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Colorado Department  
of Public Health  
and Environment

**DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**

**Hazardous Materials and Waste Management Division**

**6 CCR 1007-4**

**STATE BOARD OF HEALTH**

**Solid Waste to Energy Incineration Facilities  
(Amended July 19, 1995, effective September 30, 1995)**

Solid Waste-to Energy Incineration Facilities Regulations

SECTION 1  
ADMINISTRATIVE INFORMATION

- 1.1 Authority These regulations are promulgated pursuant to the Solid Waste-to-Energy Incineration Systems Act, Title 30, Article 20, Part 9 and Title 31, Article 15, Part 10, C.R.S. 1983.
- 1.2 Definitions as used in these regulations, unless the context otherwise requires:
- 1.2.1 "Act" means the Solid Waste-to-Energy Incineration Systems Act, Title 30, Article 20, Part 9 and Title 31, Article 15, Part 10, C.R.S. 1983.
- 1.2.2 "Amended Application" means a document which proposes modifications to an existing site or facility that constitute a substantial change in operations.
- 1.2.3 "Approved solid waste-to-energy facility" means a site or facility for which a certificate of approval from the Hazardous Materials and Waste Management Division, has been obtained if the facility is sited and operated by a county or municipality separately or by an intergovernmental agreement. For privately operated facilities not operated under contract to a county and/or municipality, an "approved solid waste-to-energy facility" means a site or facility for which a certificate of designation has been obtained pursuant to the Solid Waste Disposal Sites and Facilities Act.
- 1.2.4 "Department" means the Colorado Department of Public Health and Environment.

- 1.2.5 "Hazardous Waste" - Any solid waste included by definition in Section 25-15-101 (6) C.R.S.(1989) of the Colorado Hazardous Waste Act.
- 1.2.6 "Infectious Waste" - Waste containing pathogens or biologically active material which because of its type, concentration and quantity could present a potential hazard to human health when improperly handled, stored, processed, transported or disposed of.
- 1.2.7 "Management" - means the handling, storage, collection, transportation and disposal of solid waste.
- 1.2.8 "Municipal Solid Waste" - Solid waste from community, commercial and industrial sources that does not contain hazardous wastes as defined in Section 25-15-101 (6) C.R.S.(1989) of the Colorado Hazardous Waste Act unless otherwise regulated by the Department.
- 1.2.9 "Municipal Solid Waste-to-Energy Incineration Facility" A facility utilizing municipal solid waste as a primary or supplemental fuel for the conversion of heat into steam, electrical power, or other form of energy. The facility includes all on-site waste processing activities, support facilities, access roads, air and water pollution control and treatment systems, and any other activities resulting from municipal solid waste-to-energy incineration operations.
- 1.2.10 "Municipal Solid Waste Incinerator Ash" - means the bottom ash, flyash or air pollution control residues and other residuals of the combustion process from the operation of incinerator or energy recovery, facilities managing municipal solid waste.
- 1.2.11 "Person" - means an individual, partnership, private or municipal corporation, firm, or other association of persons.
- 1.2.12 "Processing" - the act of changing the physical or chemical properties of a waste.
- 1.2.13 "Recyclable materials" - means a type of material that is subject to reuse or recycling.

- 1.2.14 "Solid Waste" - means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other discarded materials, including solid, liquid, semisolid, or contained gaseous material resulting from industrial or commercial operations or from community activities. "Solid Waste" does not include any solid or dissolved materials in domestic sewage, or agricultural wastes, or solid or dissolved materials in irrigation return flows, or industrial discharges which are point sources subject to permits under the provisions of the "Colorado Water Quality Control Act", Title 25, Article 8, C.R.S. (1989), or materials handled at facilities licensed pursuant to the provisions of the "Radiation Control Act" Title 25, Article 11, C.R.S. (1989).
- 1.2.15 "Special Waste" any solid waste which requires special handling or disposal procedures. Special wastes include, but are not limited to: asbestos, bulk tires or other bulk materials, sludges and infectious waste.
- 1.2.16 "State Certificate of Approval" - Certificate issued by the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division.
- 1.2.17 "State Certificate of Approval Application" - A document containing an engineering design and operations report prepared in accordance with sections 2.1 through 3.1.4 of these regulations.
- 1.2.18 "Substantial change in operations - means any redesign or planned construction which the Department determines could significantly change the planned design performance of a waste-to-energy facility as originally approved, such as an increase in volume above the approved capacity, the addition of a category of wastes or other waste handling processes that have not been previously reviewed and accepted as complying with these regulations, or the selling or transferring of the facility and State Certificate of Approval to a new operator.

