APPENDIX 129C2

SMALL MUNICIPAL WASTE COMBUSTORS
(MWC Units 35-250 tons per day capacity)

NEW SOURCE PERFORMANCE STANDARDS
(40 CFR 60 Subpart AAAA)

EXISTING SOURCE EMISSION GUIDELINES
(40 CFR 60 Subpart BBBB)

CAA SECTION 129
SOLID WASTE COMBUSTION STANDARDS

REGULATION STATUS

On 6 Dec 00, EPA promulgated New Source Performance Standards (NSPS, 40 CFR 60 Subpart AAAA, 65 FR 76349) and Existing Source Emission Guidelines (EG, 40 CFR 60 Subpart BBBB, 65 FR 76377) for small municipal waste combustion (MWC) units. A small MWC unit is one that has a combustion capacity of 35-250 tons per day.

Background

On 19 Dec 95, EPA issued final rules for 40 CFR 60 subparts Cb and Eb which covered both small and large MWC units. However, on 8 Apr 97, the United States Court of Appeals ordered EPA to delete all requirements for MWC units with the individual capacity to combust less than or equal to 250 tons per day of municipal solid waste (MSW) and all cement kilns that combust MSW. As a result, EPA amended subparts Cb and Eb on 25 Aug 97. Subparts Cb and Eb now only apply to large MWC units with an individual combustion capacity greater than 250 tons per day. Refer to Appendix 129C1 for information on the rules for large MWC units. The court order was based on the determination that EPA did not follow the correct procedures for establishing requirements for small units. EPA is also required to develop standards for very small MWC units that combust less than 35 tons per day. Refer to Appendix 129C3 for information on regulations for very small MWCs.

RULE SUMMARIES

New Source Performance Standards (NSPS) 40 CFR 60 Subpart AAAA

Subpart AAAA reestablishes NSPS for new, small MWC units. These NSPS requirements are functionally equivalent to the 1995 NSPS requirements that were removed from Subpart Eb. The small MWC unit population is divided into two classes: Class I and Class II. Class I comprises small MWC units located at MWC plants with an aggregate plant capacity greater than 250 tons of MSW per day. Class II comprises small MWC units located at MWC plants with an aggregate plant capacity less than or equal to 250 tons of MSW per day. The establishment of these two classes preserves the subcategorization used in the 1995 NSPS. If you plan to construct a new MWC, you must meet the preconstruction provisions found in Secs. 60.1050 through 60.1150. If Subpart AAAA applies to your MWC unit, then subpart E does not apply to your MWC unit.

Existing Sources Emission Guidelines (EG) 40 CFR 60 Subpart BBBB

Subpart BBBB reestablishes EG for existing, small MWC units. Each state (including United States protectorates) must develop and implement regulations for small MWC units that are at least as stringent as the requirements in the model rule by 6 Dec 01. If a state fails to issue such regulations, EPA will issue a Federal rule.

The small MWC unit population in Subpart BBBB is subcategorized the same as in Subpart AAAA; Class I and Class II.

Applicability

Use **Table 1** and the following list of exemptions to determine if a small MWC would be affected by one of these subparts.

Table 1. Applicability of MWC Regulations for Small Units (35 - 250 tpd)

Date of Commencement of...	MWC Unit Capacity [(tpd)]	Applicable Regulation in 40 CFR 60
...Construction		
> 30 Aug 99	35 - 250	Subpart AAAA (NSPS)
≤ 30 Aug 99	35 - 250	Subpart BBBB (EG)
...Reconstruction/Modification [1]		
> 6 Jun 01	35 - 250	Subpart AAAA (NSPS)
≤ 6 Jun 01	35 - 250	Subpart BBBB (EG)

1. A physical or operational change made to comply with Subpart BBBB does not trigger Subpart AAAA.

Exemptions

The following units or combustion situations are exempt from the NSPS and EG.

MWC Units Permitted to Combust Less Than 11 tpd:
You are exempt if you meet four requirements: (1) Your municipal waste combustion unit is subject to a federally enforceable operating permit limiting the amount of municipal solid waste combusted to less than 11 tons per day. (2) You notify the Administrator that the unit qualifies for this exemption. (3) You provide the Administrator with a copy of the federally enforceable permit. (4) You keep daily records of the amount of municipal solid waste combusted.

Small Power Production Units:
You are exempt if you meet four requirements: (1) Your unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)). (2) Your unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity. (3) You notify the Administrator that the unit qualifies for this exemption. (4) You provide the Administrator with documentation that the unit qualifies for this exemption.

Cogeneration Units:
You are exempt if you meet four requirements: (1) Your unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)). (2) Your unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes. (3) You notify the Administrator that the unit qualifies for this exemption. (4) You provide the Administrator with documentation that the unit qualifies for this exemption.

Municipal Waste Combustion Units that combust only tires:
You are exempt if you meet three requirements: (1) Your municipal waste combustion unit combusts a single-item waste stream of tires and no other municipal waste (the unit can cofire coal, fuel oil, natural gas, or other nonmunicipal solid waste). (2) You notify the Administrator that the unit qualifies for this exemption. (3) You provide the Administrator with documentation that the unit qualifies for this exemption.

