Hospital/Medical/Infectious Waste Incinerator Emission Guidelines: Summary of the Requirements for Section 111(d)/129 State Plans (EPA-456/R-97-007)

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Hospital/Medical/Infectious Waste Incinerator Emission Guidelines: Summary of the Requirements for Section 111(d)/129 State Plans (EPA-456/R-97-007)

Office of Air Quality Planning and Standards
U. S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

November 26, 1997

Disclaimer

This document does not establish any new requirements. Rather, it summarizes existing regulations and provides guidance to States pertaining to State Plan development under Section 129 of the Clean Air Act as amended in 1990.

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Executive Summary

Air pollution emissions from the incineration of hospital waste and medical/infectious waste are regulated by Federal rules promulgated to implement the Clean Air Act as amended in 1990. This document addresses the regulations that have been developed for hospital/medical/infectious waste incinerator(s) (HMIWI) under sections 111 and 129 of the Clean Air Act. Section 111 of the Clean Air Act addresses Standards of Performance for Stationary Sources. Section 129 addresses Solid Waste Combustion.

Federal rules promulgated in the Code of Federal Regulations (CFR) that affect the combustion of hospital waste and medical/infectious waste include:

(1) Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators [40 CFR Part 60, subpart Ce] (The Emission Guidelines apply to existing HMIWI that commenced construction on or before June 20, 1996);

(2) Rules governing the Adoption and Submittal of State Plans for Designated Facilities [40 CFR Part 60, subpart B]; and

(3) Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996 [40 CFR Part 60 subpart Ec].

Unlike the subpart Ec New Source Performance Standards, which apply directly to new sources, States are to develop a State Plan in order to compel existing sources to meet the Emission Guidelines. Together, subpart B and subpart Ce specify the State Plan content and the general rules for adopting and submitting State Plans. Working with EPA Regional Offices and States, the EPA Office of Air Quality Planning and Standards has produced this guidance document to assist States in ensuring that their State Plans are complete and meet all the requirements of subpart B and subpart Ce.

This document draws together relevant information from the Federal regulations that affect hospital and medical/infectious waste incineration to give State regulatory agencies the information they need to develop State Plans. Section 1 of this document provides an overview of regulatory and State Plan requirements; section 2 presents information on the timeline and responsibilities for developing and submitting State Plans; and section 3 discusses the required

elements of a State Plan. The appendices to this document contain reference and explanatory materials, including: (1) frequently asked questions and answers; (2) copies of the HMIWI NSPS and Emission Guidelines; (3) a fact sheet on the Emission Guidelines; (4) clarifications of the requirements and applicability of the Emission Guidelines; (5) contacts for further information; (6) emission factors for calculating HMIWI air pollutant emissions; and (7) references on health effects of pollutants.

On September 15, 1997 the EPA adopted (1) Emission Guidelines for existing HMIWI and (2) New Source Performance Standards for new HMIWI. The Clean Air Act requires that State regulatory agencies implement the Emission Guidelines according to a State Plan developed under sections 111(d) and 129 of the Clean Air Act, and that they submit the State Plan to EPA within 1 year after EPA's promulgation of the Emission Guidelines (i.e., by September 15, 1998).

State Plans must contain specific information and the legal mechanisms necessary to implement the Emission Guidelines. The minimum requirements are listed below.

1. A demonstration of the State's legal authority to carry out the section 111(d)/129 State Plan and identification of enforceable mechanisms, including:

    - a list in the enforcement section of the State Plan indicating the consequences for sources not in compliance and the authority under which a State can shut down/close a source, and

    - a reference to section 129(f)(3) ("PROHIBITION") which prohibits a plant from operating if it does not comply with the standard.

    - adequate authority to enforce the recordkeeping and notification requirements for co-fired combustors and incinerators burning only pathological, low-level radioactive, and chemotherapeutic waste (see section 60.32e of subpart Ce).

2. An inventory of sources in the State affected by the Emission Guidelines, including to the best of the State's knowledge, HMIWI that have shut down and are capable of restarting, and including:

    - a statement preceding the inventory which says that sources subject to the standard "includes but are not limited to" the inventory in the State Plan, and

- an additional statement that says, "should another source be discovered subsequent to this notice, there will be no need to reopen the State Plan."

3. An inventory of emissions from HMIWI operating in the State.

4. Emission limitations for HMIWI that are at least as protective as those in the Emission Guidelines.

5. Compliance schedules (including increments of progress for compliance schedules which extend beyond 1 year after State Plan approval).

6. Testing, monitoring, and inspection requirements at least as protective as those in the Emission Guidelines.

7. Reporting and recordkeeping requirements at least as protective as those in the Emission Guidelines.

8. Operator training and qualification requirements at least as protective as those in the Emission Guidelines.

9. Requirements for development of a Waste Management Plan at least as protective as those in the Emission Guidelines.

10. A record of public hearing(s) on the State Plan.

11. Provision for State progress reports to EPA.

12. Title V permit applications due date.

13. A final compliance date not later than 3 years after approval of the State Plan or September 15, 2002, whichever is earlier.[1]

Prior to submittal to EPA, the State must make available to the public the State Plan and provide opportunity for public comment. The State must submit the final Plan to EPA by September 15, 1998. The EPA then has 180 days (6 months) to approve or disapprove the State Plan. Plan approval or disapproval will be published in the Federal Register. If a Plan is disapproved, EPA will state the reasons for disapproval in the Federal Register and give the State opportunity to respond to EPA's concerns and submit a revised Plan. A Federal Plan will be developed for each State that does not have an approved Plan in place by September 15, 1999.

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[1]Final compliance beyond 1 year after State Plan approval is possible only if the State Plan contains increments of progress (see section 10).

Based on the EPA's 1995 inventory of HMIWI subject to the Emission Guidelines, the total combustion capacity of the HMIWI subject to the Emission Guidelines is approximately 846,000 tons per year. According to the inventory, 26 percent of the HMIWI (which represent 67 percent of the U.S. HMIWI combustion capacity) employ some kind of add-on air pollution control device (APCD). An additional 42 percent of the HMIWI population (which constitute approximately 22 percent of the U.S. HMIWI combustion capacity) are believed to have good combustion.[2] Most of these units will require retrofit of an APCD to meet the Emission Guidelines. The remaining 32 percent of existing HMIWI (11 percent of the U.S. HMIWI combustion capacity) is likely to require retrofit of good combustion and an APCD in order to meet the emission limits. The table below presents the approximate number of HMIWI in each State. The figure below shows the location of the HMIWI.

[2]To the extent that good combustion is defined, it means 2-second residence time in the secondary chamber at 1800°F. However, the Emission Guidelines do not require 2-seconds and 1800°F.

Approximate Number of Hospital/Medical/Infectious Waste Incinerators in Each State

EPA Region	State	Approximate Number of HMIWI[a]
I	Connecticut	25
	Massachusetts	109
	Maine	36
	New Hampshire	17
	Rhode Island	11
	Vermont	3
II	New York	18
	New Jersey	61
	Puerto Rico	b
	Virgin Islands	b
III	Virginia	65
	Delaware	8
	District of Columbia	3
	Maryland	82
	Pennsylvania	72
	West Virginia	14
IV	Florida	44
	Georgia	103
	North Carolina	90
	Alabama	54
	Kentucky	37
	Mississippi	21
	South Carolina	26
	Tennessee	57

Approximate Number of Hospital/Medical/Infectious Waste Incinerators in Each State, Continued

EPA Region	State	Approximate Number of HMIWI[a]
V	Minnesota	119
	Wisconsin	10
	Illinois	108
	Indiana	92
	Michigan	287
	Ohio	126
VI	Arkansas	39
	Louisiana	92
	New Mexico	b
	Oklahoma	32
	Texas	63
VII	Iowa	34
	Kansas	114
	Missouri	59
	Nebraska	33
VIII	Colorado	39
	Montana	5
	North Dakota	76
	South Dakota	b
	Utah	2
	Wyoming	7

