



ADDITIONAL TECHNICAL INFORMATION FOR PATHOLOGICAL WASTE INCINERATORS – (CREMATORIES)

The following information will be used for the technical review of a permit to install application for **pathological waste incinerators (crematories)** - both human and animal. This information is in addition to the general requirements outlined in the AQD document "Information for an Administratively Complete Permit to Install Application", Part 2 - Additional Supporting Information, Items A through F. All of the information may not be needed for each application. Also, this document may not be all inclusive. Additional information beyond that identified may be necessary to complete the technical review of any individual application. In the event a determination is made that new additional information is needed for a technical review, this document will be updated.

All referenced guidance documents are available at <http://www.deq.state.mi.us/aps> or you may contact the Permit Section at 517-373-7023.

A. Process Description

1. Provide a description of the incinerator and include a copy of any available literature. Include make, model, manufacturer's specifications, fuel type, BTU rating of primary and secondary burners, burn rate(lbs/hr), maximum charge (lbs/batch), secondary chamber minimum temperature and retention time, and volume of secondary chamber.
2. Provide a detailed description of the intended use of the incinerator including operating schedule. Be specific about the type of waste to be combusted. If the application is reviewed and the permit is issued for pathological waste, then the permittee may not burn any waste other than pathological waste. As defined in the federal Standards of Performance for New Stationary Sources, 40 CFR 60.51c, pathological waste means waste materials consisting of only human or animal remains, anatomical parts, and/or tissue; the bags/containers used to collect and transport the waste material; and animal bedding. The permit will require records of the description and weight of waste combusted to verify compliance with this permit restriction.
3. Describe the cremains/ash handling system, including the amount of cremains/ash collected, frequency, the method(s) used to prevent air emissions of collected cremains/ash, the method of transport, and the disposal location.
4. The incinerator must be equipped with a device to continuously monitor and record the temperature in the secondary combustion chamber. Describe this device.
5. The permit will prohibit combusting waste unless a minimum temperature of 1600°F and a minimum retention time of 1.0 seconds in the secondary combustion chamber are maintained. If the proposed incinerator operates with a lower temperature or shorter retention time, please provide relevant stack emission test data with the application. The AQD will review this information to determine whether the equipment is capable of operating in compliance with state rules.

B. Regulatory Discussion

The following state air pollution control regulations may be applicable. Please review these regulations carefully to determine if they apply to your process and summarize the results in the application. The Air Pollution Control Rules may be viewed and downloaded from the AQD website at: www.michigan.gov/deqair.

1. State of Michigan, Department of Environmental Quality, Act 451 of 1994, Natural Resources and Environmental Protection Act, Part 55 Air Pollution Control and the following promulgated rules:
 - a) Rule 301 specifies a process or process equipment shall not discharge visible emissions of a density greater than the most stringent of a 6-minute average of 20% opacity.

b) Rule 331, Table 31 specifies that an afterburner or approved equivalent is mandatory. Please note that AQD has no approved equivalent to date. The permit will include a particulate emission limit that is at least as stringent as 0.20 lbs/1000 lbs exhaust gas corrected to 50% excess air as specified in Rule 331, Table 31 for pathological waste incinerators.

c) Rule 901 prohibits emissions of an air contaminant in quantities that cause either a) injurious effects to human health or safety, animal life, plant life of significant economic value, or property; or b) unreasonable interference with the comfortable enjoyment of life and property. Submit the following to address this rule:

A detailed description of all odor prevention methods for all odor points, including but not limited to, roof vents for each building, waste tipping area, ash conveyor area, ash disposal area, boiler flue, trucks, truck entrances and exits, and doors and windows. Include a detailed air mass balance addressing the air flow into and out of the building from exhaust stack(s) and any other vents, and include the minimum negative pressure maintained inside the building and the number of air changes per hour. This demonstration should address how negative pressure will be maintained under all operating conditions including when the receiving doors are open, when the unit(s) is inoperable, and during high winds. Provide all assumptions, calculations, and other documentation used to develop the above.

d) Rule 911 allows the Department to request a person to submit preventative maintenance and malfunction abatement program(s) for the process, emission control system(s), and monitoring system(s).

E. Stack Parameters

Provide all assumptions, calculations, and other documentation used to derive the following:

1. Stack height and stack internal diameter.
2. Describe any rain protection devices that will be installed on the stack. Please note that the AQD requires the exhaust gases to be discharged unobstructed vertically upwards to the ambient air.
3. The exhaust gas flow rate and expected temperature, in °F.
4. The typical percentage of excess air at which the incinerator will operate, the percentage of air applied as overfire air and the percentage of air applied as underfire air.
5. The percentages of carbon dioxide, moisture, excess air, and oxygen in the exhaust gases when operating at maximum design conditions and under normal operating conditions.