Hazardous Waste Combustion Units:
You are exempt from this subpart if you get a permit for your unit under section 3005 of the Solid Waste Disposal Act.

Material Recovery Units:
You are exempt if your unit combusts waste mainly to recover metals. Primary and secondary smelters qualify for this exemption.

Cofired Units:
You are exempt if you meet four requirements: (1) Your unit has a federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight. (2) You notify the Administrator that the unit qualifies for this exemption. (3) You provide the Administrator with a copy of the federally enforceable permit. (4) You record the weights, each quarter, of municipal solid waste and of all other fuels combusted.

Plastics/Rubber Recycling Units:
You are exempt if you meet four requirements: (1) Your pyrolysis/combustion unit is an integrated part of a plastics/rubber recycling unit as defined under "Definitions" (Sec. 60.1465). (2) You record the weights, each quarter, of plastics, rubber, and rubber tires processed. (3) You record the weights, each quarter, of feed stocks produced and marketed from chemical plants and petroleum refineries. (4) You keep the name and address of the purchaser of these feed stocks.

Units that Combust Fuel Made From Plastics/Rubber Recycling Plants:
You are exempt if you meet two requirements: (1) Your unit combusts gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum

refineries that use feedstocks produced by plastics/rubber recycling units. (2) Your unit does not combust any other municipal solid waste.

Cement Kilns:
You are exempt if your cement kiln combusts municipal solid waste.

Air Curtain Incinerators:
If your air curtain incinerator (see Sec. 60.1465 for definition) combusts 100 percent yard waste, you must only meet the requirements under "Air Curtain Incinerators That Burn 100 Percent Yard Waste" (Secs. 60.1435 through 60.1455).

Non-MSW Combustors:
The Services Steering Committee expressed concern to EPA that ambiguity in the definitions would lead to the regulation of used oil combustors as MWCs. The EPA agreed that used oil is a liquid waste and not a solid waste and therefore should not be considered municipal solid waste (MSW). EPA revised the definition of MSW to exclude used oil. In addition to used oil, the definition also excludes 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). Combustors that burn only these wastes are exempt by definition. However, units that combust these wastes in addition to MSW will be affected unless they qualify for one of the other exemptions.

Key Definitions

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor.

Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See the definition in this section of "municipal waste combustion plant capacity" for specification of which units at a plant site are included in the aggregate capacity calculation.

Class II units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See the definition in this section of "municipal waste combustion plant capacity" for specification of which units at a plant site are included in the aggregate capacity calculation.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items:

1) Yard waste, which is defined elsewhere in this section.
2) Construction, renovation, or demolition wastes (for example, railroad ties and telephone poles) that are exempt from the definition of municipal solid waste in this section.

Cofired combustion unit means a unit that combusts municipal solid waste with nonmunicipal solid waste fuel (for example, coal, industrial process waste). To be considered a cofired combustion unit, the unit must be subject to a federally enforceable permit that limits it to combusting a fuel feed stream which is 30 percent or less (by weight) municipal solid waste as measured each calendar quarter.

Federally enforceable means all limits and conditions the Administrator can enforce (including the requirements of 40 CFR parts 60, 61, and 63), requirements in a State's implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Modification or modified municipal waste combustion unit means a municipal waste combustion unit you have changed later than *[6 Jun 01]* and that meets one of two criteria:

1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs.
2) Any physical change in the municipal waste combustion unit or change in the method of operating it that increases the emission level of any air pollutant for which standards have been established under section 129 or section 111 of the Clean Air Act. Increases in the emission level of any air pollutant are determined when the municipal waste combustion unit operates at 100 percent of its physical load capability and are measured downstream of all air pollution control devices. Load restrictions based on permits or other nonphysical operational restrictions cannot be considered in this determination.

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).

Municipal waste combustion plant capacity means the aggregate municipal waste combustion unit capacity at a plant for all municipal waste combustion units at the plant that are subject to subparts Ea or Eb of this part, or this subpart.

Municipal waste combustion unit means any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected combustion units (with or without heat recovery), modular combustion units (starved-air or excess-air), boilers (for example, steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Two criteria further define these municipal waste combustion units:

1) Municipal waste combustion units do not include pyrolysis or combustion units located at a plastics or rubber recycling unit as specified under "Applicability" (Sec. 60.1020(h) and (i)). Municipal waste combustion units also do not include cement kilns that combust municipal solid waste as specified under "Applicability" (Sec. 60.1020(j)). They also do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.
2) The boundaries of a municipal waste combustion unit are defined as follows. The municipal waste combustion unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustion unit water system. The municipal waste combustion unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set. The municipal waste combustion unit boundary starts at the municipal solid waste pit or hopper and extends through three areas:
   i) The combustion unit flue gas system, which ends immediately after the heat recovery equipment or, if there is no heat recovery equipment, immediately after the combustion chamber.
   ii) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.
   iii) The combustion unit water system, which starts at the feed water pump and ends at the piping that exits the steam drum or superheater.