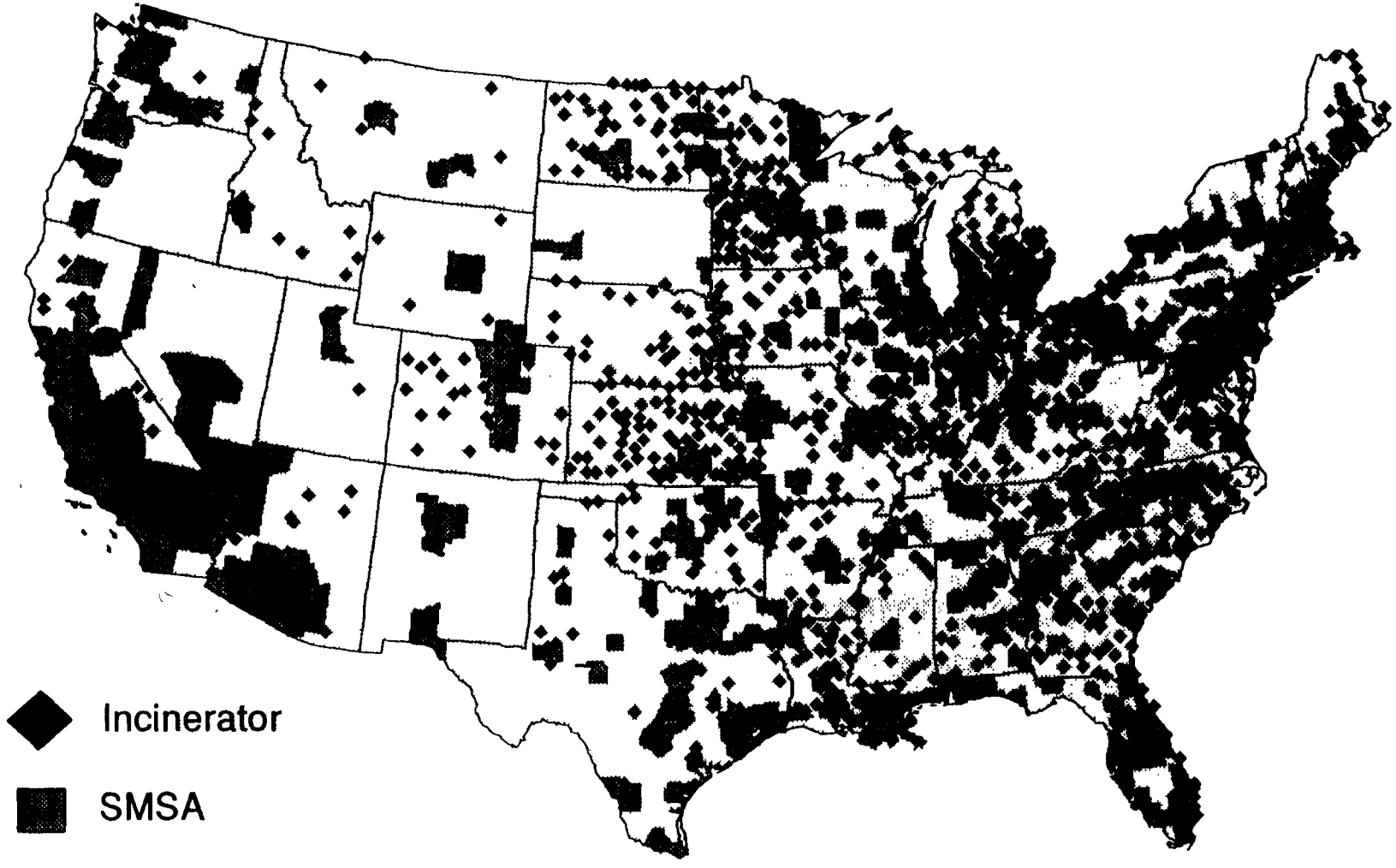
Approximate Number of Hospital/Medical/Infectious Waste Incinerators in Each State, Continued

EPA Region	State	Approximate Number of HMIWI[a]
IX	Arizona	14
	California	23
	Hawaii	b
	Nevada	b
X	Alaska	b
	Idaho	12
	Oregon	b
	Washington	31
Total		2,373

[a] The approximate number of HMIWI is based on data gathered in 1995. The number of HMIWI in each State may have changed since development of the 1995 inventory.

[b] Not known at present.

Inventory of Existing Medical Waste Incinerators (1995).



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List of Acronyms and Abbreviations

AFS	Aerometric Emissions Information Retrieval System Facility Subsystem
AHA	American Hospital Association
APCD	Air Pollution Control Device
CAA	Clean Air Act (of 1990)
Cd	Cadmium
CFR	Code of Federal Regulations
CO	Carbon Monoxide
Dioxin/furan	Tetra- through octa- chlorinated dibenzo-p-dioxins and dibenzofurans
EG	Emission Guidelines
EPA	U.S. Environmental Protection Agency
FR	Federal Register
HMIWI	Hospital/Medical/Infectious Waste Incinerator(s)
HCl	Hydrogen Chloride
Hg	Mercury
lb/hr	pounds per hour
MWC	Municipal Waste Combustor
NAAQS	National Ambient Air Quality Standards
NEDS	National Emissions Data System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
Pb	Lead
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TEQ	Toxic Equivalent Quantity

1.0 Introduction

The purpose of this document is to assist the State air regulatory agencies in developing State Plans which will implement regulations controlling air pollutant emissions from hospital/medical/infectious waste incinerator(s) (HMIWI). Under the Clean Air Act as amended in 1990, the United States Environmental Protection Agency (EPA) is required to develop regulations to control air pollutant emissions from HMIWI. Emissions from new HMIWI are addressed by standards of performance for new sources (New Source Performance Standards [NSPS]), and emissions from existing HMIWI are addressed by guidelines for existing sources (Emission Guidelines). The EPA promulgated the NSPS (subpart Ec) and Emission Guidelines (subpart Ce) for HMIWI on September 15, 1997. States are to develop State Plans to implement the Emission Guidelines for existing sources and submit the State Plans to EPA by September 15, 1998. This document provides State agencies information on the required content of these State Plans.

1.1 Organization of this Document

This document brings together the information on the relevant parts of the various regulations that affect existing HMIWI constructed on or before June 20, 1996. These regulations were developed under section 111(d) and section 129 of the Clean Air Act. The regulations are codified in title 40 of the Code of Federal Regulations (CFR) Part 60. The CFR rules include (1) Adoption and Submittal of State Plans for Designated Facilities (subpart B) and (2) the Emission Guidelines for existing HMIWI (subpart Ce).

Section 1 of this document provides an overview of regulatory and State Plan requirements; section 2 presents information on the timeline and responsibilities for developing and submitting State Plans; and section 3 discusses the required elements of a State Plan. The appendices of this document are listed in Table 1-1. The appendices include reference materials that States may find useful when developing their State Plans, such as copies of relevant regulations, answers to frequently asked questions, emission factors (for estimating emissions from HMIWI), and contact lists.

Table 1-1. Appendices to This Document

Appendix	Title
A	Answers to Questions About the Emission Guidelines and State Plan Process
B	Key Elements of an Acceptable Section 111(d)/129 State Plan
C	Emission Guideline Fact Sheet (40 CFR 60 Subpart Ce)
D	Applicability of the HMIWI Emission Guidelines
E	HMIWI Implementation Timeline
F	EPA Regional and State/Local Agency Contacts
G	HMIWI Emission Inventory
H	References on Health Effects
I	NSR Permit Requirements for HMIWI
J	Clean Air Act Section 111(d)
K	Clean Air Act Section 129
L	40 CFR 60 Subpart B
M	40 CFR 60 Subparts Ce (EG) and Ec (NSPS)
N	Example Exemption Claim Forms

1.2 Clean Air Act Requirements

Section 111(d) has been included in the Clean Air Act since the 1970's and requires EPA to establish procedures for submission of State Plans for implementing Emission Guidelines. The first Emission Guideline adopted was for sulfuric acid plants in 1977. Other Emission Guidelines have been adopted since that time. The State Plans implement and provide mechanisms for enforcing the Emission Guidelines. Section 129 was added to the Clean Air Act in 1990 and specifically addresses solid waste combustion. It requires EPA to establish Emission Guidelines for HMIWI and requires States to develop State Plans for implementing the Emission Guidelines. The subpart Ce Emission Guidelines for HMIWI differ from some other Emission Guidelines adopted in the past because the subpart Ce Emission Guidelines address both section 111(d) and section 129 requirements. Section 129 overrides some aspects of section 111(d). (The subpart Cb Emission Guidelines for Municipal Waste Combustors (MWC) similarly address both section 111(d) and section 129 requirements.)

