SUMMARY

PROPOSED EMISSION GUIDELINES FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNITS

40 CFR 60 SUBPART BBBB

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APPLICABILITY

The proposed guidelines would apply to all existing small MWC units with capacity to combust at least 35 tpd of MSW but no more than 250 tpd of MSW.[a] Existing small MWC units are defined as small MWC units that commence construction before the publication date of the small MWC NSPS (subpart AAAA) proposal in the Federal Register. The emission guidelines subcategorizes small MWC unit into three classes:

Class	Description
A	Nonrefractory-type units located at plants with an aggregate capacity > 250 tpd
B	Refractory-type units located at plants with an aggregate capacity > 250 tpd
C	All other units located at plants with an aggregate combustion capacity $\leq$ 250 tpd

IMPLEMENTATION

< States are required to develop State plans to implement the emission guidelines. State plans are submitted to EPA for approval. If an approvable State plan is not developed, EPA will develop a Federal plan to apply to MWC units not covered by State plans. State and Federal plans must be "as protective as" the emission guidelines.

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[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).

COMPLIANCE SCHEDULE

< State plans must include one of the following two schedules for compliance with regulatory requirements: (1) full compliance within 1 year after the effective date of State plan approval; or (2) full compliance within 3 years following issuance of a revised construction or operation permit if a permit modification is required, or within 3 years after the effective date of State plan approval if a permit modification is not required. If the State plan includes compliance schedules longer than 1 year after State plan approval, the State plan must include measurable and enforceable incremental steps of progress toward compliance. In no case can compliance be later than 5 years after promulgation of these emission guidelines.

< State plans must specify that all Class A and Class B small MWC units for which construction, modification, or reconstruction commenced after June 26, 1987 comply with the emission guidelines for mercury and dioxins/furans within: (1) 1 year following issuance of a revised construction or operation permit if a permit modification is required, or, (2) 1 year after the effective date of State plan approval if a permit modification is not required.

< State plans must require compliance with the MWC unit operator training by the later of three dates:

1. One year after the effective date of State plan approval.

2. Six months after the MWC unit starts up.

3. The date before an employee assumes responsibilities that affect operation of the MWC unit.

< State plans must require compliance with the MWC unit operator certification requirements by the later of three dates:

1. For Class A and Class B units, 12 months after the effective date of State plan approval. For Class C units, 18 months after the effective date of State plan approval.

2. Six months after the MWC unit starts up.

3. Six months after the chief facility operator and shift supervisor transfer to the MWC plant or 6 months after the chief facility operator and shift supervisor are hired to work at the MWC plant.

GOOD COMBUSTION PRACTICES:

OPERATING 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 the 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**N**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, 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, the amount of carbon purchased and delivered to your MWC plant must not fall below the required quarterly usage for carbon injection.

EMISSION LIMITS

Organic Emissions (measured as total dioxins/furans)[b,c]

< Dioxins/furans (compliance test by EPA Reference Method 23)

Class A units	30 ng/dscm total mass (MWC units utilizing a non-ESP-based air pollution control system) -or- 60 ng/dscm total mass (MWC units utilizing an ESP-based air pollution control system)
Class B units	123 ng/dscm total mass
Class C units	125 ng/dscm total mass

< Basis for dioxin/furan guidelines

Class A units	GCP and SD/ESP/CI - or - GCP and SD/FF/CI
Class B units	GCP and DSI/ESP/CI
Class C units	GCP and DSI/ESP/CI

[b] All limits are corrected to 7 percent oxygen, dry basis.

[c] Dioxins/furans are on a total mass basis measured as tetra- through octachlorinated dibenzo-p-dioxins and dibenxofurans.

EMISSION LIMITS (Continued)

Metal Emissions[b]

< Cadmium (compliance test by EPA Reference Method 29)

Class A units	0.04 mg/dscm
Class B units	0.1 mg/dscm
Class C units	0.1 mg/dscm

< Lead (compliance test by EPA Reference Method 29)

Class A units	0.49 mg/dscm
Class B units	1.6 mg/dscm
Class C units	1.6 mg/dscm

< Mercury (compliance test by EPA Reference Method 29)

All small units	0.08 mg/dscm or 85-percent reduction of potential mercury emissions

< Particulate matter (compliance test by EPA Reference Method 5)

Class A units	27 mg/dscm
Class B units	34 mg/dscm
Class C units	70 mg/dscm

< Opacity (compliance test by EPA Reference Method 9)

All small MWC units	10 percent

[b]All limits are corrected to 7 percent oxygen, dry basis.