### 1.3 Scope

- 1.3.1 No person may operate a solid waste-to-energy facility sited and operated by a county or municipality separately or according to an

intergovernmental agreement, without first obtaining a State Certificate of Approval from the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division upon completion of the solid waste-to-energy facility application review process.

- 1.3.2 Privately operated solid waste-to-energy facilities located in the unincorporated portion of any county and not under contract to a county and/or municipality must obtain a Certificate of Designation from the board of county commissioners as required by the Solid Waste Disposal Sites and Facilities Act and outlined in Section 1.6 of the Solid Waste Disposal Sites and Facilities Regulations.
- 1.3.3 Approval by the Hazardous Materials and Waste Management Division shall not relieve the applicant of the obligation to comply with the requirements of other public agencies, including but not limited to, the Air Pollution Control Division, the Water Quality Control Division and local government permitting and zoning authorities.
- 1.3.4 The Department shall be requested in writing, by the board of county commissioners or the governing body of the municipality in which the facility is located, to begin the technical review process. Applicants are encouraged to coordinate the state and local review processes.
- 1.3.5 The construction, operation and closure of all solid waste-to-energy facilities shall comply with the designs, specifications and procedures outlined in the State Certificate of Approval application, or amended State Certificate of Approval application as approved by the Department and with the provisions of these regulations.
- 1.3.6 Technical guidelines, including specific technical factors, will be developed as necessary and issued by the Department to assist the applicant, local governments, and the public.
- 1.3.7 An amended Certificate of Approval application shall be made for a substantial change in operations as defined in Section 1.2 of these regulations, and shall be referred to the Department for review and approval before such changes shall become effective. The applicant should also investigate the local

review process for any requirements for a "substantial change" in operations.

1.3.8 In its consideration of an application, and in the exercise of its regulatory authority to assure compliance with these regulations, the Department may waive compliance with any standard in these regulations provided that:

(a) The benefits derived from meeting a standard do not bear a reasonable relationship to the economic, environmental, and energy impacts or other factors which are particular to the facility; or

(b) Such waiver is consistent with the purposes of the act and these regulations; and

(c) Such waiver is not deemed to constitute a material variation from the requirements of these regulations; and

(d) The waiver will not cause or allow the violation of any air or water quality standard.

1.3.9 A concise general statement of the Basis and Purpose for these regulations has been prepared and adopted by the Department, and is hereby incorporated into these Department regulations by reference, pursuant to the Colorado Administrative Procedures Act, Title 24-4.103, C.R.S. (1989).

## SECTION 2

2.1 Application for a State Certificate of Approval for new solid waste-to-energy incineration facilities.

2.1.1 Any person proposing to operate a solid waste-to-energy facility sited and operated by a county and/or municipality, shall make application to the Colorado Department of Public Health and Environment for a State Certificate of Approval.

2.1.2 The application for a "State Certificate of Approval" shall include five copies of the engineering design and operations report prepared in accordance with Sections 2.1 through 3.1.4. A description of the local review process must also be provided which description shall include a projected schedule for completion of the local review process.

2.1.3 Issuance of a State Certificate of Approval by the Division will be contingent upon the engineering design

and operations report and any amendments to demonstrate that the facility can achieve a design performance that will comply with all applicable criteria specified in these rules and regulations.

- 2.1.4 The Department shall approve or deny the facility within 180 days of the application being determined complete by the Department. The Department will make the determination as to whether or not the application is complete within 30 days of receipt. If the application is deemed incomplete, the Department shall notify the applicant of such deficiencies. The applicant must submit the required information within 20 days or the application will automatically be denied.

