

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

P093269821

FACILITY: Southern Michigan Cremation Services R.O. Inc.		SRN / ID: P0932
LOCATION: 4839 Fernlee Avenue, ROYAL OAK		DISTRICT: Warren
CITY: ROYAL OAK		COUNTY: OAKLAND
CONTACT: Tom Perini , Operations Manager		ACTIVITY DATE: 10/27/2023
STAFF: Marie Reid	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled on-site inspection.		
RESOLVED COMPLAINTS:		

On October 27, 2023, I (Marie Reid, EGLE-AQD) conducted a scheduled inspection of Southern Michigan Cremation Services (SMCS) (SRN: P0932) located at 4839 Fernlee Ave, Royal Oak, MI. The purpose of this inspection was to evaluate the facility's compliance with the requirements of the Federal Clean Air Act; Article II, Air Pollution Control, Part 55 of Act 451 of 1994; and Permit to Install (PTI) number 113-18A.

Facility Description

SMCS employees three people, all of which are trained to operate the cremation units. Hours of operation are 8:00 AM – 4:30 PM M-F and 8:00 AM – 2:00 PM on Saturdays. The area surrounding Southern Michigan Cremation Services is densely populated with businesses and residential properties. The nearest residential properties are around 0.15 miles west of the facility. There are no complaints associated with this facility. The facility is a true minor for Particulate Matter (PM).

SMCS is a human crematory with four permitted cremation units. EU-CREMATORY3 & EU-CREMATORY4 are Matthews Power Pak II models manufactured in 1996. These units are run on a manual timer which is either set to 3 or 4 hours, depending on charge weight. These units are typically operated for family viewings. EU-CREMATORY5 & EU-CREMATORY6 are Keller Manufacturing KMH 1125-400 models, installed in 2021. These units have a normal cremation setting (3 hours) and an obese setting (4 hours) and are typically operated all day.

SMCS receives remains from funeral homes. These remains are kept in cremation containers (cardboard or wood) and stored in a recently installed cooler room, which can store up to approximately 25 charges. Before inserting the charge, the secondary combustion chamber is pre-heated to 1600 degrees Fahrenheit. Once pre-heated, the primary burners are ignited, and the charge is inserted into the furnace. For cremations later in the day, the operator will insert the charge and let the residual heat in the primary chamber begin the combustion process before turning on the primary burners. This method prevents the charges from igniting too quickly – which can cause smoke. I confirmed that the secondary burners are always on during cremation. After cremation, the cremains are swept into a pan transferred to the secondary processing area where they are cooled, ground into a fine dust, and packaged in an urn to be returned to the family. The processing chamber and cooling chamber control particulate emissions with a blower that draws air through filters and exhausts the air back into the in-plant environment. The filters are cleaned during periodic maintenance.

Inspection

I arrived to SMCS at 9:30 AM on October 27, 2023. I entered the lobby and met with Tom Perini, Operations Manager. I introduced myself, showed identification, and stated the purpose of the inspection. We had an opening meeting, took a tour, and reviewed records.

FG750: Emission Units EU-CREMATORY3 & EU-CREMATORY4

The facility is limited to 0.20 lb/1000 lbs of gas of PM on an hourly basis for FG750 (SC I.1). The cremation units in FG750 were not operating during the time of the inspection. I did not observe visible emissions from their stacks or fallout in the parking lot. Tom said they periodically check the stacks during cremations – primarily during the beginning of cremations – and he has not observed any visible emissions. Based on this information, an emissions test to verify compliance with the emission limit in FG750 SC I.1 has not been requested by the AQD.

The facility has a material limit of 750 lbs/charge in FG750 (SC II.2). Tom provided cremation logs from January 2023 through October 2023 which included each cremation's charge weight as required in FG750 (SC VI.3). I did not see any weight exceedances in these cremation logs. SMCS has a lift table with a built-in scale to verify charge weight (IV.3). The cremation logs also verified that the facility only burns human pathological wastes as required in FG750 (SC II.1). This also satisfies the requirement in SC VI.4, which requires the facility to record the periods of time when only pathological waste is burned in the incinerators.