Detailed procedures for submitting and approving State Plans under section 111(d) were promulgated by EPA in 1975 as 40 CFR Part 60, subpart B and amended in 1979, 1989, and 1995. The 1995 amendments to subpart B were adopted on December 19, 1995 in the same action that promulgated the subpart Cb Emission Guidelines for MWC. The revisions to subpart B address differences between sections 129 and 111(d) of the Clean Air Act. In particular, section 129 requires that State Plans for HMIWI be submitted to EPA within 1 year after promulgation of the Emission Guidelines, whereas the subpart B procedures developed to implement section 111(d) Plans have a different schedule. Also, section 129 requires section 111(d)/129 State Plans to be "at least as protective as the guidelines;" whereas section 111(d) allows States flexibility to consider the remaining useful life of the source and other factors in developing State Plans and standards. Where section 129 conflicts with section 111(d), the December 19, 1995 revisions supersede otherwise applicable requirements of subpart B. (See Appendices J, K, and L for the full text of section 111(d), section 129, and subpart B.) Figure 1-1 demonstrates the relationship between sections 111(d), section 129, and subpart B.

1.3 Emission Guidelines

The Emission Guidelines for HMIWI were promulgated on September 15, 1997 (62 FR 48347), and codified in 40 CFR Part 60, subpart Ce. An outline of the Emission Guidelines is presented in Table 1-2. The Emission Guidelines apply to existing HMIWI that commenced construction on or before June 20, 1996 . The pollutants regulated by subpart Ce include metals (cadmium [Cd], lead [Pb], and mercury [Hg]); particulate matter (PM); acid gases, (sulfur dioxide [SO_2], nitrogen oxides [NO_x], and hydrogen chloride [HCl]); organic compounds (dioxins and furans); carbon monoxide (CO); and opacity. The Emission Guidelines are summarized in a fact sheet included in this document (see Appendix C). The full text of the Emission Guidelines (subpart Ce) is also provided (see Appendix M).

Figure 1-1. Relationship Between Section 111(d), Section 129, and Subpart B

Statues	Rules, Regulations, and Procedures
CAA	40 CFR Part 60
Section 111(b) (new sources)	NSPS---->General provisions --> subpart A Source category NSPS --> subpart D-ZZZ
Section 111(d) (existing sources)	EG------> Procedures (State Plan) --> subpart B - amended to allow additional directions specified in section 129 Source category EG -->subpart Cb (MWC), Ce (HMIWI), . . .
Section 129[3]	Provides more specific directions above sections 111(b) and 111(d) for those solid waste combustors listed in section 129.

[3] Section 129 was added with the 1990 Amendments to the CAA. Section 129 changed section 111(d) in the following ways:

- State rule must be at least as protective as the EG.
- Deletes opportunity for sources to have a longer compliance schedule than what the EG specifies.
- Allows States a longer time for submittal of their State Plan (i.e., 12 months instead of 9 months).

Table 1-2. Outline of the Emission Guidelines for HMIWI (40 CFR Part 60, Subpart Ce)

Section	Contents
60.30e	Scope
60.31e	Definitions
60.32e	Designated facilities
60.33e	Emission guidelines
60.34e	Operator training and qualification guidelines
60.35e	Waste Management Plan
60.36e	Inspection guidelines
60.37e	Compliance, performance testing, and monitoring guidelines
60.38e	Reporting and recordkeeping guidelines
60.39e	Compliance times

1.4 Requirements for State Plans

States are to develop section 111(d)/129 State Plans to implement the HMIWI Emission Guidelines and to submit their Plans to the appropriate EPA Regional Office for approval. The first step for meeting the State Plan requirement is to identify and prepare a list of sources operating in the State that are subject to the Emission Guidelines. If there are no sources affected by the Emission Guidelines in the State, then the State need only submit a letter of certification called a negative declaration to their EPA Regional Administrator, and no Plan is submitted.[4]

All sources, whether they are on the State's list or not, are subject to the State Plan and must be in compliance no later than 3 years following State Plan approval or by September 15, 2002, whichever is earlier. In order to cover sources that might be discovered after submittal of the State Plan, States should include certain language in the State Plan. Although a State could choose to revise the State Plan in order to establish a separate, but equally protective compliance schedule for the newly discovered source, it is not necessary, provided the State Plan includes the following:

1. A statement preceding the inventory which says that sources subject to the standard "include. but are not limited to" the inventory in the State Plan; and

2. In additional statement that says, "Should another source be discovered subsequent to this notice, there will be no need to reopen the State Plan."

The EPA also advises States to include in their State Plan a generic compliance schedule with which "all other applicable sources" not listed individually in the State Plan must comply. Any newly discovered source would be bound to that generic compliance schedule.

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[4]The absence of known sources does not preclude a State from submitting a State Plan. States with no known sources may still want to submit a State Plan to cover existing sources subsequently discovered.

It is possible that HMIWI that are not operating at the time of State Plan submittal could reopen as an existing unit in the future. Such a unit would be considered an existing HMIWI, assuming it was constructed prior to June 20, 1996.[5] Therefore, States should make a reasonable effort to include sources in the inventory which have shut down but have the potential to reopen.

In order for an HMIWI that shut down to reopen, the State must submit a State Plan to require retrofit of the necessary air pollution controls before the HMIWI reopens. The revised Plan for the non-operating unit must contain a final compliance date and legal authority to ensure that the HMIWI would complete retrofit before reopening. As discussed above, the State does not need to revise the State Plan in order to require newly discovered sources to retrofit, but rather, need only refer them to the generic compliance schedule contained in the State Plan. If a source were discovered well into the compliance time and had already missed several increments of progress, it would need to shut down immediately and remain closed until it had caught up with the increments. Of course, the State always has the option of assigning a separate compliance schedule to that newly discovered source, but in order to do so, the State would need to revise the State Plan.

States which have HMIWI are required to submit a section 111(d)/129 State Plan. At a minimum, the State Plan must include the elements listed below.

1. A demonstration of the State's legal authority to carry out the section 111(d)/129 State Plan and identification of enforceable mechanisms, including:

    - a list in the enforcement section of the State Plan indicating the consequences for sources not in compliance and the authority under which a State can shut down/close a source, and

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[5]If an HMIWI that shut down and reopened had been modified, then it would be considered a new source. Modification means any change that results in an increase in emissions to the atmosphere or the capital cost of the change is more than 50 percent of the inflation-adjusted replacement cost of the HMIWI.

- a reference to section 129(f)(3) ("PROHIBITION") which prohibits a plant from operating if it does not comply with the standard.

- adequate authority to enforce the recordkeeping and notification requirements for co-fired combustors and incinerators burning only pathological, low-level radioactive, and chemotherapeutic waste (see section 60.32e of subpart(e)).

2. An inventory of sources in the State affected by the Emission Guidelines, including to the best of the State's knowledge, HMIWI that have shut down and are capable of restarting, and including:

   - a statement preceding the inventory which says that sources subject to the standard "includes but are not limited to" the inventory in the State Plan, and

   - an additional statement that says, "should another source be discovered subsequent to this notice, there will be no need to reopen the State Plan."

3. An inventory of emissions from HMIWI operating in the State.

4. Emission limitations for HMIWI that are at least as protective as those in the Emission Guidelines.

5. Compliance schedules (including increments of progress for compliance schedules which extend beyond 1 year after State Plan approval).