### SECTION 3

- 3.1 Application Requirements for Department review and issuance of a State Certificate of Approval. The engineering design and operations report shall include at a minimum, the following:

3.1.1 General Information

- (a) Name, address and telephone number of the owner and operator of the solid waste-to-energy facility.
- (b) Location of the site and facility giving the county and legal description of the facility, mailing address, and township, section and range to the nearest quarter quarter section.
- (c) Area of the site.
- (d) General description of the solid waste-to-energy facility.
- (e) Discussion of the facilities service area, including transportation corridors and surrounding access.
- (f) Listing of all permits or construction approvals received or applied for including:

- 1. Water Quality Permits
- 2. Air Quality Permits
- 3. Local Wastewater Treatment or other Local Permits

3.1.2 Maps and related information:

- (a) The application shall contain a topographic map which shows the names of present land owners, property boundaries, including easements, rights of way, internal access roads, and other property interests for the proposed solid waste-to-energy site and adjacent area; and a description of title, deed, liens or usage

restrictions affecting the proposed waste-to-energy facility.

(b) Other major maps and documentation shall be provided to show:

(1) The land use, zoning and population densities of the area within one mile of the proposed facility.

(2) The regional and site drainage conditions including the location of any floodplain boundaries, springs, streams, lakes, wetlands, constructed or natural drains and irrigation ditches located on the proposed site or adjacent area which could affect the site.

(3) Counties and municipalities in which the site and facility is proposed to be located.

(4) The location of barriers, fences and other similar structures.

(5) All solid waste storage and loading areas.

(6) The location of any scales and weigh stations to be used in the operation.

(7) The location, size and use of buildings and related facilities which will be used in the operation, including their horizontal and vertical dimensions.

(8) Utilities to be installed at the facility.

(c) The applicant shall submit all construction plans, cross-sections, specifications and details.

(d) The Department may request additional information if necessary to complete its review of the facility.

3.1.3 Engineering Design Information. The application shall contain a detailed description of:

(a) The waste stream including sources, general waste composition, estimated volumes of solid waste to be processed, recycled or landfilled, estimated BTU values and estimated seasonal and compositional variability of the waste stream, or, specifications, volumes and estimated BTU values for refuse derived fuel, if used in place of unprocessed solid waste.

(b) A flow chart showing the mechanical components of the system and a materials balance depicting all process variables including waste volumes, energy, ash, air and water inputs and outputs.

(c) Expected materials to be stored prior to sale, recycling or disposal, the minimum and maximum volumes and weight, minimum and maximum time frames for storage and specific plans for separation and storage of these materials and for disposal of any bulky, unmarketable or noncombustible items.

(d) The orientation, interior dimensions and specifications of the tipping floor, storage area and ingress and egress there to.

(e) The size, type, capacity and general specifications and anticipated performance of equipment for the handling, processing and storage of waste, energy recovery, air emissions control and process monitoring systems.

(f) Any water collection, storage, treatment or discharge facilities to be used in the process.

(g) Identification of sufficient support equipment to maintain operation of equipment functions.

(h) The anticipated recovery rate of marketable materials or energy.

(i) A detailed engineering description of the incinerator including:

(1) Type of incinerator and manufacturer's name and model number.

(2) Construction materials and specifications.

(3) Description of auxiliary fuel system and type of auxiliary fuel to be used.

(4) Capacity of feed charging system.

(5) Description of the combustion control system: air control, warning systems, auxiliary fuel/waste feed cutoff, waste moving/mixing system.

(6) The design and operating conditions for the proposed incinerator for the most efficient combustion of solid waste including:

A. Expected carbon monoxide (CO) level in the stack exhaust gas

B. Waste feed-rate

C. Combustion zone temperature and location and method of measurement.

D. Expected stack gas volume, flow rates and temperatures.

E. Computed residence time for waste in the combustion zone

F. Proposed waste feed cut off-limits based on identified significant operating parameters.

G. Air pollution control equipment, operations variables and normal operating ranges, methods of monitoring, and actions to be taken in the event the equipment and instruments exceed normal operating ranges.

(j) The actual or expected physical and chemical composition of the ash or residue produced by operation of the facility including moisture density relationships, particle size distribution, volume and weight of ash generated.

(k) The proposed location and method for disposal, storage or processing of the ash, scrubber residue, or quench or washwater produced by operation of the facility.

