



west virginia department of environmental protection

Division of Air Quality
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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

DRAFT

Application No.:	R13-2737A
Plant ID No.:	029-00063
Applicant:	Genesis Cremation Services
Facility Name:	Chester Facility
Location:	Chester, Hancock County
SIC Code:	7261
Application Type:	Modification
Received Date:	November 9, 2011
Engineer Assigned:	Roy F. Kees, P.E.
Fee Amount:	\$1,000.00
Date Received:	November 10, 2011
Complete Date:	November 15, 2011
DAQ Ad Date:	November XX, 2011
Applicant Ad Date:	November 3, 2011
Newspaper:	<i>Hancock County Courier</i>
UTM's:	Easting: 537.386 km Northing: 4496.477 km Zone: 17
Description:	Add a new animal crematory at the Chester facility.

DESCRIPTION OF PROCESS

Genesis Cremation Services proposes to install a new natural gas fired Pennram Diversified Manufacturing Corporation Model LLC50 animal crematory for use at their facility. The animal crematory is a multi-chamber unit having an average 50 lbs/hr maximum load. The primary chamber burner is rated at 350,000 BTU/hr and the secondary chamber burner is rated at 750,000 Btu/hr, for a total of 1,100,000 Btu/hr.

Control of air pollution is achieved through the design of the crematory, including its ability to operate the secondary chamber between 1600 - 1800 degrees Fahrenheit at a residence time in excess of 1.0 seconds. The design also includes fully automatic PLC based controls, independent fuel/air systems, preheated combustion air, secondary chamber temperature monitor and recorder, primary burner temperature interlock (prevents primary burner from firing prior to the secondary chamber reaching it's set point temperature) and UV continuous scanning flame detectors on burners.

SITE INSPECTION

On October 4, 2007, Tom Gribben from DAQ's Enforcement Section conducted a site inspection of the facility. The site used for the crematory is a portion of the former T.S. and T. Pottery Company. There are a few residences that are close to the site. The residences are approximately 1200 feet NE of the proposed crematory site. Directly across from these residences are additional dwellings. Due to the nature of the source and the emissions associated with the crematory, this source should not be a nuisance to the surrounding neighbors.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emission estimates from the incinerator were based on stack test data provided by the manufacturer. Table 1 shows the potential emissions from the incinerator.

Pollutant	Maximum Emission Rate	
	lb/hr	tpy
CO	0.07	0.09
NO _x	0.09	0.11
PM ₁₀	0.03	0.04
SO ₂	0.05	0.07

REGULATORY APPLICABILITY

45CSR6 - To Prevent and Control Air Pollution From Combustion of Refuse

The purpose of this rule is to prevent and control air pollution from combustion of refuse.

Particulate matter emissions from the incinerator are subject to section 4 of this rule. Section 4.1 of this rule states no person shall cause, suffer, allow or permit particulate matter to be discharged from any incinerator into the open air in excess of the quantity determined by use of the following formula:

$$\text{Emissions (lb/hr)} = F \times \text{Incinerator Capacity (tons/hr)}$$

The incinerator has a rated capacity of 50 pounds of remains per hour. In accordance with Table I: Factor, F, for Determining Maximum Allowable Particulate Emissions, the Factor F associated with this value would be

5.43. Therefore, maximum allowable PM emissions from the incinerator are as follows.

$$\text{Emissions}(lb / hr) = 5.43 \times 200 \frac{lb}{hr} \times \frac{ton}{2000lb} = 0.543 \frac{lbPM}{hr}$$

Emissions from stack test conducted on the incinerator result in an emission rate of 0.03 lb PM per hour. This emission rate is well below the allowable limit. This is the limit that will be set in the permit.

The permittee shall demonstrate compliance with this rule by limiting the number of cremations/day, and maintaining an operating temperature of a minimum 1400°F.

45CSR 13 - Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation

The purpose of this rule is to set forth the procedures for stationary source reporting, and the criteria for obtaining a permit to construct and operate a new stationary source which is not a major stationary source, to modify a non-major stationary source, to make modifications which are not major modifications to an existing major stationary source and to relocate non-major stationary sources within the state of West Virginia.

The facility is proposing to install n animal crematory at the Chester, WV facility. The proposed installation is defined as a modification in accordance with section 45CSR13-2.17. The facility has demonstrated compliance with this rule by applying for a modification permit on November 9, 2011. In addition, the permittee published a class I legal advertisement on November 3, 2011 in accordance with section 45CSR13-8.

45CSR22 - Air Quality Management Fee Program

This rule establishes a program to collect fees for certificates to operate and for permits to construct, modify or relocate sources of air pollution. Funds collected from these fees will be used to supplement the Director's budget for the purpose of maintaining an effective air quality management program.

The permittee submitted an application fee of \$1,000.00 on November 10, 2011 in accordance with section 45CSR22-3. In addition, the facility will be required to pay yearly fees in accordance with 45CSR22-4 in order to maintain a Certificate to Operate (CTO).

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

All proposed emissions are products of combustion and do not include any non-criteria pollutants.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size of the modification and the location of this facility.

MONITORING OF OPERATIONS

- Daily monitoring of the weight of remains loaded into the crematories.
- Hours of operation for the crematories.
- Monitoring of the operating temperature of the secondary chamber during crematory operation.

RECOMMENDATION TO DIRECTOR

Permit application, R13-2737A, submitted by Genesis Cremation Services, for the construction of an animal crematory at the permittee's Chester, Hancock County, WV, has been reviewed and determined to meet all applicable requirements. It is therefore, recommended for approval.

Roy F. Kees, P.E.
Engineer

Date