6. Testing, monitoring, and inspection requirements at least as protective as those in the Emission Guidelines.

7. Reporting and recordkeeping requirements at least as protective as those in the Emission Guidelines.

8. Operator training and qualification requirements at least as protective as those in the Emission Guidelines.

9. Requirements for development of a Waste Management Plan at least as protective as those in the Emission Guidelines.

10. A record of public hearing(s) on the State Plan.

11. Provision for State progress reports to EPA.

12. Title V permit applications due date.

13. A final compliance date not later than 3 years after approval of the State Plan or September 15, 2002, whichever is earlier. [6]

The State Plans are due to EPA by September 15, 1998. Table 1-3 is a cross check of subpart B requirements and of whether or not each section applies to HMIWI. Table 1-3 also indicates where the HMIWI Emission Guidelines (subpart Ce) and section 129 of the Clean Air Act override specific provisions of subpart B. The EPA published policy guidance for subpart B in 1977. That guidance applies to the HMIWI Emission Guidelines except where overridden by the changes introduced in section 129 of the Clean Air Act of 1990 and subpart Ce.

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[6]Final compliance beyond 1 year after State Plan approval is possible only if the State Plan contains increments of progress (see Section 3.10).

Table 1-3. Regulations for Adopting and Submitting State Plans (40 CFR 60 Subpart B)

Section Number and Title	General Contents	Does the section Apply to HMIWI ?
60.20 "Applicability"	Subpart B applies when final Guidelines are promulgated (i.e., subpart Ce).	Yes, final HMIWI Guidelines (subpart Ce) were published September 15, 1997 so subpart B now applies to HMIWI.
60.21 "Definitions"	Definitions of key terms.	Definition of "designated pollutant" in subpart B does not apply to HMIWI. Subpart Ce lists nine HMIWI pollutants that are covered. Definition of "designated facility" in subpart B is defined in subpart Ce as each HMIWI for which construction commenced on or before June 20, 1996.
60.22 "Publication of guideline documents, Emission Guidelines, and final compliance times"	Descriptions of contents of Emission Guidelines to be developed by EPA.	Yes. Guidelines for HMIWI (subpart Ce) have been developed and published as required (September 15, 1997 [62 FR 48347]).
60.23 "Adoption and submittal of State Plans, public hearings"	Schedules and procedures for States to follow in developing and submitting State Plans. Requirements for public hearings on State Plans.	Yes, except for 60.23(a). Section 129 specifies that State Plans for HMIWI be submitted 1 year after publication of subpart Ce (i.e., September 15, 1998).
60.24 "Emission standards[7] and compliance schedules"	State Plans must include emission standards and compliance schedules. State Plans may be more or less stringent than the Guidelines.	Yes, except 60.24(f) does not apply. Subpart Ce and Section 129 specify that State Plans must be "at least as protective" as the Guidelines.
60.25 "Emission inventories, source surveillance, reports"	Plans must include a plant inventory and an emissions inventory and provisions for monitoring compliance. States must submit progress reports to EPA.	Yes.
60.26 "Legal authority"	Plans must demonstrate that the State has legal authority to carry out the Plan as submitted.	Yes.

[7]Note that "emission standards" can include any State enforceable mechanisms including, but not limited to, State rules (see section 3.2 in this document).

Table 1-3. Continued

Section Number and Title	General Contents	Does the section Apply to HMIWI ?
60.27 "Actions by the Administrator"	Procedures for EPA review and approval or disapproval of Plans. Federal Plans will be developed if States have not submitted approvable Plans.	The schedules in 60.27 do not apply. For HMIWI, section 129(b)(2) of the Clean Air Act allows 6 months for EPA to approve or disapprove State Plans. The EPA will implement a Federal Plan per section 129(b) for all States (with affected sources) which do not have an EPA approved State Plan in place by September 15, 1999 (2 years after promulgation).
60.28 "Plan revisions by the State"	Procedures for revision of Plans.	Yes.
60.29 "Plan revisions by the Administrator"	Procedures for revision of Plans.	Yes.

1.5 Relationship Between the Section 111(d)/129 State Plan and SIP

The State Plans for implementing the HMIWI Emission Guidelines are different from State Implementation Plans (SIP) required by sections 110 or 172 of the Clean Air Act. The State Plan and the SIP are programs for State implementation of Federal requirements, and for both, the administrative procedures, particularly the public hearing process, are similar. Both programs are designed to achieve emission reductions at sources by identifying the pollutant to be controlled, establishing the emission limits for the source, and establishing procedures to ensure that emission limits are met.

However, the States and EPA fulfill different responsibilities under the two programs. The goal of section 111(d) State Plans is to control the emissions of designated pollutants[8] by establishing standards of performance for existing sources. Section 111(d) Emission Guidelines (including emission limitations or performance levels) are technologically-based and are established by EPA on a national level. States are responsible for developing and implementing a program to achieve compliance with these technologically-based standards.

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[8]Section 111(d)/129 Plans apply to PM, SO_2, HCl, CO, NO_x, Pb, Cd, Hg, and dioxin/furan [sections 129(a)(4) and 129(b)(2)].

The goal of the SIPs, on the other hand, is to attain and maintain National Ambient Air Quality Standards (NAAQS) or ambient concentrations for certain criteria pollutants (Pb, SO_2, PM_{10}, NO_2, CO, and ozone) in a given area. Hence, in the SIP program, the State establishes emission limitations or standards based on the sources' contributions to local air quality and other local factors. The emission control requirements for a regulated source category under a SIP may vary from plant to plant based on local factors.

The States are responsible for implementing both section 111(d)/129 State Plans and SIP programs, and both programs complement each other. Where the SIP requirements are adequate to meet the 111(d)/129 standard, the State may elect to submit a section 111(d)/129 State Plan that relies on the requirements of the SIP (section 110) to meet the section 111(d)/129 emission standard. In addition, where the section 111(d)/129 requirements protect the NAAQS, the State may elect to rely on these requirements in the SIP control strategy.

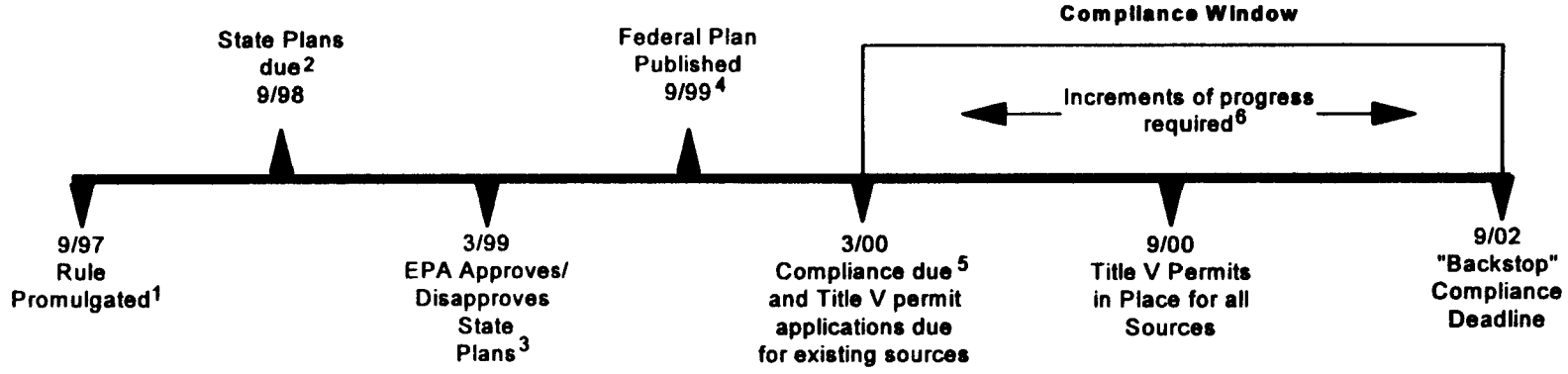
2.0 Schedule and Responsibilities

Sections 111(d) and 129 of the Clean Air Act require each State to adopt and submit Plans that implement the HMIWI Emission Guidelines within 1 year after EPA publication of the final Emission Guidelines. Emission Guidelines for HMIWI (40 CFR Part 60, subpart Ce) were published on September 15, 1997 (62 FR 48347) and State Plans must be submitted to EPA on or before September 15, 1998. Figure 2-1 is a timeline which shows how implementation of the Emission Guidelines might proceed if the maximum time allowed is used for each event.

2.1 State Plan Schedule

In order to submit the section 111(d)/129 State Plan by September 15, 1998, States need to develop the section 111(d)/129 State Plan as soon as possible and complete the required public hearings. The steps that are necessary for States to develop and submit the State Plans are listed in Table 2-1, along with an example schedule.