(l) A plan for disposal or processing of waste if the facility is temporarily shut down. A description of the maintenance plan, design redundancy, and plans to minimize unscheduled downtime.

(m) Utilities to be installed at the facility

(n) Plans and designs for operating and maintaining the proposed facility to prevent fires, explosions, emissions of toxic gases or other emergencies.

(o) A closure plan for decommissioning of the facility addressing removal of all unprocessed solid waste, ash, washwater or any other process residuals.

(p) Other information the Department may require including, but not limited to, calculations and drawings.

#### 3.1.4 Facility Operating Plan.

The application shall contain a facility operating plan which includes:

(a) A narrative description of the general operating plan for the proposed facility, including hours of operation, daily operational methodology, procedures for facility start-up, scheduled and unscheduled shutdown operations, including utilization of process and instrumentation controls for start-up and shutdown, anticipated throughput design capacity, and expected life of the facility.

(b) Provisions for alternative waste handling or disposal during periods when the facility is not in operation, including procedures to be followed in case of equipment breakdown, such as the use of standby equipment, extension of operating hours or arrangements for diversion of waste to other facilities.

(c) Description of procedures to be used for removal of solid waste or ash from the system in the event of mechanical system breakdown.

(d) An operational safety, fire prevention and contingency plan to minimize hazards to human health and the environment resulting from fires, explosions, or release of pollutants into the air, onto the soil or into ground or surface water.

(e) Provisions for assuring that hazardous wastes or special wastes not approved by the Department are not accepted at the facility.

(f) The number, classification and job descriptions of personnel projected to be employed at the facility when operating at full capacity.

- (g) A plan for hiring and training equipment operators and other personnel in the design and operation of the facility.
- (h) Measures to prevent hazards or nuisances from vectors, litter, odors, dust, noise or other potential sources.
- (i) An inventory and location of all facility records and as built drawings.
- (j) Provisions for providing monitoring results to the Department.

#### SECTION 4

##### 4.1 Operating Requirements

- 4.1.1 The Division shall be notified in writing of the anticipated date of initial start-up of the facility not more than 60 days nor less than 30 days prior to such date and shall be notified in writing of the actual date of commencement of start-up within 15 days after such date.
- 4.1.2 A solid waste-to-energy facility must be operated in accordance with the operating procedures specified in the approved engineering design and operations report and in the air emissions permit. Facilities incinerating solid waste not typical of municipal solid waste will be evaluated on a case-by-case basis for specific handling and combustion requirements to ensure the waste is handled and burned in a manner that minimizes possible environmental or health impacts.
- 4.1.3 Design, Construction, Operation and Monitoring of Solid Waste-to-Energy Incineration Facilities

All solid waste-to-energy incineration facilities shall be designed, constructed, operated, and monitored in compliance with all applicable requirements of the Colorado Air Pollution Prevention and Control Act, §§ 25-7-202 to 610, C.R.S., and its implementing regulations promulgated by the Air Quality Control Commission, 5 CCR 1001-1 to 22. All monitoring results shall be reported quarterly to the Department, except that upset conditions, and corrective action taken in response to the upset condition, shall be reported to the Department as soon as possible, but no later than one business day after the occurrence of the upset condition.

- 4.1.4 No hazardous waste as defined in Section 25-15-101 (6), C.R.S.(1989) of the Colorado Hazardous Regulations may be received at the solid waste-to-energy facility.
- 4.1.5 "Special Wastes" may be incinerated at solid waste-to-energy incineration facilities only with specific approval from the Hazardous Materials and Waste Management Division and the Air Pollution Control Division with the exception of asbestos which must be handled and disposed of according to Section 5 of the Colorado Regulations pertaining to Solid Waste Disposal Sites and Facilities.
- 4.1.6 Municipal solid waste must be stored inside an enclosed structure or building under negative air pressure which provides a minimum of three days storage, considering both volume (cubic yards) and weight (tons) at the installed design capacity of the combustion units. Storage of recovered or rejected, oversized and bulky non combustible material must be in accordance with the approved engineering design and operations plan for the facility.
- 4.1.7 All solid waste shall be handled in such a way as to maximize complete combustion of the waste and minimize any potential for fire, explosion, safety hazard or adverse public health effects. Adequate visual screening must be conducted to ensure removal of hazardous or other unacceptable wastes such as large bulky appliances, asbestos or "special wastes" not approved for incineration-at the facility.
- 4.1.8 Operations must be conducted in such a way as to prevent litter and nuisance conditions from occurring. Refuse should be confined to the tipping area and utilized on a first-in first-out basis.
- 4.1.9 Floors must have adequate drainage and be free of standing water.
- 4.1.10 The facility must be inspected daily or more frequently as necessary to detect problems with vectors, litter, fugitive dust, odors or equipment malfunctions, with inspection records maintained and corrective action implemented when problems are detected.

