UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

INTERIM

CONSERVATION PRACTICE STANDARD

INCINERATOR

(Each)

Code 769

DEFINITION

A facility used to safely dispose of animal mortalities and other contaminated waste (i.e., culled eggs and waste associated with cleanup such as paper products and disposable gloves) from poultry, swine, or other small animal operations.

PURPOSE

This practice may be applied as a part of a resource management system to provide a method for safely disposing of small animals.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where:

- Incinerators are a component of an overall resource management system.
- Facilities are needed to safely dispose of animal mortalities.

DESIGN CRITERIA

General. All federal, state, and local laws, rules, and regulations governing waste management, pollution abatement, and health and safety shall be strictly adhered to. The owner or operator shall be responsible for securing all required permits, approvals, and registration for the operation of the incinerator in accordance with the Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution Control (APC) Rules 1200-3-9.04, prior to construction and operation, if applicable. Under certain conditions, the owner or operator of the incinerator is exempted from obtaining construction and operation permits. Exemptions apply to incinerators that have a manufacturer's rated capacity less than 500 pounds per hour or a total burner rated capacity less than 400,000 BTU per hour [APC Rule 1200-3-9-.04(d)(11)].

Emissions. The emission of air contaminants from all incinerators shall comply with all applicable rules and regulations of the Tennessee Air Pollution Control Board [APC Rule 1200-3-9-.04(2)(e)].

The required minimum incinerator capacity shall be determined using the following table or formula methods:

Type Animal	Daily Loss Factor (lb./day/animal)
Chickens:	
Broiler (4.2 lbs.)	0.0050
Laying Hens (4.5 lbs.)	0.0014
Breeding Hens (7.5 lbs.)	0.0019
Breeder, Male (11 lbs.)	0.0082
Roasters (6.5 lbs.)	0.008
Turkeys:	
Hen (14 lbs.)	0.0081
Tom, Light (24 lbs.)	0.0193
Tom, Feather (30 lbs.)	0.0286
Production	
Swine: Suckling Pigs (5 lbs.)	0.04 (per sow)

If detailed records are available, the following formula can be used to determine the Daily Loss Factor for a specific operation:

$$\frac{MW \times AM}{L} = \text{Daily Loss Factor}$$

Where:

MW = Mature Weight of the Animal (i.e., 4.2 lbs.)
AM = Average Mortality for the Life of the Animals, as a Decimal (i.e., 0.05)
L = Life of the Animals in Days (i.e., 42 Days)

Example 1 (Using Formula):

Given: 36,000 Roasters
6.5 lbs. Market Weight
8 percent Average Mortality
65 Day Flock Life

$$\text{Daily Loss Factor} = \frac{6.5 \times 0.08}{65} = 0.008 \text{lbs./day/bird}$$

Average Daily Weight of Dead Birds:
36,000 x 0.008 = 288 lbs./day

Incinerator Capacity:
Minimum 288 lbs. per loading capacity

Example 2 (Using Table Value):

Size of Swine Unit: 500 Sows (Total on Farm)

Average Daily Weight of Dead Suckling Pigs:
500 x 0.04 = 20 lbs./day

Incinerator Capacity:
Minimum 20 lbs. Per Loading Capacity

The recommended incinerator size shall be the smallest size available that will handle the required minimum capacity. More than one incinerator may be required for larger operations. Heavy mortalities at the end of a cycle may require loading the incinerator more than once a day.

Any incineration disposal of dead animals shall have a plan for collecting and disposing of the ash material remaining after incineration. The plan shall include proper ash collection and utilization on the land or disposal through a community trash disposal system. If land application is used, allow one-half acre for each 60,000 broilers, 30,000 layers, and 100 sows/hogs facility.

Electrical hookup shall be installed in accordance with standard industry practices, but in no case less than the minimum requirements of the most recent edition of the National Electrical Code. Installation must be certified by a qualified, licensed electrician. All electrical wiring shall be in conduit at the incinerator. Wherever installation could be classified as a hazardous location, specific conformance to Article 500 of the National Electrical Code shall be met.

Liquefied petroleum gas installations shall be certified in writing by a qualified state licensed Liquefied Petroleum Contractor to meet National Fire Protection Association (NFPA) Codes 54 and 58, all other state, national, and local codes, and in accordance with the manufacturer's recommendations. Other fuel sources shall meet all state and local codes for transmission of flammable or volatile fuels. For diesel-fired incinerators, a Spill Prevention, Control, and Countermeasures (SPCC) Plan shall be prepared by a registered professional engineer for any individual fuel storage tank in excess of 660 gallons or cumulative storage capacity of multiple tanks in excess of 1,320 gallons.

Materials. All materials shall have a life expectancy of ten years or more.

Location. Locate the incinerator according to the following requirements:

- At least 100 feet from any surface water course.
- At least 100 feet from any well or water source.
- At least 20 feet from any building to prevent spontaneous combustion.
- On an elevated concrete slab so that surface flow is directed away from incinerator.

CONSIDERATIONS

Consideration should be given to providing roof protection for the incinerator to extend the life of the unit. Metal roof purlins and covering shall be used to prevent spontaneous combustion from the stack. Provide water within 50 feet of incinerator for fire protection.

Consideration should be given to the use of an afterburner to further reduce odors and fumes, if the incinerator is to be installed in a sensitive area.

OPERATION AND MAINTENANCE

Incinerators shall be operated in such a manner as is necessary to prevent the emission of objectionable odors.

The incinerator shall have yearly maintenance performed, as necessary. Replace firebricks and scrape and repaint metal components, particularly the fluestock, with heat resistant outdoor paint.

In the event of catastrophic loss, follow Alabama Guidesheet 317B: Emergency Disposal of Dead Animals (http://www.ga.nrcs.usda.gov/al/ags.html).

REFERENCES

Rules of Tennessee Department of Environment and Conservation, Division of Air Pollution Control, Chapter 1200-3.
Alabama Guidesheet 317B: Emergency Disposal of Dead Animals (http://www.ga.nrcs.usda.gov/al/ags.html).
National Electric Code
National Fire Protection Association Code