After the State Plan is submitted, EPA is required to approve or disapprove the Plan no later than 6 months of State Plan submittal. The EPA's decision to approve or disapprove each State Plan will be published in the Federal Register (FR). Final decisions will be codified in 40 CFR Part 62, "Approval and Promulgation of State Plans for Designated Facilities and Pollutants." If a State Plan is not approvable, EPA will attempt to discuss its concerns about the State Plan with the State prior to official disapproval. If the Plan is not approved, the basis for disapproval will be discussed in the FR notice and the State would have to opportunity to submit a revised Plan addressing EPA's concerns. If the State does not have an approved Plan in place by September 15, 1999, the EPA's Federal Plan will go into effect immediately and will be applicable to affected sources in that State.



[1] 62 FR 48347.

[2] Sec. 129(b)(2) requires State Plans be submitted not later than one year after promulgation of the rule.

[3] Sec. 129(b)(2) requires EPA to approve or disapprove a State Plan within 180 days of submission.

[4] Sec.129(b)(3) requires EPA to develop a Federal Plan within 2 years of rule promulgation (if necessary).

[5] Due 12 months after EPA approval of State Plan under sec. 60.39e of subpart Ce unless the State has granted an extension to a source (up to 3 years after approval of State Plan but not less than 5 years after promulgation).

[6] Sec. 60.24(e)(1) of subpart B requires legally enforceable increments of progress for any compliance schedule extending beyond 12 months from State Plan approval. Sec. 60.39e(c)(1)-(9) of subpart Ce and Sec. 60.21 of subpart B list suggested increments of progress and Sec. 60.21 of Subpart B contains five required increments of progress.

[7] Both new and existing sources have 36 months from promulgation to get a complete permit application into the permitting agency.

Notes

Subpart B------ General requirements for all 111(d) State Plans. Amended 12/19/95 to allow subsequent subparts (Ce and Ec) to supersede subpart B.

Subpart Ce-----EG for HMIWI's.

Subpart Ec-----NSPS for HMIWI's.

Subpart Cb-----EG for MWC's.

Subpart Eb-----NSPS for MWC's.

Figure 2-1. HMIWI Implementation Timeline

Section 111(d)/129 State Plans must include a compliance schedule for all existing HMIWI located in the State. The compliance schedule can allow up to 3 years from State Plan approval for HMIWI to comply provided the Plan includes enforceable increments of progress. In all cases, all applicable sources must be in compliance no later than 3 years after State Plan approval by EPA or September 15, 2002, whichever is earlier. Compliance can be achieved by either completing retrofit of air pollution controls or by shutdown. States may establish compliance schedules that are shorter than the times allowed by the Emission Guidelines, but they may not establish compliance schedules that are longer than allowed by the Emission Guidelines.

For purposes of the Emission Guidelines, the HMIWI population has been divided into three subcategories which are based on HMIWI pound per hour (lb/hr) capacity to burn hospital waste and medical/infectious waste. The "small" subcategory consists of HMIWI that burn less than or equal to 200 lb/hr. State Plans may further divide the small subcategory to allow some small HMIWI located in rural areas the option of meeting less stringent Emission Guidelines. The "rural criteria" to be used in determining which small HMIWI could be allowed to meet the less stringent Emission Guidelines is discussed in Appendix D. The "medium" subcategory includes HMIWI that burn between 200 and 500 lb/hr, and the "large" subcategory consists of HMIWI which burn more than 500 lb/hr. Hospital/medical/infectious waste incinerator capacity is to be determined using the methods presented in §60.51c of subpart Ec and in Appendix D of this document. The emission limits in the Emission Guidelines are slightly different for each of the three HMIWI subcategories. However, the compliance schedules are the same for all HMIWI, regardless of the subcategory. The Emission Guidelines give HMIWI up to 3 years after section 111(d)/129 State Plan approval by EPA to complete retrofits, or until September 15, 2002, whichever is earlier. If the compliance schedule for an HMIWI extends beyond 1 year after EPA approval of the State Plan, the State Plan must include enforceable increments of progress.

Table 2-1. Sample State Schedule for Section 111(d)/129 State Plans

Action	Date
Begin source inventory	Immediately
Emission Guidelines promulgated by EPA	September 15, 1997
EPA issues summary document on section 111(d)/129 State Plans	November 1997
Decide what State authority to use	October 1997
Start State rulemaking or other procedure needed to ensure State authority	November 1997
Start drafting State Plan	November 1997
Notice of public hearings	January 1998 (30 days before hearing)
Complete State rulemaking or other procedure needed	May 1998
Complete public hearing on State Plan	May 1998
State Plans due to EPA Regional Office	September 15, 1998
Respond to any clarifications requested by EPA	During the 180 day period following September 15, 1998
EPA approval/disapproval of the State Plan	No later than 6 months after State Plan submittal
If disapproved, submit revised approvable State Plan	September 15, 1999
Permit applications due	September 15, 2000

In order to avoid a Federal Plan, the approved State Plan must be in the Federal Register prior to September 15, 1999.

2.2 Responsibilities

The EPA, the States, and owners and operators of HMIWI each have responsibilities for implementing the Emission Guidelines. The primary responsibilities for each party are outlined below.

2.2.1 EPA Responsibilities

Assisting State and Local Programs and HMIWI Owners and Operators. The EPA assists State and local agencies to develop approvable section 111(d)/129 State Plans. The EPA provides information, answers questions, and interprets Federal requirements for the State and for HMIWI owners and operators. The EPA conducts outreach and compliance assistance programs. The EPA identifies contact persons to answer States' questions, clarify approval criteria, and address specific implementation issues as necessary. States' questions should be directed to the appropriate EPA Regional Office to ensure efficient and consistent responses. (See Appendix F for a list of Regional and State contacts.)

Review of State Plans. Section 129 of the CAA requires EPA to approve or disapprove State Plans within 6 months of submittal. States are to develop their section 111(d)/129 State Plans according to the criteria in this document and 40 CFR Part 60, subpart B (as revised December 19, 1995 to conform with section 129). The EPA will inform the State if the EPA has questions about the State Plan before making a decision on the approval or disapproval of the State Plan. After a State incorporates a requirement in the State Plan, and the Plan is reviewed and approved by EPA, the State requirement becomes Federally enforceable.

Federal Plan. The EPA anticipates that all States will develop approvable section 111(d)/129 State Plans. However, in the event an approvable State Plan is not submitted, EPA will develop and implement a Federal Plan.

The EPA encourages Tribes to develop Tribal Plans for their HMIWI and EPA will work with those Tribes that choose to develop Tribal Plans. The EPA recognizes that due to competing priorities for environmental staff and resource issues, most Tribes will be unable or will choose not to develop Tribal Plans. Generally, Tribes will need to rely on a Federal Plan that will be jointly implemented by the Tribe and the EPA Regional Office.

Title V Permit. Section 129 requires sources to have a complete title V permit applications submitted to the permitting agency no later than 36 months after the promulgation

date for the Emission Guidelines (i.e., September 15, 2000). The EPA reviews and comments on State development of title V operating permits. The individual title V permits are not a required component of State Plan submittal, nor are they required for EPA approval of the State Plan, unless a State demonstrates that it has the ability under State law to utilize title V permits as its legally enforceable mechanism.

2.2.2 State Responsibilities

Developing a State Plan. The State develops and submits a State Plan that meets the criteria presented in sections 111(d) and 129, the Emissions Guidelines, and this document. This document outlines how States can meet this responsibility.

Establishing Compliance Schedules. The State Plan must include emission limits and compliance schedules for all HMIWI. When developing a workable section 111(d)/129 State Plan, States should contact HMIWI owners and operators to ensure that they understand the requirements of the Emission Guidelines. State Plans are to require facilities to come into compliance with the State Plan by either completing a retrofit of shutting down by the date 1 year after EPA approval of the State Plan. If the State Plan contains increments of progress, HMIWI may be allowed to extend their retrofit schedule beyond the 1-year compliance date. All HMIWI planning to retrofit must do so within 3 years of EPA approval of the State Plan, but no later than September 15, 2002. All HMIWI planning to shut down must do so within 1 year after EPA approval of the State Plan, unless granted an extension by the State under the provisions of section 60.39e(d) of subpart Ce. Be aware that a State can only consider petitions per section 60.39e(d) if the State Plan includes a provision that allows such sources to request an extension to continue operating beyond 1 year after State Plan approval.