Reconstruction means rebuilding a municipal waste combustion unit and meeting two criteria:

1) The reconstruction begins 6 months or more after 30Aug 99.
2) The cumulative cost of the construction over the life of the unit exceeds 50 percent of the original cost of building and installing the municipal waste combustion unit

(not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the municipal waste combustion unit used to calculate these costs, see the definition of municipal waste combustion unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

1) Low-density fluff refuse-derived fuel through densified refuse- derived fuel.
2) Pelletized refuse-derived fuel.

Standards

Tables 2, 3 and 4 summarize the emission limits for both the NSPS and EG.

Table 2. Emission Limits for Small MWC Units [1]

Pollutant	Emission Standards [2]		
	Subpart AAAA All NSPS Units	**Subpart BBBB** Class I EG Units	**Subpart BBBB** Class II EG Units
Dioxins/furans	13 ng/dscm	30 ng/dscm or 60 ng/dscm [3]	125 ng/dscm
Cadmium	0.020 mg/dscm	0.040 mg/dscm	0.10 mg/dscm
Lead	0.20 mg/dscm	0.490 mg/dscm	1.6 mg/dscm
Mercury	85% reduction or 0.080 mg/dscm		
Opacity	10 percent		
Particulate	24 mg/dscm	27 mg/dscm	70 mg/dscm
HCl	80% reduction or 30 ppmv	95% reduction or 31 ppmv	50% reduction or 250 ppmv
NOx Class I Units Class II Units	 180/150 ppmv [4] 500 ppmv	See Table 4	None
SO2	80% reduction or 30 ppmv	75% reduction or 31 ppmv	50% reduction or 77 ppmv
Fugitive Ash	5% of hourly observation period		

Notes:
[1] A small MWC unit has an individual combustion capacity of 35 to 250 tpd.
[2] Emission standard concentrations (mg/dscm, ppmv) are corrected to 7% oxygen.
[3] Alternative limit for units with electrostatic precipitator based emission control systems.
[4] 180 ppmv during first year of operation, 150 ppmv thereafter.

Table 3. Carbon Monoxide Emission Limits for Small MWC Units [1]

MWC Unit Type	CO Emission Standards [2]		
	Subpart AAAA All NSPS Units	**Subpart BBBB** All EG Units	Averaging Times [3]
Fluidized bed	100 ppmv	100 ppmv	4-hour
Fluidized bed, mixed fuel, (wood/refuse-derived fuel)	200 ppmv	200 ppmv	24-hour
Mass burn rotary refractory	100 ppmv	100 ppmv	4-hour
Mass burn rotary waterwall	100 ppmv	250 ppmv	24-hour
Mass burn waterwall and refractory	100 ppmv	100 ppmv	4-hour
Mixed fuel-fired, (pulverized coal/refuse-derived fuel)	150 ppmv	150 ppmv	4-hour
Modular starved-air and excess air	50 ppmv	50 ppmv	4-hour
Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel)	150 ppmv	200 ppmv	24-hour daily
Stoker, refuse-derived fuel	150 ppmv	200 ppmv	24-hour daily

Notes:
[1] A small MWC unit has an individual combustion capacity of 35 to 250 tpd.
[2] Emission standard concentrations are corrected to 7% oxygen. Compliance is determined by continuous emission monitoring systems.
[3] Block averages, arithmetic mean.
[4] 24-hour block average, geometric mean.

Table 4. Nitrogen Oxides Emission Limits for Small Class I EG MWC Units (Subpart BBBB) [1]

MWC Unit Type	**Limits for Class I EG Units [2]**
Mass burn waterwall	200 ppmv
Mass burn rotary waterwall	170 ppmv
Refuse derived fuel	250 ppmv
Fluidized bed	220 ppmv
Mass burn refractory	350 ppmv
Modular excess air	190 ppmv
Modular starved-air	380 ppmv

Notes:
[1] A small MWC unit has an individual combustion capacity of 35 to 250 tpd.
[2] Nitrogen oxides limits are measured at 7 percent oxygen. All limits are 24-hour daily block arithmetic average concentrations. Compliance is determined by continuous emission monitoring systems.

Other Requirements

The NSPS contains preconstruction requirements for facility owners to prepare a materials separation plan and a siting analysis. The EG contains a requirement for the facility owner to show increments of progress towards compliance.

In addition, both the NSPS and EG contain the following additional requirements:

- Good combustion practices including operator training and operator certification in addition to specific combustor operating requirements.
- Monitoring and stack testing.
- Recordkeeping and reporting.

MILITARY SOURCES

The HAP Subcommittee is not aware of any MWCs that exceed 35 tons/day capacity still operating on a military base.

CONTACTS

EPA: Rick Copland, (919) 541-5265, *copland.rick@epa.gov*

Military: HAP Subcommittee Contacts

This page left blank intentionally.