# 06-096

**Department of Environmental Protection**

**Maine Solid Waste Management Rules**

**CHAPTER 403**

**INCINERATION FACILITIES**

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Chapter 403: INCINERATION FACILITIES

**SUMMARY**: This chapter establishes the solid waste management requirements of the Department for siting, design and operation of incineration facilities. Specific requirements for incineration facility location, design, construction, operation and closure are established.

**1. Applicability.** This chapter applies to solid waste facilities which incinerate municipal solid waste and/or special wastes. In addition to other DEP licenses which may be required, a solid waste disposal facility license is required to locate, establish, construct, and operate any new incineration facility or to alter an existing incineration facility in accordance with 06-096 CMR 400 and this chapter.

Processing of solid waste into refuse derived fuel at an incineration facility is also subject to the applicable sections of 06-096 CMR 409, *Processing Facilities*.

**2. Facilities Not Subject to the Requirements of this Chapter.** The following facilities are exempt from the licensing and operating requirements of this chapter:

A. An incinerator or boiler for an institutional, commercial or industrial establishment that services exclusively that establishment.

B. Any lime kiln, cement kiln, bark and hogged fuel boiler, biomass or conventional fuel boiler, Kraft recovery boiler and sulfite process recovery boiler which combusts solid waste generated exclusively at the facility and/or which combusts wood wastes from land clearing, wood from brush or demolition debris, or tire derived fuel.

C. A boiler which combusts solid waste other than municipal solid waste and has been licensed or received approval under the fuel substitution section of 06-096 CMR 418.

D. An industrial boiler that combusts mixed paper, corrugated cardboard or office paper to generate heat, steam or electricity if:

(1) The mixed paper, corrugated cardboard or office paper would otherwise be placed in a landfill;

(2) The market value of the mixed paper, corrugated cardboard or office paper as a raw material for the manufacture of a product with recycled content is less than its value to the facility owner as a fuel supplement;

(3) The mixed paper, corrugated cardboard or office paper is combusted as a substitute for, or supplement to, fossil or biomass fuels that constitute the primary fuels combusted in the industrial boiler; and

(4) The boiler combusts no other forms of solid waste except as provided in these exemptions.

**3. Siting Standards for Incineration Facilities.** All incineration facilities licensed under this chapter must meet the siting standards of 06-096 CMR 400, section 4 and the following:

**A. Prohibited Location.** An incineration facility must not be located within the solid waste boundary of an active, inactive, or closed landfill.

**B. Set-backs.** The following set-backs must be maintained:

(1) The boundary of the waste handling area must meet the following minimum setbacks to the nearest residence in existence at the time the preapplication is filed:

(a) 500 feet if the waste handling area is enclosed within a structure; or

(b) 1,000 feet if the waste handling area is not enclosed within a structure.

(2) There must be a minimum 100-foot set-back between the waste handling area and all public roads or boundaries.

**C. Distance from Airport.** An incineration facility where putrescible waste is to be handled in an uncovered or exposed condition must not be located within 10,000 feet of any airport runway used by turbojet aircraft, or within 5,000 feet of any runway used by only piston-type aircraft.

**D. Fault Area.** An incineration facility waste handling area must not be located within 200 feet of a fault that has had displacement in Holocene time.

**E. Seismic Impact Zone.** At an incineration facility located in a seismic impact zone, all structures, including embankments must be designed to resist the maximum horizontal acceleration in bedrock for the site. Determination of resistance to seismic activity must include:

(1) Determination of expected peak ground acceleration at the facility site from the maximum probable earthquake, based on regional, local, and site specific information;

(2) Determination of site specific seismic hazards, such as soil depth, liquefaction potential, and slope stability; and

(3) Design of the facility to withstand peak ground acceleration.

**F. Unstable Areas.** An incineration facility must not overlie an unstable area.

**4. Design Standards for Incineration Facilities.** All incineration facilities licensed under this chapter must meet the following design standards:

**A.** Facility design capacity must take into account waste quantity, characteristics, BTU value and gross calorific value; variations in waste generation; equipment downtime; and availability of alternate storage, processing, or disposal capability.

**B.** Instrumentation must be provided to accurately determine the weight of incoming and outgoing materials.

**C.** Sampling capability must be designed into the facility for each waste stream required to be sampled as part of the facility monitoring program. The sampling sites must be so designed that personnel can sample safely without interfering with normal plant operations.

**D.** Areas must be provided for storage of wastes while they await incineration or disposal. Putrescible waste storage must be in an enclosed building or in covered, leakproof containers.