Ensuring Compliance. Plants must either comply (i.e., complete retrofits) or shut down by the dates established in the section 111(d)/129 State Plans. In order to prevent sources from restarting without proper controls, State Plans must demonstrate authority that would require HMIWI which shut down to maintain closure. States are advised to include a generic compliance schedule in their State Plans to cover facilities which have shut down but

may reopen in the future. Units that shut down by the date 1 year after EPA approval of the State Plan, and restart prior to the September 15, 2002 deadline must complete all of the missed increments of progress in the State's generic compliance schedule before reopening. Units which restart after the September 15, 2002 compliance deadline must comply with the State Plan before resuming operation.

Hospital/medical/infectious waste incinerators that shut down can be divided into two groups. The first group is HMIWI that have shut down or will shut down and are not planning to restart. Once shut down, such sources cannot restart without a State Plan revision and retrofit of air pollution control equipment.

The second group is HMIWI that shut down as an element of their retrofit activities. For these HMIWI, schedules for shutdown and completion of retrofit activities would be included in the State Plan. For retrofitting plants, the State Plan must include the five enforceable increments of progress for retrofit activities (discussed in section 3.10.3), along with a sixth increment, a date for shutdown. Under the Plan, the HMIWI would shut down by the specified date and could not restart until the other increments of progress, including retrofit of controls, is complete.

Submitting Progress Reports. States must report annually to the EPA on the progress of implementing the Plan, including meeting increments of progress and achieving final compliance. The States must also include in this report (as specified in section 3.12): (1) compliance status, (2) enforcement actions, and (3) updates on inventory.

Title V Permit. State's emission limitations implement the Emission Guidelines and are included in the State Plan. Section 129 requires the State's emission limitations to be incorporated into title V operating permit requirements. This is a State responsibility and is not a required component of related section 111(d)/129 State Plans. Section 5.0 of this document discusses the title V permit requirements for HMIWI.

2.2.3 Source Responsibilities

Developing Compliance Plans and Schedules. Hospital/medical/infectious waste incinerator owners and operators must work with the State to develop a compliance Plan and retrofit schedule for the State Plan that are both workable and meet requirements established by the State to implement the Emission Guidelines. All HMIWI must either shut down within 1 year of EPA approval of the State Plan[1] or complete retrofits to comply with the emission limits not later than 3 years after section 111(d)/129 State Plan approval or by September 15, 2002, whichever is sooner. Critical information is needed about each HMIWI such as controls in place and extent of retrofit needed in order to support State Plan development and development of an emission inventory for all affected HMIWI as part of the public participation process (see section 3.4).

Upgrading or Retrofitting Facilities. Owners and operators must retrofit or upgrade their facilities to meet the emission limits on the compliance schedules established by the State.

Meeting Additional State Plan Requirements. In addition to completing the necessary retrofits, owners and operators are responsible for meeting other State Plan requirements. Facilities are required to comply with operator training and qualification requirements, inspection requirements (HMIWI meeting the small rural criteria only), and to develop a Waste Management Plan. Facilities are to report to the State their progress towards compliance, report ongoing testing and monitoring results, and keep required records to demonstrate compliance. Most of these requirements must be completed at the time of full compliance, with the exception of the operator training and qualification requirements and the inspection requirements, which must be completed within 1 year after State Plan approval.

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[1]In some cases sources planning to shut down may be granted an extension beyond the 1-year deadline if the State Plan contains the provisions outlined in section 60.39e(d) of subpart Ce.

Related Section 129 Programs. Owners and operators must apply for a title V operating permit in accordance with their State's part 70 applications process. These permits would include all applicable Federal and State requirements pertaining to air emissions, including the applicable requirements of the section 111(d)/129 State Plan. Every source subject to the HMIWI rule must have a title V permit, unless the source is a co-fired combustor or an incinerator which burns only pathological, low-level radioactive, and/or chemotherapeutic waste. Title V permit applications are due to the permitting authority no later than 36 months after promulgation of the Emission Guidelines. Under section 503(c) of the CAA, the permitting authority has 18 months to deny or issue the permit. Title V operating permits are discussed in more detail in section 5.0.

3.0 Required Elements of an Acceptable State Plan

Section 1.4 and Appendix B of this document contain summaries of the required elements of a State Plan. States may find this summary helpful in preparing section 111(d)/129 State Plans, and EPA will use it in reviewing the Plans. Table 3-1 summarizes the elements of the State Plan for HMIWI, provides citations from subparts B and Ce, and identifies the sections of this chapter that discuss each element.

Some components of a section 111(d)/129 State Plan duplicate existing State requirements and therefore will not add additional requirements. For example, most States require public notice for rulemaking consistent with 40 CFR Part 60, subpart B. Similarly, section 112 and title V of the CAA require various demonstrations of legal authority. To the extent that earlier demonstrations of legal authority by the State meet the requirements of 40 CFR Part 60, subpart B, the State will simply need to include copies of such demonstrations in the State Plan submittal including a copy of the State laws or regulations (if applicable).

3.1 Demonstration of Legal Authority

The section 111(d)/129 State Plan must demonstrate that the State has the legal authority under current State law to adopt and implement the emission standards and compliance schedules in the State Plan. The legal authority must support the legal mechanism selected by the State to implement the emission limits for HMIWI. The legal authority must be available to the State at the time the State submits its section 111(d)/129 State Plan to EPA [40 CFR Part 60, subpart B, section 60.26(c)]. As noted above, States must submit with the section 111(d)/129 State Plan copies of the laws or regulations that demonstrate the State's legal authority if a State law or regulation is the enforceable mechanism.

A State may use existing demonstrations of legal authority to meet the requirements of subpart B. Which existing authorities the State uses to implement the section 111(d)/129 requirements depends on the legislative structure of the State. This

Table 3-1. Summary of Requirements for Section 111(d)/129 State Plans[a]

Required Item	Reference in 40 CFR Part 60, Subpart B or Ce	Section of this Document
Demonstration that State has legal authority to carry out Plan	60.26(a) of subpart B	3.1
Enforceable mechanisms selected by the State to implement the Guidelines	60.24(a) of subpart B	3.2
Inventory of HMIWI, their emissions and information related to their emissions	60.25(a) and 60.25(c) of subpart B	3.3 and 3.4
Allowable emissions	60.24(b)(1) of subpart B and 60.33e of subpart Ce	3.5
Test methods and procedures used for determining compliance with the emissions standards	60.24(b)(2) of subpart B and 60.37e of subpart Ce	3.6
Provisions for monitoring HMIWI compliance status, including: 1. Legally enforceable procedures for requiring the maintenance of records and periodic reporting to the State for the determination of compliance, 2. Periodic inspections and testing, and 3. Testing, monitoring, recordkeeping, and reporting requirements specified in subpart Ce.	60.25(b) of subpart B and 60.36e, 60.37e, and 60.38e of subpart Ce	3.6
Operator training and qualification	60.34e of subpart Ce	3.7
Inspections	60.36e of subpart Ce	3.8
Waste Management Plan	60.35e of subpart Ce	3.9
Compliance schedules and legally enforceable increments of progress for HMIWI to achieve compliance	60.24(a) and 60.24(e)(1) of subpart B and 60.39e of subpart Ce	3.10
Certification that a public hearing was held before the State Plan was adopted and list of the attendees at the hearing and their affiliation, with a summary of their presentations and handouts	60.23(f)(1) and (2) of subpart B	3.11
State progress reports	60.25(f) of subpart B	3.12

[a] See text of section 3 and Appendix B of this document for additional discussion of the required elements of a State Plan.

implementation guidance provides the minimum requirements of section 111(d) and 129 pertaining to HMIWI, and leaves the State flexibility to implement the requirements as long as provisions are enforceable under State law.