The facility is restricted from combusting waste in any crematory in FG750 unless a minimum temperature of 1600 degrees Fahrenheit (deg F) is maintained in the secondary combustion chamber (SC III.1). The units in FG700 were not operating at the time of the inspection so I could not evaluate compliance of SC III.1 during this inspection. I observed that each unit in FG750 is equipped with a circular temperature chart, which is required to continuously record the temperature in the secondary combustion chamber (SC IV.2). Tom provided circle temperature charts from January 2023 through October 2023 which included the continuously recorded secondary combustion chamber temperature records during each cremation (SC VI.2 & SC VI.5). The set point on the incinerators in FG750 is 1600 deg F. I did not observe the secondary combustion chamber temperature fall below 1600 deg F at any time during cremations.

I reviewed maintenance records from January 2023 completed by IR Environmental Services (IRES) where they increased the incoming gas pressure in EU-CREMATORY3 & EU-CREMATORY4 (SC VI.6). Tom informed me that EU-CREMATORY3 & EU-CREMATORY4 both had new cremation chamber floors installed in 2023 and a visual inspection was done while they were installing the flooring and no further issues were noted. The inspection report also noted that the chart recorders were functional and calibrated to the thermocouple (SC IV.2).

During a previous inspection, conducted February 15, 2022, records indicated that the secondary combustion chamber did not maintain 1600 deg F during multiple cremations. A violation of FG750, SC III.1, SC III.2, and SC IV.1 was issued on March 21, 2022. During the following inspection, conducted December 15, 2022, records indicated that the secondary combustion chamber did not maintain 1600 deg F during multiple cremations. Another violation of FG750, SC III.1, and R 336.1910 was issued on January 6, 2023. These violations are awaiting resolution based on an annual inspection completed in FY24. During my inspection, Tom provided me records from an inspection conducted by IR Environmental Services on January 5, 2023. During this inspection, IRES found that the incoming gas pressure was too low and needed to be increased. After IRES increased the gas pressure, each machine was tested and confirmed to reach and maintain 1600 deg F in

the secondary chamber. According to temperature charts, the facility has not had issues maintaining 1600 deg F in the secondary chamber in FG750 since the incoming gas pressure was increased. Based on this information, I will be resolving the violation notices for FG750 issued on March 21, 2022, and January 6, 2023.

I observed that the crematories in FG750 were correctly labeled with the emission unit ID and flexible group ID (SC IX.1).

The facility is required to operate each incinerator in a satisfactory manner to control emissions from FG750 (SC III.2). A list of recommended operating and maintenance procedures is specified in Appendix A. I reviewed Appendix A with Tom.

FG1200: Emission Units EU-CREMATORY5 & EU-CREMATORY

The facility is limited to 0.20 lb/1000 lbs of gas of PM on an hourly basis for FG1200 (SC I.1). Both of the cremation units in FG1200 were operating during the inspection. I did not observe visible emissions coming from their stacks or fallout in the parking lot. Based on this information, an emissions test to verify compliance with the emission limit in FG1200 SC I.1 has not been requested by the AQD.

The facility has a material limit of 1200 lbs/charge in FG1200 (SC II.2). Tom provided cremation logs from January 2023 through October 2023 with each cremation's charge weight as required in FG1200 (SC VI.3). I did not see any weight exceedances in these cremation logs. SMCS has a lift table with a built-in scale to verify charge weight (IV.3). The cremation logs also verified that the facility only burns human pathological wastes as required in FG1200 (SC II.1). This also satisfies the requirement in SC VI.4, which requires the facility to record the periods of time when only pathological waste is burned in the incinerators.