**E.** All incineration facilities must be designed and operated to collect, store and handle incinerator ash in enclosed buildings, or the equivalent (e.g., covered conveyors and transfer points, leakproof containers, tanks) to prevent fugitive dust emissions and to prevent direct exposure of the ash to the weather during collection, storage, and handling.

**F.** Special areas must be provided for the storage of any hazardous and non-permitted special wastes that are inadvertently delivered to the facility. Storage must be in a building or in covered leakproof containers.

**G.** All hazardous and special waste storage areas must be constructed so that they are large enough and physically and chemically compatible with the volumes and types of wastes to be stored there.

**5. Application Requirements.** Application for an incineration facility must include all information necessary to address the requirements of 06-096 CMR 400 and this chapter. If subject to 38 M.R.S.A. §1310-AA, the applicant must receive a positive determination of public benefit prior to submitting an application to license an incineration facility. The applicant must submit to the Department, on application forms provided by the Department, the following information:

**A. General Information**

(1) **Topographic Map**. The most recent full size U.S. Geological Survey topographic map (7 1/2 minute series, if available) of the area, showing the waste handling area, the facility site, the property boundary, and existing utilities and structures within 500 feet from the facility site boundary, or 1,000 feet if the waste handling area is not enclosed within a structure.

(2) **Municipal Contracts**. Evidence that no waste handling, disposal, or transportation contract with any municipality will constrain that municipality from recycling any portions of its waste consistent with the State waste management and recycling plan or with 38 M.R.S.A. §1304-B(4-A).

(3) **Disposal of Ash, By-Passed Waste and Residues**. Evidence that adequate capacity for the disposal of all ash, residues, and bypass wastes from the facility has been provided. This demonstration may be made through the submission of contracts with solid waste facilities licensed to accept these wastes and which have sufficient capacity to accept wastes from the facility for at least one year after the anticipated start of operation of the facility. Contracts are not required when the waste will be disposed in a landfill owned by the applicant.

(4) **Storage**. That storage capacity will be provided for all ash generated, including that generated during the initial start-up ash characterization period.

(5) During facility start-up, the ash may be disposed at a licensed special waste landfill after data validation and reduction, and statistical analysis, show that the ash is non-hazardous.

(6) **Survey of Protected Natural Resources**. The results of a survey of the area within 2,000 feet of the facility site showing all protected natural resources.

(7) **Operations Manual**. An operations manual prepared in accordance with section 6(A) of this chapter and addressing all of the operating requirements in section 6 of this chapter.

**B. Site Design Characteristics.** A site engineering design must be submitted as part of an application. The amount and sophistication of engineering and design required to develop a site for an incineration facility varies according to the physical characteristics of the site and the size of the facility.

(1) **Site Plan**. A detailed plan, or series of plans, with a scale of 1 inch = 100 feet, or a larger engineering scale, must clearly indicate structures, protected natural resources, roads, property boundaries, waste handling areas, residences, and water supply wells and within 300 feet of the facility site boundary. Additionally, if outdoor storage or processing is proposed, all residences within 1,000 feet of the waste handling area must be clearly indicated.

(2) **Plan Views of the Structures and Utilities**. A large scale map (construction drawings) with a scale of 1 inch = 40 feet, or a larger engineering scale, which clearly indicates any building(s), incineration unit(s), all existing and proposed utilities, waste handling areas, storm water management structures, fencing and gates. Detailed specifications are required for the incineration equipment. Other types of solid waste management functions to be incorporated at the facility must be clearly indicated on the plan view.

**C. Subsurface Investigation.** A geotechnical investigation must be conducted and must include test pit and boring logs. A geotechnical report must be submitted and must include a discussion of the investigation results, copies of all test pit and boring logs, and recommendations for the design of the facility. Plans must show all subsurface investigation locations. The discussion must describe tests performed, information on site stability, suitability for proposed foundations, earthworks, and other applicable aspects of the investigation, and the locations of significant sand and gravel aquifers.

**D. Process Design Characteristics**

(1) A general description of the facility's processing system must be submitted, including: process flow diagrams, quantity and characteristics of wastes to be received, as well as products and waste by-products to be generated. This description must be sufficiently detailed to justify the basis for the facility capacity and design.

(2) A description of the cooling and process water requirements including that which is recycled or consumed, the source(s) of water to be used, and the type(s) of treatment and disposal to be used for any wastewater.

**E. Ash Characterization, Handling, and Disposal Plan.** An Ash Characterization, Handling, and Disposal Plan shall be submitted as part of an application for an incineration facility. This plan must include a specific plan for characterizing the ash in conformance with 06-096 CMR 405, section 6 and propose plans for storing, handling, and disposing of all ash, residue(s), and leachate generated at the proposed facility.

