SOLID WASTE ASSOCIATION OF NORTH AMERICA

8484 Georgia Avenue, Suite 230
Silver Spring, MD 20910

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Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency

REF: Docket ID No. EPA–HQ–OAR–2017–0183, Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Large Municipal Waste Combustors Voluntary Remand Response and 5-Year Review

The Solid Waste Association of North America (SWANA) appreciates the opportunity to submit comments on EPA-HQ-OAR-2017-0183, Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Large Municipal Waste Combustors (LMWCs) Voluntary Remand Response and 5-Year Review.

SWANA is an organization of 10,000 public and private sector professionals committed to advancing from solid waste management to resource management through a shared emphasis on education, advocacy, and research. For more than 60 years, SWANA has been the leading association in the solid waste management field. SWANA serves industry professionals through technical conferences, certifications, publications, and a large offering of technical training courses.

Our members include the owners and operators of the waste combustors impacted by the proposed regulations, as well as the solid waste departments that utilize these facilities. SWANA's Technical Division on Waste Conversion and Energy Recovery is made up of national subject matter experts in this field.

The comments in this letter cover several areas of concern, including the potential impacts on communities of the proposed regulations and concerns related to the process followed by EPA in developing the draft regulations.

<u>Community Impacts and Cost Implications</u>

Waste combustion facilities play an important role in a number of integrated waste management systems. Many communities depend on this critical infrastructure to process their municipal waste and to provide a local source of electricity. EPA's cost assessment does not focus on public sector facilities and does not factor in the cost and impacts to the communities that utilize the facilities.

Many communities around the US rely on Large Municipal Waste Combustors (LMWCs) for cost effective management of their post recycling municipal solid waste (MSW). These communities have invested in LMWCs to manage the MSW that cannot readily be recycled to reduce the costs and needs of landfilling, thus saving land space, reducing emissions and recovering more metals and energy.

Some of the communities that use LMWCs are located in areas such as the Northeast where landfilling MSW has been banned or severely restricted. In other areas such as Florida, building landfills may be very difficult and expensive to operate due to natural conditions including high groundwater levels or limited soil availability for daily cover. In areas such as Hawaii, transporting waste long distances is simply not practical and locating a landfill is nearly impossible. Use of LMWCs saves available land and air space while recovering metals and generating electricity and/or steam, thus offsetting fossil fuel usage and creating a net reduction in greenhouse gas emissions. The revenue generated from LMWCs often helps to support local recycling and associated waste reduction education programs.

Regions of the US where LMWCs are generally located for the reasons stated above or other reasons generally have landfill costs that are substantially higher than the US average tipping fee. EPA's economic analysis does not accurately reflect the costs on communities that utilize LWMCs. More representative cost information should be used for analysis. If the costs to meet these rule changes become excessive then communities will be forced to rely on landfills for disposal. The EPA has not considered this in the analysis.

The proposed changes impact facility owners and operators as well as the communities that utilize these LMWC facilities to accept their waste. These communities that do not own or operate LMWC, but do utilize them, will experience impacts to their future disposal costs and options. Any increase to disposal costs or the closure of a facility would have a regional impact and a cost on ratepayers. If a community that is currently utilizing a local LMWC had to find an alternative disposal location, it would have impacts on the costs to transfer and transport the waste, as well as potentially higher tipping fees. Long-haul transportation of waste may require the building of new transfer stations and investment in a long-haul trucking contract or the purchase of new vehicles, all of which have significant costs to communities that are not included in EPA's cost assessment. An increase in long-haul trucking would also increase emissions which the EPA has not modeled in its assessment.

Comment Period

SWANA previously submitted comments and made a request during the public hearing that additional time be granted to review and understand the implications of these proposed changes to the waste sector. This request for an extension to the public comment period was made by numerous other stakeholders. However, the request was denied. Sixty days is insufficient time to adequately review proposed rule changes of this magnitude and complexity. Such proposed changes push facilities, technologies, and operators into unprecedented situations, which may result in numerous unknown conditions. While some potential impacts are discussed in this letter, others remain unforeseen. Granting additional time for analysis could have resulted in a proposed regulation backed by increased stakeholder input as well as more evidence and science-based information. In addition, the proposed regulations would have benefited from EPA taking additional time to gather data and information before publication.

Failure to Complete Residual Risk Analysis

The EPA has not completed the required Residual Risk analysis; therefore, there is no analysis to support the need for these proposed changes.

The Residual Risk analysis is intended to look for gaps in societal protection and identify steps that should be taken to provide the protection of the health of individuals most impacted by the operation of LMWCs. Analysis and modeling should have been completed to determine the impacts posed on specific types of individuals to quantify the health risks. Once this analysis is completed, measures can be developed to protect those at risk. The failure to complete this required analysis limits the ability of the EPA and communities to make science-based decisions to implement precise standards based on actual data and may result in increased costs for the local residents and complexity for the operator for unknown gain. It also ignores the responsibility of the EPA as required by the Clean Air Act (CAA). This review should have been completed in conjunction with the development of these proposed rules to bring EPA fully into compliance with the CAA.