The facility is restricted from combusting waste in any crematory in FG1200 unless a minimum temperature of 1600 deg F is maintained in the secondary combustion chamber (SC III.1). I observed the control panel on each emission unit. The secondary combustion chamber in EUCREMATORY5 was operating at 1658 deg F and EUCREMATORY6 was operating at 1700 deg F. I observed that each crematory's secondary combustion chamber with afterburner was operating in a satisfactory manner and was equipped with a temperature chart to record temperature in the secondary combustion chamber (SC IV.1 & SC IV.2 respectively). Tom provided circle temperature charts from January 2023 through October 2023 with the secondary combustion chamber temperature during each cremation (SC VI.2 & SC VI.5). I did not observe the secondary combustion chamber temperature fall below 1600 deg F at any time during cremations.

I reviewed maintenance reports from January, July, and October 2023 completed by IR Environmental Services (SC VI.6). In January, the incoming gas pressure was inspected. In July & October IRES completed preventative maintenance inspections of EUCREMATORY5 & EUCREMATORY6. The report included photos of cracks in the cremation chamber's floor and left sidewall caused by normal wear and tear. No significant cracks were noted. I could not observe the cremation chambers during my inspection since both units were operating. The inspection report also noted that the chart recorders were functional and calibrated to the thermocouple (SC IV.2).

During a previous inspection, conducted December 15, 2022, records indicated that the secondary combustion chamber did not maintain 1600 deg F during a cremation on

12/14/2022. A violation of FG1200, EU-CREMATORY5, SC III.1, and R 336.1910 was issued on January 6, 2023. This violation was awaiting resolution based on an annual inspection completed in FY24. According to SMCS's RVN from 1/26/2023, EU-CREMATORY5 was not properly calibrated after it was installed, which led to the gas only getting up to 1575 deg F. Tom provided me records from an inspection conducted by IRES on January 5, 2023. During this inspection, IRES increased the gas pressure and tested each machine to confirm they could reach and maintain 1600 deg F in the secondary chamber. According to temperature charts, the facility has not had issues maintaining 1600 deg F in the secondary chamber in FG1200 since the incoming gas pressure was increased and the unit was calibrated. Based on this information, I will be resolving the violation notice for FG1200 issued on January 6, 2023.

I observed that the crematories in FG750 were correctly labeled with the emission unit ID and flexible group ID (SC IX.1).

The facility is required to operate each incinerator in a satisfactory manner to control emissions from FG1200 (SC III.2). A list of recommended operating and maintenance procedures is specified in Appendix A. I reviewed Appendix A with Tom

Appendix A: Incinerator Operation and Maintenance Guidelines

1. All three employees at SMCS are trained operators and are responsible for compliance with the air pollution control requirements.
2. Grates are cleaned after every cremation so the cremains can be returned to the family.
3. Temperature charts indicate that waste is not combusted until the secondary chamber is at/above the minimum required temperature.
4. Cremation logs indicate that the incinerators are not loaded above the given loading rates provided by the manufacturer.
5. Charges are scheduled to minimize opening the primary chamber door as little as possible. Tom stated that larger charges are burned earlier in the day. The operators wait at least an hour until they open the chamber door to rearrange the cremains in the primary chamber.
6. Cremation logs show that only human pathological waste is burned at this facility.
7. Recent maintenance records show that combustion air is functional and did not need to be adjusted.
8. According to Tom, he will stand across the street and view the stacks frequently.
9. The manufacturer's manuals are located in the cremation room and this permit is located in the office, next to the cremation room.
10. Maintenance inspections are conducted by IRES about every 6 months, or as needed. Tom stated that extra thermocouples are kept on hand in case of a sudden malfunction. I suggested recording any time a thermocouple fails or a malfunction occurs while a unit is operating. Tom said they would do this if a malfunction occurred during an operation.
11. Tom confirmed that the operators properly follow the manufacture's operation and maintenance guidelines.

Conclusion

Based on the records reviewed during this inspection, the following violation notices will be resolved: FG750, SC III.1, SC III.2, and SC IV.1 issued on 3/21/2022, FG750, SC III.1, and R 336.1910 issued on 1/6/2023, and FG1200, SC III.1, and R 336.1910 issued on 1/6/2023.

Based on this inspection, Southern Michigan Cremation Services is in compliance with the evaluated rules and conditions.

NAME Mark Reid

DATE 11/16/2023

SUPERVISOR K. Kelly