**6. Operating Requirements.** Incineration facilities must comply with the following operating requirements. The application must address all of the following items:

**A. Operations Manual.** The operator shall prepare and maintain an operations manual of current solid waste management policies and procedures. The operations manual must describe the various solid waste management tasks to be performed, operating procedures, and safety precautions for various areas of the incineration facility and must be readily available for reference by plant personnel.

**NOTE**: The operations manual addressing the requirements of this Chapter may be part of an overall operations manual required by other Department programs provided that all solid waste management operating policies and procedures are organized in a discreet, easily identified section of the larger manual.

(1) **Application**. A copy of the operations manual must be submitted to the Department with the application for any proposed new incineration facility, or expansion to an existing facility. The operations manual provided with the application must be as complete as possible. The operations manual must be revised to reflect any changes which occur during the incinerator's licensing and construction processes. The revised operations manual must receive approval by the Department prior to commencement of operations.

(2) **Contents**. The operations manual must include the information necessary to enable supervisory and operating personnel, and persons evaluating the operation of the facility, to determine the sequence of operation, policies and procedures, monitoring, maintenance, inspection and legal requirements that must be followed for safe, orderly and environmentally sound operation on a daily and yearly basis. The manual must address all items contained in this Section.

(3) **Annual Review**. The operations manual must be reviewed annually, at a minimum, by the operator and updated as necessary.

(4) **Training**. The operator shall familiarize all personnel responsible for operation of the facility with relevant sections of the operations manual and shall document and maintain records of these training measures.

**B. Access to Facility Sites.** The operator shall provide suitable barriers or fencing and gates to limit unauthorized persons from gaining access to the facility site. The gate may be open only when an attendant or equipment operator is on duty. The gate must be closed and locked at all other times.

(1) The operator shall provide and maintain in good repair access roads at the facility site. Such access roads must be designed and constructed so that traffic will enter and exit the site safely, flow smoothly, and will not be interrupted by inclement weather.

(2) The operator shall prominently post the hours of operation and other limitations and conditions of access at the entrance to the facility.

**C. Disposal Procedures.** The operator shall have procedures in place for disposal of front-end process residue ("FEPR") and/or bypass waste. The operator shall maintain valid contracts with solid waste facilities which have approval to accept these wastes.

**D. Storage Requirements**

(1) Ash must be stored in accordance with the approved Ash Characterization, Handling, and Disposal Plan.

(2) All materials that are chemically incompatible must be stored in separate areas.

**E. Solid Waste Accepted**

(1) A Hazardous and Special Waste Handling and Exclusion Plan shall be developed and implemented as described in 06-096 CMR 400, section 9.

(2) All users of the facility shall be given a list of excluded materials. This list shall also be displayed prominently at the facility entrance.

(3) **Permitted Wastes**. An incineration facility may accept only solid wastes or special wastes as allowed by the Department in the facility's current license or as licensed under paragraph F below.

**F.** **Waste Acceptance.** Other wastes may be accepted if approved by the Department based upon the owner's/operator's demonstration that the wastes can be satisfactorily handled within the design capability of the facility or after appropriate facility modifications.

(1) Application to accept a previously unlicensed waste shall conform to the applicable requirements of 06-096 CMR 400 section 3(B)(2). The application must include the following:

(a) The name and address of the owner or operator and the generator of the waste;

(b) A description of the waste and an estimate of the volume of waste materials to be disposed;

(c) A waste characterization plan for the proposed solid wastes that conforms to the characterization requirements in 06-096 CMR 405, section 6 and the requirements of paragraphs 2 and 3 below;

(d) A report on the trial burn if required; and

(e) An evaluation of the incineration facility's ability to handle and dispose of each new waste proposed for incineration.

(2) For quantities of manufacturing or industrial wastes that are expected to exceed 300 tons per year, the evaluation of the facility's ability to handle and dispose of each of the proposed wastes must include:

(a) Sampling and analyzing the material sufficient to execute a combustion model that determines an appropriate blend rate of the material with the facility's other permitted wastes; and

(b) A trial burn that is in compliance with all Department rules and sufficient to determine if the material is acceptable for long-term incineration at the facility. This determination must include a characterization of the facility's ash and residue constituents and levels, and changes to the facility's approved ash testing program needed to adequately characterize ash constituents and levels. Prior to a trial burn, the owner/operator must receive permission from the Bureau of Air Quality Control to burn the proposed waste in compliance with the facility's air emissions license.

(3) Unless otherwise approved by the Department or specified in 06-096 CMR 405, waste characterization shall consist of a minimum of one sample for each 100 tons of waste for the first 400 tons from each source, and one sample for each 1000 tons for the appropriate parameters required in 06-096 CMR 405.

