
6. Maintenance log

Page 42

Returning Remains Forms:

1. Identification tags/discs/barcodes
2. Release of Cremated Remains
3. Shipping Forms

Crematory Operations Certification Test Study Guide

Match each term on the left with its definition from the right by drawing a line from the term to the definition.

1. Private cremation	the remaining bone fragments after the cremation process is completed
2. Processed remains	the dead animal remains prior to cremation
3. Crematory	the end result of pulverization (bone fragments reduced to unidentifiable dimensions)
4. Partitioned cremation	the legal entity or the authorized representative of the legal entity who conducts the cremation
5. Cremated remains	the enclosed space within which the cremation process takes place
6. Cremation chamber	the building that houses the cremator
7. Crematory authority	only one pet is placed in the cremation chamber and cremated
8. Remains	several pets are cremated in the same cremation chamber, with no regard for keeping them separated
9. Communal cremation	several pets are cremated in the same cremation chamber at one time, with some form of separation between the pets

10. Combustion is a chemical reaction where _____ combines with a fuel, giving off heat.
    a. nitrogen b. oxygen c. carbon d. sulfur

11. What are the 3 T's of combustion? Select all correct answers.
    a. time b. temperature c. thermocouple d. turbulence

12. The refractory should be visually inspected _____, and the stack should be inspected _____.
    a. refractory- monthly, stack- before each load
    b. refractory- before each load, stack- monthly

13. Which of the following Personal Protective Equipment (PPE) does not need to be worn for normal crematory operation activities, but should always be available?
    a. high temperature gloves c. heat reflective face shield
    b. ear plugs d. heat reflective apron

14. This cremator component helps ignite the cremation container.
    a. primary burner b. secondary burner c. baffle d. opacity monitor

15. This cremator component maintains the temperature in the secondary chamber.
    a. primary burner b. secondary burner c. baffle d. opacity monitor

16. This cremator component is lined with refractory and receives the fully combusted products of combustion.
    a. primary chamber b. secondary chamber c. chimney stack d. baffle

17. This cremator component is where ignition of the human remains takes place.
    a. primary chamber b. secondary chamber c. chimney stack d. baffle

18. This cremator component constricts air flow to help create turbulence.
    a. charging door b. chimney stack c. opacity monitor d. baffle

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19. A heat-sensing device found in both the primary and secondary chamber is called a _____.
    a. charge b. flame detector c. limit switch d. thermocouple

20. What is the first step that should be taken when pet remains arrive at the cremation facility?
    a. secure the paper ID tag to the cremator
    b. place the paper ID tag in the tray with the cremated remains
    c. secure the paper ID tag to the container holding the remains
    d. assign an ID

21. Storage facilities should be capable of handling up to _____ week(s) of average activity.
    a. one b. two c. three d. four

22. Small pets and exotics can be placed directly on the floor of the chamber.
    a. True b. False

23. Infectious diseases are not a concern when cremating pet remains
    a. True b. False

24. After raking cremated remains from the chamber onto the recovery tray or holding container, what should immediately be done next?
    a. sweep the chamber to remove all cremated remains from cracks or crevices in the floor
    b. place the recovery tray into a holding cabinet, or prepare them for processing
    c. close the crematory door
    d. inspect the cremated remains processor to ensure no cremated remains are present

25. When packing cremated remains, what is the most important step to take before applying any type of permanent label to the box?
    a. place in a plastic bag
    b. verify the identity of the cremated remains by name and tag number
    c. attach the ID disc to the plastic bag
    d. secure the plastic bag with a lock-strap or other permanent means

26. Documenting chain of custody completely, accurately and contemporaneously is key to avoiding lawsuits for negligence.
    a. True b. False

27. The Cremation Authorization form should be developed and owned by the veterinarian, rather than the crematory.
    a. True b. False

28. This log tracks all pets collected and brought to the crematory.
    a. cremation log b. delivery log c. pick up log

29. This log tracks all operational activities of each case, including start and end time of the cremation, location within the chamber, and post-cremation weight of pets.
    a. cremation log b. maintenance log c. pick up log

30. This log tracks the entry into and exit from the storage facility for all cases.
a. pick up log b. maintenance log c. refrigeration log

31. This log tracks the return of cremated remains to the authorizing agent.
a. cremation log b. delivery log c. pick up log

32. This log tracks inspections, repairs and other activities related to the cremator itself.
a. cremation log b. maintenance log c. refrigeration log

33. When shipping cremated remains domestically, the USPS is the only legal method.
a. True b. False

34. It is acceptable to give the cremated remains to any person who arrives to pick them up.
a. True b. False

35. Crematories are exempt from air quality standards.
a. True b. False

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