A State must include in its demonstration of existing legal authority a showing that it has the authority to:

1. Adopt emission standards (including stack opacity) and enforceable conditions (see section 3.2) as well as compliance schedules applicable to the designated facilities and pollutants for which the section 111(d)/129 State Plan is submitted;

2. Enforce the relevant laws, regulations, standards and compliance schedules referenced in section 111(d) and section 129 and seek injunctive relief and prevent restart of HMIWI that have shut down;

3. Obtain information necessary to determine compliance;

4. Require reporting and recordkeeping, operator training and qualification, equipment inspections, and testing;

5. Require the use of monitors and require emission reports of HMIWI owners/operators;

6. Make emission data available to the public; and

7. Require a Waste Management Plan.

Demonstrations of legal authority can take several forms. States that use a legal mechanism other than rulemaking to implement the Emission Guidelines should submit legal documentation, preferably an opinion by the State's Attorney General, that the State possesses the adequate authority to implement and enforce the section 111(d)/129 State Plan using that legal mechanism.

A State governmental agency other than the State air pollution control agency may be assigned responsibility for carrying out a portion of a section 111(d)/129 State Plan, provided that the State demonstrates that the State governmental agency has adequate authority [section 60.26(e)]. The State may authorize a local agency to implement a portion of the

Section 111(d)/129 State Plan provided that the local agency demonstrates that it has adequate legal authority to implement that portion of the Plan and the State is not relieved of responsibility [section 60.26(e)].

3.2 Criteria for an Adequate Enforceable Mechanism

Many States that have HMIWI covered by the Guidelines will develop section 111(d)/129 State Plans that use State rules as the legal instrument to enforce the Emission Guidelines. However, States may use alternative mechanisms to implement the Emission Guidelines. An essential element of a section 111(d)/129 State Plan is the emission standards, which 40 CFR Part 60, subpart B section 60.20(f) defines as "a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, or prescribing equipment specifications for control of air pollution emissions." For section 111(d)/129 State Plans, EPA interprets the term "regulation" in section 60.22(f) to include - in addition to a uniform State requirement or State rule - other mechanisms that are legally enforceable under State law. For example, depending on the applicable State law, enforceable mechanisms that might be used as the vehicle for implementing HMIWI Emission Guidelines may include a regulatory or administrative order, a compliance order, or a State operating permit.

A State may select other enforceable mechanisms provided that the State demonstrates that it has the underlying authority and demonstrates that the selected mechanism is State enforceable. In addition, a State may have the authority under its State law to incorporate the Emission Guidelines directly into its title V permit applications as its enforceable mechanism. Whether a State can use title V as the enforceable mechanism is a question of State law. The title V operating permit program is not sufficient on its own to confer Federal recognition of emission limits and other requirements contained in the Emission Guidelines as meeting the requirements listed in Table 3-1. That is, there must be underlying State authority.

Note that the pollutants that must be regulated under the HMIWI Emission Guidelines are a combination of criteria and hazardous air pollutants. Generally, States have adequate authority under their air pollution statutes to regulate both criteria pollutants and

hazardous air pollutants through a variety of mechanisms. As mentioned earlier, the State legal authority must be in place and effective at the time of State Plan submittal.

If the State relies on a mechanism that is not a State rule to implement the Emission Guidelines, such as a regulatory order, the State must document in the State Plan how the selected mechanism ensures that the HMIWI will meet the requirements of the EG and attach a copy of the enforceable mechanism. If a State rule is used, only citations from the overall rule and copies of the sections pertaining to HMIWI are required. The State does not have to submit a copy of the entire rule.

The State may submit a section 111(d)/129 State Plan that relies on the requirements in the SIP to meet the section 111(d)/129 emission standard for a particular pollutant, where they are found to be adequate. If the State relies on existing or revised SIP emission limits to implement the section 111(d)/129 HMIWI emission standards, the State Plan must cite the SIP and the date it became effective. The State must also document how the SIP assures that the requirements of 111(d)/129 are met. In all cases, the mechanism(s) must be in place at the time of Plan submittal.

A reduced demonstration of authority is allowed where all HMIWI in a State have already shut down or will shut down within 1 year of Plan approval. Such demonstration of legal authority does not need to point to an enforceable mechanism which orders a plant to shut down. Instead, the State need only demonstrate what mechanisms (e.g., State operating permit program) are available to the State to prevent plants from resuming operations until an appropriate State Plan revision is approved.

The EPA emphasizes that the determination of whether a particular mechanism may be used to enforce the Emission Guidelines in a particular State is a question of State law; the State law must give the State the requisite authority to enforce the emission limit using the legal mechanism identified by the State. Thus, a mechanism (e.g., a regulatory order) that is approvable for one State under its State law might not be approvable in another State under the law in that State.

3.3 Source Inventory

A complete source inventory of affected HMIWI in the State regulated by the Emission Guidelines must be submitted as part of the section 111(d)/129 State Plan [40 CFR Part 60, subpart B, section 60.25(a)]. Sources affected by the Emission Guidelines that must be included in the State's source inventory include: (1) HMIWI, (2) co-fired combustors, and (3) incinerators burning only pathological, low-level radioactive, and chemotherapeutic waste alone or in combination. Each of these three types of combustors are defined in section 60.51c of subpart Ec. The HMIWI are subject to all of the subpart Ce requirements. Co-fired combustors and incinerators burning pathological, low-level radioactive, and chemotherapeutic waste are only required to notify the Administrator of a exemption claim and to keep certain records. Nevertheless, these sources are affected by the Emission Guidelines and thus, must be included in the source inventory. In addition, States are encouraged to make a reasonable effort to include sources which have shut down their incinerator but, which still have the capability of resuming operation.

In cases where a facility has shut down its HMIWI and does not intend to resume operation, the HMIWI may be left off of the State's source inventory if the State determines that the HMIWI is inoperable. Criteria for determining whether an incinerator is inoperable could include, but are not limited to one or more of the following conditions:

1. Waste charge door welded shut;
2. Stack/by-pass stack removed;
3. Combustion air blowers removed; and/or
4. Burners or fuel supply removed.

States should use their best judgement to ensure that a facility has taken steps to render the HMIWI inoperable before omitting the HMIWI from their source inventory.

3.4 Emission Inventory

An emission inventory, based on the HMIWI source inventory, for the pollutants regulated by the Emission Guidelines is required by 40 CFR Part 60, subpart B, section 60.25(a) and is to be included in the section 111(d)/129 State Plan. The emissions inventory, as well as the source inventory, must be made available to the public at the public hearing and presented with the applicable emission standards. The inventory data should include CEMS data, actual test data, or estimates of 1997 emissions where practicable. Means of estimating emissions from HMIWI are readily available and are discussed in section 3.4.1 below and in Appendix G. It may be more difficult to estimate emissions from co-fired combustors and incinerators burning only pathological, low-level radioactive, and chemotherapeutic waste due to the mixtures of wastes combusted. Unlike HMIWI, co-fired combustors and incinerators burning pathological, low-level radioactive, and chemotherapeutic waste are not required to be subject to the emission limits in the State Plan. Therefore, while States are encouraged to include these sources in their source inventories, States may elect to leave these units out of the emissions inventory. Likewise, States may choose to leave incinerators which have shut down out of their emissions inventory since these sources would have zero emissions.

3.4.1 Emission Estimation Methods

Estimates of emissions for the emission inventory can be derived from a variety of methods. To the degree that a variety of types of data are available, the usually preferred hierarchy for estimating emissions is listed below:

1st choice.	Where already available, continuous emission monitoring systems (CEMS) data that provides a continuous record of emissions over an extended and uninterrupted period of time.
2nd choice.	Where already available, stack sampling results.
3rd choice.	Emission factors:

a. AP-42/FIRE[2] emission factors rated "A" through "D"--based on source tests performed at one or more facilities within an industry ("A" is the highest rating) or EPA emission factors generated from data used in the development of the HMIWI Emission Guidelines (presented in Appendix G).

b. State emission factors--possibly more optimized to local or regional conditions.

c. Industry emission factors.

d. AP-42/FIRE emission factors rated "E" and "U" ("E" is the lowest rating on the A through E scale, and "U" is unratable).