(4) The facility owner/operator shall keep records of all one-time waste acceptance decisions, that had been approved by the Department, for a minimum of one calendar year from the date of decision. Records for all wastes other than municipal solid waste accepted on an on-going basis shall be kept for the life of the facility.

(5) The nature and quantity of all special wastes shall be reported annually to the Department in the facility's annual report.

**G. Environmental Monitoring Program.** Based on the nature of the wastes incinerated, and on the facility location, design, and operation, the Department may require an incineration facility to monitor ground water, surface water, soils and/or air on a case-by-case basis.

**H. General Operations.** An incineration facility must be operated and maintained in a manner that assures it will meet its design requirements.

(1) The operation of the incineration facility must be under the overall supervision and direction of a person trained, qualified and experienced in matters of solid waste management, including combustion.

(2) The operator shall maintain a record of operational information, which must include, but not be limited to: the type and quantity of waste received and any deviations made from the approved operations manual. No deviations from the operations manual may be made without prior Department approval.

(3) The operator shall provide for routine maintenance and general cleanliness of the entire facility site.

(4) The operator shall undertake suitable measures to control dust and odors wherever and whenever necessary.

(5) The on-site population of vectors must be minimized.

**I. Fire Protection.** The operator shall prevent and control fires at the facility site by complying with at least the following:

(1) Arrange for a nearby fire department to provide emergency service whenever called; and

(2) Provide for sufficient on-site equipment such as detachable fire extinguishers, maintained in working order, for minor fires.

**J. Ash Characterization Results and Management**

(1) If characterization of the ash generated at the facility equals or exceeds any of the following allowable limits, the facility owner/operator shall notify the Department of the these results within 15 days of their receipt. This notification shall include data reduction, validation and methods and results of statistical interpretation of the analytical results. The allowable limits are:

(a) TCLP Metals - EPA Regulatory Threshold for Toxicity by Characteristic;

(b) Polychlorinated Biphenyls (PCBs) - 50 mg/kg dry weight; and

(c) Additional contaminants as determined on a case-by-case basis.

(2) If, after data reduction, validation, and statistical analysis, the ash is hazardous by characteristic, all ash generated by the facility must be handled as a hazardous waste until such time as further sampling and analysis demonstrates that the incinerator is generating non-hazardous ash.

(3) Any incineration facility which generates ash that, after data validation and reduction and prior to statistical analysis, exceeds the allowable limits of the contaminants in paragraph (1) above, for any two consecutive weekly composite sampling events shall submit a report to the Department which evaluates the incinerator operations to identify and correct the waste stream and/or process problems which may have led to the increase in parameter levels in the ash.

**K. Signs.** The operator shall post appropriate signs and other means necessary to indicate clearly where waste is to be unloaded and where any separate recycling and storage areas within the facility are located.

**L. Annual Report.** An annual report shall be prepared and submitted to the Department for review which includes at least the following information:

(1) An annual summary of the operational records and any events outside of the normally expected operations of the facility;

(2) Revisions to the operating manual, and any known proposed changes to operations;

(3) A report of minor changes to the facility site or operation not requiring departmental approval that have occurred during the reporting year. Changes handled in this manner are those that do not require licensing under minor revision or amendment provision of 06-096 CMR 400;

(4) A summary of the ash characterization results for the year, including detailed information concerning any ash characterization results that exceeded regulatory limits and the actions taken in response;

(5) A summary of the amounts and destinations of residues and ash generated by the facility and a demonstration that sufficient disposal capacity is guaranteed for the ash and all residues expected to be generated during the next year;

(6) A summary of the wastes accepted for incineration and the characterization results for these wastes;

(7) Monitoring records if ground water, surface water, soil, or other monitoring is required by the facility's solid waste license;

(8) A summary of operator training conducted during the year; and,

(9) An annual update on cost and documentation of any changes made to the financial assurance instrument in accordance with 06-096 CMR 400 section 11.

**7. Facility Closing and Closing Plan.** Approval is required to close an incineration facility. The owner or operator of the incineration facility must submit the information required below to the Department in a time frame and manner that will allow the owner or operator to meet the financial assurance requirements of 06-096 CMR 400, section 11 of these rules. At a minimum, this information must include:

A. An anticipated date for facility closure and for removal of all wastes;

B. A description of any anticipated or known contamination on the facility site and how that contamination would be monitored and/or treated;

C. The proposed use or disposition of the facility site and all of the structures and equipment from the facility;

D. The proposed closure and post-closure care actions that will be taken and their anticipated costs; and

E. Financial assurance complying with the requirements of 06-096 CMR 400(11) of these rules.

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