- 4.1.11 Discharge of quenching and/or scrubber water must be in compliance with all state and local water quality control regulations and sewer district requirements.
- 4.1.12 The alternative waste handling or backup disposal plan as approved in the Engineering Design and Operations report must be implemented for periods of facility shutdown.
- 4.1.13 Access to the facility must be controlled at all times to preclude unauthorized disposal.
- 4.1.14 All equipment operators and personnel shall be trained in the design and operation of the facility.
- 4.1.15 Ash shall be handled in closed conveyors and containers at the facility and shall be stored and transported in a manner to prevent leakage and dispersal.
- 4.1.16 No person shall close an approved solid waste-to-energy incineration facility without notifying the Department in writing at least 120 days prior to the closure date.
- 4.1.17 The facility shall be closed in accordance with all new applicable regulations in effect at the time of closure and with the closure plan, which if amended, must be submitted for review and approval by the Department 120 days prior to closure.
- 4.1.18 The operator of an approved municipal solid waste-to-energy facility shall notify the general public at least 60 days in advance of the proposed closure date by placing signs of suitable size at the entrance of the facility.

#### SECTION 5

5.1 The following records must be maintained by the facility and made available to the Department.

5.1.1 Operating records

(a) A daily log or an equivalent tracking system must be maintained by the facility operator to record operational information such as:

- (1) Hours of operation.
- (2) Total number of incoming vehicles using the facility.

(3) Quantities of refuse derived fuel, residential and commercial refuse received, industrial or special waste streams, and residues or recyclables shipped for disposal or recycling.

(4) Records to identify sources of the incoming waste and to support the mechanism to preclude hazardous or unacceptable wastes from entering the facility.

(5) Equipment maintenance or replacement.

(6) Variations from approved operational procedures.

(7) Inspections performed at the facility and any necessary action taken in response to them.

#### 5.1.2 Monitoring Records

(a) The operator must maintain records of all stack tests and continuous monitoring results for the facility operations, any testing of ash residues, and information regarding water discharges pursuant to city ordinances, pretreatment standards or COPDES permits.

#### 5.1.3 Personnel Training Records

#### 5.1.4 Other Records

(a) As built construction details.

(b) Contingency plans and emergency procedures.

(c) Maintenance plans and schedules

### SECTION 6

#### 6.1 Requirements for Management of Residual Ash from Solid Waste-to-Energy incineration facilities.

6.1.1 All residual ash from solid waste-to-energy facilities and associated wastewater and fugitive dust handling and disposal shall comply with all applicable laws and regulations, and with all applicable local zoning laws and ordinances.

6.1.2 Residual ash shall be dewatered to remove any free liquids prior to shipment to a disposal site in accordance with the approved engineering design and operations plan for the incineration facility.

6.1.3 Transportation of ash shall occur in equipment designed and utilized to prevent leakage, spillage or dispersion of the material during transportation.

- 6.1.4 Residual ash from solid waste-to-energy incineration facilities must either be beneficially used or reused, as defined in paragraph 6.1.5, or finally disposed in accordance with the regulations promulgated pursuant to the Solid Waste Disposal Sites and Facilities Act.
- 6.1.5 For beneficial use or reuse of residual ash from a solid waste-to-energy facility to be approved by the Department, the following must be demonstrated by the applicant:
- (a) That the waste material can meet the same specifications as alternative non-waste materials, and
  - (b) That the beneficially used waste materials will not release contaminants into the environment.