SUMMARY

PROPOSED NEW SOURCE PERFORMANCE STANDARDS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS

40 CFR 60 SUBPART AAAAA

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APPLICABILITY

The proposed NSPS would apply to all new small MWC units with a capacity to combust at least 35 tpd but no more than 250 tpd of MSW. New small MWC units are defined as small MWC units that commence construction after the publication date of the NSPS proposal in the Federal Register. New small MWC units also include existing units that commence modification or reconstruction at least 6 months after the date that the NSPS is promulgated. The NSPS subcategorizes small MWC units into two classes that have different NO\textsubscript{x} limits and slightly different stack testing requirements:

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>New units located at plants with an aggregate capacity &gt; 250 tpd</td>
</tr>
<tr>
<td>II</td>
<td>New units located at plants with an aggregate capacity ≤ 250 tpd</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Municipal solid waste or municipal-type solid waste means household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).
SITING REQUIREMENTS

All new units must complete the following three requirements before commencing construction:

A. Develop a Materials Separation Plan. This plan identifies a goal and an approach for separating certain components of MSW prior to waste combustion for a given service area in order to make the separated materials available for recycling. A materials separation plan may include three items:

1. Elements such as dropoff facilities, buy-back or deposit-return incentives, curbside pickup programs, or centralized mechanical separation systems;

2. Different goals or approaches for different subareas in the service area; and

3. No materials separation activities for certain subareas or, if warranted, the entire service area.

B. Develop a Siting Analysis. This analysis addresses how your municipal waste combustion unit affects ambient air quality, visibility, soils, vegetation, and other relevant factors. This analysis can be used to determine whether the benefits of your proposed facility significantly outweigh the environmental and social costs resulting from its location and construction. This analysis must also consider other major industrial facilities near the proposed site.

C. Conduct public meetings and respond to public comments. These meetings and comment periods offer the public an opportunity to comment on both the Materials Separation Plan and Siting Analysis.
GOOD COMBUSTION PRACTICES:

OPERATOR TRAINING AND CERTIFICATION

< Applies to all units.

< A plant-specific operator training manual must be developed and available for MWC plant employees. MWC plant employees must review the plant-specific operator training manual every year. MWC plant chief facility operators, shift supervisors, and control room operators must complete the EPA or a State operator training course.

< MWC plant chief facility operators and shift supervisors must obtain an ASME (or State equivalent) operator certification.

GOOD COMBUSTION PRACTICES:

OPERATING REQUIREMENTS

< The load level of the MWC unit must be measured and must not exceed 110 percent of the maximum load level as demonstrated during the most recent dioxin/furan stack test.

< The particulate matter control device inlet flue gas temperature must be measured and must not exceed 17 °C above the maximum temperature demonstrated during the most recent dioxin/furan stack test.

< If the MWC unit uses activated carbon injection to control dioxins/furans or mercury emissions, the 8-hour block average carbon feed rate must be maintained at or above the highest average level established during the most recent dioxin/furan or mercury test.

< If the MWC unit uses activated carbon injection to control dioxins/furans or mercury emissions, the amount of carbon purchased and delivered to the MWC plant must not fall below the required quarterly usage of carbon.
NSPS EMISSION LIMITS

*Organic Emissions (measured as total dioxins/furans)*\(^{b,d}\)

< Dioxins/furans (compliance test by EPA Reference Method 23)
   All small units 13 ng/dscm total mass

< Basis for dioxins/furans standard
   All small units GCP and SD/FF/CI

*Metal Emissions*\(^{b}\)

< Cadmium (compliance test by EPA Reference Method 29)
   All small units 0.020 mg/dscm

< Lead (compliance test by EPA Reference Method 29)
   All small units 0.20 mg/dscm

< Mercury (compliance test by EPA Reference Method 29)
   All small units 0.080 mg/dscm or 85-percent reduction of potential mercury emissions

< Particulate matter (compliance test by EPA Reference Method 5)
   All small units 24 mg/dscm

< Opacity (compliance test by EPA Reference Method 9)
   All small units 10 percent

< Basis for cadmium, lead, mercury, particulate matter, and opacity standards GCP and SD/FF/CI

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\(^{b}\) All emission limits are corrected to 7 percent oxygen, dry basis.

\(^{d}\) Dioxins/furans are on a total mass basis measured as tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.
NSPS EMISSION LIMITS (Continued)

Acid Gas Emissions

< Sulfur dioxide (compliance test by CEMS)

All small units 30 ppmv or 80-percent reduction of potential sulfur dioxide emissions

< Hydrogen chloride (compliance test by EPA Reference Method 26)

All small units 25 ppmv or 95-percent reduction of potential hydrogen chloride emissions

< Basis for sulfur dioxide and hydrogen chloride standards

GCP and SD/FF/CI

< Nitrogen oxides (compliance test by CEMS)

Class I units 150 ppmv except 180 ppmv is allowed for the first year of operation

Class II units No emission limit

< Basis for nitrogen oxides standard

Class I units SNCR

Class II units No control requirement

Fugitive Ash Emissions

< Fugitive ash (compliance test by EPA Reference Method 22)

All small units Visible emissions for no more than 5 percent of the time from ash transfer systems except during maintenance and repair activities