Data Gaps

The EPA has used limited data in setting the standards, as it did not collect new data or information to develop the proposed MACT standards. In the mid-2000's, the EPA underwent a process to collect data, which was then used to develop a revised MACT Floor for each required pollutant. The emission data set used for that update was used to back-calculate what the emissions levels may have been in 1995 when the original MACT Floor was determined.

We recognize the premise behind the approach, however, it has significant deficiencies and there are limitations that should be corrected. All valid data obtained should be used for the analysis. The EPA should have sought to fill data gaps in order to more accurately determine the performance from the best performing units.

The best performing LMWCs in 1995 or earlier were generally equipped with Good Combustion Control (GCC), a spray dryer absorber (SDA), and a fabric filter (baghouse) for its air pollution control (APC) equipment. Emission performance in 1995 for a specific LMWC was almost assuredly not as good as the performance from the same LMWC in 2006 even though it was using the same air pollution control equipment, and performance in 2006 was almost assuredly not as good as would be achieved today. A facility picture taken of the APC equipment would appear to be nearly the same in 1995 as it would in the later years. However, the details of the equipment and operations matters and make a difference for performance. Facility operators have learned over the years how to improve GCC and, also have better instrumentation and facility controls, so LMWCs generally operate more reliably and smoother than ever. SDAs were relatively new in the 1990's and much experience was gained learning how to more effectively slake lime and distribute the lime slurry where it is needed to maximize control, and how potentially more reagent may be used when needed. Fabric filters have likely seen some of the greatest changes, as types of bag materials in 1995 were very limited, and new technology and types of filters have been developed that increased the effectiveness of the filter cake and efficiency of the units. A certain car model of today achieves higher gas milage than the same or similar models could achieve in the past. Similarly, the APC equipment efficiency in 1995 was not the same as it was in 2006 or today. Proper adjustment in EPA's approach to determining the MACT Floor is necessary to determine the revised MACT Floor, otherwise performance in 1995 is overstated.

Details of the Proposed Regulations

Startup and shutdowns have been exempted from active monitoring with Continuous Emission Monitoring Systems (CEMS). Warmup periods when fossil fuel (generally natural gas or fuel oil) is used prepare the LMWC for combustion of MSW should not be limited in duration since there are numerous reasons why a unit may need to be prepared for operation, such as boiler thermal expansion or refractory curing. We support limiting startup, commencing when MSW is introduced to the furnace, to three hours for this transition period prior to normal operation. Similarly, shutdown when MSW is no longer actively fed to the unit may be limited to three hours or less to properly complete combustion in a controlled manner. LMWCs are naturally incentivized to also keep these periods to a minimum because little if any electricity can be generated during these intervals and the cost of combusting fossil fuels is significant. During all of these periods, no correction to 7% O_2 should be completed and the CEMS emissions should be reported as measured without correction to the standard O_2 level as has been addressed in the Commercial Industrial Solid Waste Incinerator (CISWI) rules. Reporting CEMS emissions in this manner is critical because oxygen levels cannot be adequately controlled, and the correction will artificially result in unrepresentative emissions.

A 30-day hourly rolling average should be used for all CEMS emission reporting under all conditions. This includes CO, NOx, and SO_2 pollutants as allowed under the CISWI rules. By so doing it is practical for the LMWCs to achieve compliance under all operating conditions. Malfunction periods, by definition, are not possible to predict and categorize; however, like the startup and shutdown periods, they are short and thus adequate control and protection of the community is achieved. Using a 30-day hourly rolling average allows for proper control under all conditions and would not be possible using other approaches considered.

Currently, percent removal is allowed for control demonstration for SO_2, HCl, and mercury. All of these pollutants are normally very low and it is rare for a sudden increase occurs. In the case of SO_2, feedback from the CEMS and other facility instrumentation allows a rapid adjustment in the lime slurry feed rate to address and control the emissions. SO_2 concentration also serves as a surrogate for times when the HCl emission concentration increases, thus allowing lime slurry feed rate to be adjusted for increased control. For mercury, no reliable warning system is possible. For all of these short-term events, it is important to have the percent removal standard available for an achievable emission concentration. The applicable control technology continues to function for each of these pollutants, but due to the nature of the pollutant, the facility is not able to react and respond quickly enough to fully address the emission concentration. The removal standard serves the benefit of demonstrating that the facility is doing everything within its control to maintain compliance.

There is no need for other pollutants to be monitored using the CEMS. All MACT pollutants either are continuously monitored and/or have operating parameters or surrogates that allow demonstration that facility and APC systems are all functioning properly for consistently high control of pollutants within required limits. Control of these eight pollutants and CO also serve as surrogates for all other related pollutants as well. For some other pollutants such as mercury, CEMS has been installed on one or more LMWCs but the reliability of the CEMS has been limited and/or proven to be unnecessary for compliance.

Using the average of the demonstrated performance of the top performing units maximum CEMS data is not achievable. The EPA indicated that since it did not have individual test run data for pollutants

monitored with CEMS, it looked at the peak annual values reported for these pollutants. The EPA then averaged these peak values for the top performing units and determined the required limit. A closer look at this approach would show that the average of the best performing units will result in a limit that is less than the best performing units can achieve and thus this is not an achievable limit. This is demonstrated by EPA's own analysis that the average for CO was actually higher than the current limit. On the other hand, for SO2, the average was substantially lower than the current limit and is lower than can be expected to be achieved.