EMISSION LIMITS (Continued)

< Basis for cadmium, lead, mercury, particulate matter and opacity guidelines

Class A units	GCP and SD/ESP/CI
	- or -
	GCP and SD/FF/CI
Class B units	GCP and DSI/ESP/CI
Class C units	GCP and DSI/ESP/CI

Acid Gas Emissions[b]

< Sulfur dioxide (compliance test by CEMS)

Class A units	31 ppmv or 75-percent reduction of potential sulfur dioxide emissions
Class B units	55 ppmv or 50-percent reduction of potential sulfur dioxide emissions
Class C units	80 ppmv or 50-percent reduction of potential sulfur dioxide emissions

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

Class A units	31 ppmv or 95-percent reduction of potential hydrogen chloride emissions
Class B units	200 ppmv or 50-percent reduction of potential hydrogen chloride emissions
Class C units	250 ppmv or 50-percent reduction of potential hydrogen chloride emissions

[b]All limits are corrected to 7 percent oxygen, dry basis.

EMISSION LIMITS (Continued)

< Basis for sulfur dioxide and hydrogen chloride guidelines

Class A units	GCP and SD/ESP/CI - or - GCP and SD/FF/CI
Class B units	GCP and DSI/ESP/CI
Class C units	GCP and DSI/ESP/CI

< Nitrogen oxides (compliance test by CEMS)[b]

Class A units	171 ppmv
Class B units	No emission limit
Class C units	No emission limit

< Basis for nitrogen oxides guideline

Class A units	SNCR
Class B units	No control requirement
Class C units	No control requirement

Fugitive Ash Emissions[b]

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

All small MWC units	Visible emissions for no more than 5 percent of the hourly observation period from ash transfer systems except during periods of maintenance and repair activities

< Basis for fugitive ash emission handling guideline: Wet ash handling or enclosed ash handling

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[b]All limits are corrected to 7 percent oxygen, dry basis.

EMISSION LIMITS (Continued)

CO Emissions

< The CO level would be required to be measured using a CEMS, and the concentration in the flue gas would be required not to exceed the following:

MWC Unit Type	CO Limit (ppmv)[c]	Averaging Time[d]
Fluidized bed	100	4-hour
Fluidized bed, mixed fuel (wood/RDF)	200	24-hour
Mass burn rotary refractory	100	4-hour
Mass burn rotary waterwall	250	24-hour
Mass burn waterwall and refractory	100	4-hour
Mixed fuel-fired (pulverized coal/RDF)	150	4-hour
Modular starved-air and excess-air	50	4-hour
Spreader stoker, mixed fuel-fired (coal/RDF)	200	24-hour
Stoker, RDF	200	24-hour

[c]All limits in the table are corrected to 7 percent oxygen, dry basis.

[d]All averages are block averages.

CONTINUOUS MONITORING REQUIREMENTS

<	Sulfur dioxide	CEMS, 24-hour daily geometric mean
<	Nitrogen oxides	CEMS, 24-hour daily arithmetic average
<	Carbon monoxide	CEMS, 4-hour block or 24-hour daily arithmetic average, as applicable
<	Opacity	COMS (6-minute average) and annual stack test
<	Load	CEMS, 4-hour block arithmetic average
<	Flue gas temperature	CEMS, 4-hour block arithmetic average
<	Carbon feed rate (if carbon injection is used to meet the dioxin/furan or mercury emission limits)	Continuously monitor parameters and calculate 8-hour block arithmetic average carbon feed rate during periods of operation.

STACK TESTING REQUIREMENTS

Stack Testing Schedule

<	Class A units	Annual stack test [f]
<	Class B units	Annual stack test [f]
<	Class C units	Annual or third year stack test[e,f]

Stack Testing Methods

Pollutant	Test Method
Dioxins/furans[d]	EPA Method 23
Cadmium	EPA Method 29
Lead	EPA Method 29
Mercury	EPA Method 29
Particulate matter	EPA Method 5
Opacity	EPA Method 9
Hydrogen chloride	EPA Method 26
Fugitive ash	EPA Method 22

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

[e] Reduced testing option is available for Class A MWC units that meet a dioxin/furan emission limit of 15 ng/dscm and for Class B and C MWC units that meet a dioxin/furan emission limit of 30 ng/dscm.

[f] The proposed guidelines include provisions that would allow Class C small MWC units to conduct stack tests for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, 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
DSI/ESP/CI	=	dry sorbent injection/electrostatic precipitator/activated carbon injection system
EPA	=	Environmental Protection Agency
ESP	=	electrostatic precipitator
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*
ppmv	=	parts per million by volume*
RDF	=	refuse-derived fuel
SD/ESP/CI	=	spray dryer/electrostatic precipitator/activated carbon injection system
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 EC, 101.3 kilopascals).