< Basis for fugitive ash emission standard

Wet ash handling or enclosed as handling

b All emission limits are corrected to 7 percent oxygen, dry basis.
**NSPS EMISSION LIMITS (Continued)**

*CO Emissions*

Carbon monoxide must be measured using a CEMS, and the concentration in the flue gas cannot exceed the following levels:

<table>
<thead>
<tr>
<th>MWC Unit Type</th>
<th>CO Limit (ppmv)</th>
<th>Averaging Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluidized bed</td>
<td>100</td>
<td>4-hour</td>
</tr>
<tr>
<td>Mass burn rotary refractory</td>
<td>100</td>
<td>4-hour</td>
</tr>
<tr>
<td>Mass burn rotary waterwall</td>
<td>100</td>
<td>24-hour</td>
</tr>
<tr>
<td>Mass burn waterwall and refractory</td>
<td>100</td>
<td>4-hour</td>
</tr>
<tr>
<td>Mixed fuel-fired (pulverized coal/RDF)</td>
<td>150</td>
<td>4-hour</td>
</tr>
<tr>
<td>Modular starved-air and excess-air</td>
<td>50</td>
<td>4-hour</td>
</tr>
<tr>
<td>Spreader stoker, mixed fuel-fired (coal/RDF)</td>
<td>150</td>
<td>24-hour</td>
</tr>
<tr>
<td>Stoker, RDF</td>
<td>150</td>
<td>24-hour</td>
</tr>
</tbody>
</table>

- All emission limits in the table are corrected to 7 percent oxygen, dry basis.
- All averages are block averages.
## CONTINUOUS MONITORING REQUIREMENTS

<table>
<thead>
<tr>
<th>Pollutant/Operating Parameter</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>$&lt; ,$ Sulfur dioxide</td>
<td>CEMS, 24-hour daily geometric average</td>
</tr>
<tr>
<td>$&lt; ,$ Nitrogen oxides (Class I units only)</td>
<td>CEMS, 24-hour daily arithmetic mean</td>
</tr>
<tr>
<td>$&lt; ,$ Carbon monoxide</td>
<td>CEMS, 4-hour block or 24-hour daily arithmetic average, as applicable</td>
</tr>
<tr>
<td>$&lt; ,$ Opacity</td>
<td>COMS, 6-minute average and annual stack test</td>
</tr>
<tr>
<td>$&lt; ,$ Load</td>
<td>Continuous monitoring systems, 4-hour block arithmetic average</td>
</tr>
<tr>
<td>$&lt; ,$ Flue gas temperature</td>
<td>Continuous monitoring systems, 4-hour block arithmetic average</td>
</tr>
<tr>
<td>$&lt; ,$ Carbon feed rate (if carbon injection used to meet the dioxin/furan or mercury emission limits)</td>
<td>Continuously monitor parameters is and calculate 8-hour block arithmetic average carbon mass feed rate during periods of operation</td>
</tr>
</tbody>
</table>
STACK TESTING REQUIREMENTS

Stack Testing Schedule

< Class I units Annual stack test<

< Class II units Annual or third year stack test<,f

Stack Testing Methods

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dioxins/furans&lt;</td>
<td>EPA Method 23</td>
</tr>
<tr>
<td>Cadmium</td>
<td>EPA Method 29</td>
</tr>
<tr>
<td>Lead</td>
<td>EPA Method 29</td>
</tr>
<tr>
<td>Mercury</td>
<td>EPA Method 29</td>
</tr>
<tr>
<td>Particulate matter</td>
<td>EPA Method 5</td>
</tr>
<tr>
<td>Opacity</td>
<td>EPA Method 9</td>
</tr>
<tr>
<td>Hydrogen chloride</td>
<td>EPA Method 26</td>
</tr>
<tr>
<td>Fugitive ash</td>
<td>EPA Method 22</td>
</tr>
</tbody>
</table>

< Dioxins/furans are on a total mass basis measured as tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

< Reduced testing option is available for small MWC units that meet a dioxin/furan emission limit of 7 ng/dscm.

< The proposed standards include provisions that would allow Class II small MWC units to conduct stack tests for dioxins/furans, cadmium, lead, mercury, particulate matter, and hydrogen chloride every third year if the MWC unit meets certain specified criteria.
ABBREVIATIONS AND ACRONYMS

Abbreviations, acronyms, and other terms used:

- ASME = American Society of Mechanical Engineers
- CEMS = continuous emission monitoring system
- CO = carbon monoxide
- COMS = continuous opacity monitoring system
- EPA = Environmental Protection Agency
- GCP = good combustion practices
- mg/dscm = milligrams per dry standard cubic meter
- MSW = municipal solid waste
- MWC = municipal waste combustion
- ng/dscm = nanograms per dry standard cubic meter
- NSPS = new source performance standards
- ppmv = parts per million by volume
- RDF = refuse-derived fuel
- SD/FF/CI = spray dryer/fabric filter/activated carbon injection system
- SNCR = selective noncatalytic reduction
- tpd = tons per day
- total mass = total mass basis of tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans (not toxic equivalency (TEQ) basis)

* At standard temperature and pressure (20 °C, 101.3 kilopascals).