The EPA has proposed more stringent CEMS reliability requirements. The new requirements essentially will require a second fully independent and redundant CEMS, and even then, the reliability cannot always be achieved all the time. The costs for these requirements and enhancements to the CEMS is not addressed in the EPA economic analysis. These requirements are not achievable.

These MACT standards need to account for testing variability that cannot be fully eliminated during compliance testing. In the past under the MACT limits small errors, inaccuracies, measurement imprecision, process variability, and biases were not significant when compared to the respective limit. The lower limit that can be reported for an emission is not zero but rather the minimum detection limit (MDL), a value greater than zero. The margin of error between compliance and an exceedance leaves no room for error or variability due to testing, process, or MSW characteristics.

All test procedures used for emission compliance have been demonstrated on LMWCs. However, when these demonstrations were completed, emission control technologies were not as effective, and the validation process was complete at emission concentrations much higher than the typical emission concentrations of today or even the proposed limits. EPA should repeat the validation process at emission concentrations representative of today to validate the test methods within the range required under these proposed limits. It is also important to note that at the time of initial validation, for dioxins and furans non-detect readings were assumed to be zero. Today, the testing procedure has been revised and the MDL levels are reported for all undetected isomers. This results in significantly increasing the total concentration relative to the proposed limit.

The proposed regulations should consider MSW variability. SWANA members are experts in handling MSW and know that MSW varies in every way imaginable; it is never the same seasonally or even by day of the week. MSW varies regionally, and with the weather. Residential waste is different from institutional waste and commercial waste. The variability of MSW will impact the ash content and moisture levels. MSW is the most highly variable fuel imaginable and material variability must be accounted for, unlike fossil or other types of fuels. Our sector does not control the content of MSW but we manage it regardless. In order to manage MSW safely and effectively, systems must have the capability and flexibility to handle the variability. LMWCs don't produce cadmium, lead, and mercury; these metals along with the sulfur and chlorine levels are already in the waste and systems must allow for them. For MACT emission concentration limits to be achievable, they must account for this variability.

CO and NOx emissions must be established by class of facility. NOx emission limits assume that Covanta's proprietary LN^{TM} technology or a form of Advanced Selective Non-Catalytic Reduction (ASNCR) can be applied to all types of units. This is not the case. Application of NOx control technologies requires injection of the reagent at a precise temperature range. If the flue gas temperature at the injection point is too low the reagent will not react with NOx adequately, control will not be achieved,

and ammonia slip may be the result. If the flue gas temperature at the injection point is too high, the reagent will actually generate more NOx emissions. Not all unit designs have a reliable injection area where temperature is consistently and uniformly within the temperature range required. The reagent will cause increased corrosion and elevated maintenance costs if it comes in contact with steam tubes in the boiler. These costs are not accounted for in EPA's economic analysis.

Refuse Derived Fuel (RDF) units as a class are all susceptible to these issues which is why SNCR was not required for these units previously and why emission concentration limits were higher. RDF units cannot achieve the proposed 110 ppmdv @ 7% O_2 limit without potential damage to the boilers. The EPA needs to apply a separate standard for RDF units and needs to further evaluate and demonstrate for all types and manufacturers of LMWC boilers that the units can achieve the proposed limits. The 30-day hourly rolling average requirements will not address these issues.

In a similar manner, RDF facilities and possibly other types of units are more subject to variability in CO emissions. This is due to the way the RDF is fed to the units, the nature of RDF and how it is combusted. An achievable limit for RDF facilities needs to allow for this greater variability which is why the existing emission limit is higher and has a longer averaging time for these types of units. The proposed limit of 110 ppmdv at 7% O_2 is not achievable. A 30-day hourly rolling average limit will help for these types of units but EPA needs to fully investigate whether such a limit would be achievable.

Much focus has been on the proposed emission guidelines, as these limits would be applicable to all existing LMWCs. These limits, particularly the proposed cadmium, NOx, dioxin/furan, and HCl limits are extremely challenging, leaving no room for error or margin. For as challenging as these proposed emission guidelines would be, the New Source Performance Standards (NSPS) limits, particularly for CO but also for metals and dioxins/furans and other pollutants, are unachievable on a continuous basis. Even a 30-day hourly rolling average would not be adequate for CEMS pollutants due to the variability noted above. While the NSPS limits are to be based upon the best performing unit, more data from that unit is necessary to be used for evaluation with statistical principles to establish the proper limits for all pollutants. Limited data points do not reflect the process variability, measurement imprecision, and uncertainty which must be accounted for in a statistically sound manner to establish an achievable limit.

SWANA appreciates the opportunity to comment. As the EPA moves forward with finalizing and implementing the regulations, SWANA requests to be part of the conversation on behalf of our 10,000 members. Should you have any questions about this letter, please contact the undersigned at koldendorf@swana.org.

Sincerely,

Kristyn Oldendorf
Director of Public Policy