Emission factors that apply to HMIWI are included in Appendix G and can be used for developing the required emission inventory. These emission factors were generated based on data used for development of the Emission Guidelines and are appropriate for developing the emission inventory to be submitted in the section 111(d)/129 State Plans due September 15, 1998. States can also use their own emission factors or emission factors from AP-42.[3] Where emission factors are used, the AP-42 *Compilation of Air Pollutant Emission Factors*, provides preferred emission estimation methods. Example calculations for estimating emissions from emission factors are provided in AP-42. Where emissions data from actual testing are already available and are thought to be representative, the data should be used in place of emission factors. Additional testing is not required for the inventory in the State Plan where data are not available.

3.4.2 Required Emission Summary Reports

A summary of emissions should be submitted with the section 111(d)/129 State Plan. It should include, at a minimum, the emission rate of each of the designated pollutants for

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[2]The *Factor Information Retrieval System* (FIRE) is factor retrieval software that is available from the CHIEF bulletin board or by calling Info-CHIEF hotline at (919) 541-5285.

[3]AP-42 is the common name for the EPA document entitled *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition*, January 1995, available from GPO or from the CHIEF bulletin board.

each HMIWI. These values should be provided with the corresponding emission standards to show the relationship between measured or estimated emissions and the amounts of such emissions allowed by the standard.

3.4.3 Annual Emission Reporting

In addition to the initial emission inventory required for the section 111(d)/129 State Plan, 40 CFR Part 60, subpart B section 60.25(e) also requires States to submit progress reports as part of the annual report to EPA submitted under 40 CFR Part 51, sections 51.321 through 51.323. These annual reports must update the emissions inventory for sources that achieve compliance, sources that are new or modified, sources that have shut down, and sources whose emissions have changed more than 5 percent from the most recently submitted emission data. If none of the above events occur, then the State only needs to change the year (i.e., the State can still use the data from the previous year).

3.4.4 Reporting to AFS

Emission data must be reported to the Aerometric Emissions Information Retrieval System Facility Subsystem (AFS) as specified in Appendix D to 40 CFR Part 60. The AFS is a repository of emission information for stationary sources that has now superseded the National Emissions Data System (NEDS) described in 40 CFR Part 60 Appendix D.

3.5 Compliance with Emission Limitations

Hospital/medical/infectious waste incinerators must either retrofit controls to comply with the emission limitations in the State Plan or shut down their incinerator. The State Plan must include emission limitations that are at least as protective as the Emission Guidelines and also must address non-operating HMIWI (unless the HMIWI is inoperable) and HMIWI that will shut down rather than retrofit air pollution control equipment.

Under section 129(b)(2), the section 111(d)/129 State Plans must include emission limits that are "at least as protective as" those in the HMIWI Emission Guidelines (40 CFR Part 60, subpart Ce). The emission limits for the nine HMIWI pollutants are found in subpart Ce (Appendix M) and the Fact Sheet (Appendix C).

The section 111(d)/129 State Plan must include limitations for all of the pollutants in subpart Ce. Section 60.33e of subpart Ce specifies emission limits for PM, CO, Cd, Pb, Hg, SO_2, HCl, dioxins/furans, and NO_x. All of these limits are in units of concentration. For example, the PM and metals limits are in units of milligrams per dry standard cubic meter exhaust. The metals limits are also expressed in terms of percent reduction across the air pollution control device (if applicable). The dioxin/furan limit is also a concentration limit (nanograms per dry standard cubic meter for total and toxic equivalent quantity [TEQ]). The HCl limits expressed as either a concentration (parts per million by volume) or a percent reduction across the pollution control device (if applicable). The SO_2, NO_x, and CO limits are concentration limits in parts per million by volume.

To be approvable, the section 111(d)/129 State Plan must include emission limits in dimensions identical to the Guidelines, or alternative formats demonstrated to be at least as protective as the concentration limits or percent reductions specified for each pollutant in subpart Ce. Other State programs and permits may include limitations in the form of emission rates (e.g., pounds per hour) or ambient air concentrations; these types of limitations are <u>not</u> required to be included in the section 111(d)/129 State Plan. If a State Plan uses any format for emission limitations other than those in subpart Ce, the State must demonstrate that these emission limitations are at least as protective as those in subpart Ce.

In addition to emission limits for the nine pollutants regulated by the Emission Guidelines, section 111(d)/129 State Plans must also include, among other things, requirements for stack opacity [section 60.33e], operator training and qualification requirements [section 60.34e], requirements for equipment inspections (small rural HMIWI only) [section 60.36e], and requirements for development of a Waste Management Plan [section 60.35e].

3.6 Testing, Monitoring, Recordkeeping, Reporting and Other Source Requirements

The section 111(d)/129 State Plan must include requirements for the testing and monitoring, reporting and recordkeeping, operator training and qualification, Waste Management Plans, and the inspection provisions from the Emission Guidelines.

These provisions are specified in the HMIWI Emission Guidelines (subpart Ce). These include, in particular:

1. The performance testing methods listed in section 60.56c of subpart Ec [40 CFR Part 60, subpart Ce, section 60.37e],

2. The monitoring requirements listed in section 60.57c of subpart Ec [40 CFR part 60, subpart Ce, section 60.37e],

3. The reporting and recordkeeping provisions listed in section 60.58c of subpart Ec [40 CFR Part 60, subpart Ce, section 60.38e],

4. The operator training and qualification requirements listed in section 60.53c of subpart Ec [40 CFR Part 60, subpart Ce, section 60.34e].

5. The waste management guidelines listed in section 60.55c of subpart Ec [40 CFR Part 60, subpart Ce, section 60.35e], and

6. The inspection guidelines listed in section 60.36e of subpart Ce (small rural HMIWI only).

The Emission Guidelines require periodic performance tests and monitoring of specific operating parameters. Each facility must maintain records of the performance test and specified operating parameters for 5 years. The facility must submit annual reports if it is in compliance and semiannual reports if it exceeds emission standards or operating parameter limits. Details of these requirements are contained in subpart Ce (Appendix M).

A State Plan that incorporates the testing, monitoring, reporting, and recordkeeping requirements specified in subpart Ce will be consistent with the State Plan

requirements in subpart B. Under section 60.25b of subpart B, State Plan requirements for monitoring compliance must include the following:

1. Legally enforceable requirements that require owners and operators to keep records of the nature and amount of emissions and any other information that may be necessary to enable the State to judge compliance. This information must be reported periodically to the State. (Subpart Ce requires such records and reports.)

2. Legally enforceable requirements that provide for periodic inspection and testing. (Subpart Ce requires periodic testing and monitoring of operating parameters.)

3. Provisions for making reports of emissions, correlated with the emission standards that apply available to the general public.

3.7 Operator Training and Qualification Requirements

As specified in section 60.34e of the subpart Ce Emission Guidelines, State Plans are to require that each facility have at least one trained and qualified operator on duty or on-call. The trained and qualified HMIWI operator must pass an HMIWI operator training course which is either State-approved or meets the requirements specified in the Guidelines. Also, State Plans are to require each facility to develop site-specific information regarding HMIWI operation. State Plans are to require each employee involved with the operation of the HMIWI to review the operating information developed for the HMIWI each year. State Plans are to require operator training and qualification requirements within 1 year following EPA approval of the State Plan.

3.8 Inspection Requirements

State Plans must require facilities operating small existing HMIWI meeting the "rural" criteria to conduct annual equipment inspections. Section 60.36e of subpart Ce lists the components of the HMIWI which State Plans must require facilities operating small rural HMIWI to inspect. State Plans are to require an initial equipment inspection for small rural HMIWI within 1 year following EPA approval of the State Plan. From then on, State Plans are to require facilities operating small rural HMIWI to conduct annual equipment inspections.

According to section 60.36e(a)(2) of subpart Ce, State Plans are to require such facilities to complete any necessary equipment repairs within 10 HMIWI operating days following an equipment inspection. State Plans may allow repairs to be completed after 10 operating days, provided that the State supplies the facility with written permission and a date by which all repairs are to be completed.

3.9 Waste Management Plan Requirements

Section 60.35e of subpart Ce requires State Plans to ensure that facilities develop a Waste Management Plan that identifies the feasibility and approach to separate certain components of the solid waste stream from the health care waste stream. The Waste Management Plan requirements in State Plans are to be at least as protective as the requirements for Waste Management Plans under section 60.55c of subpart Ec. State Plans are to require facilities to submit their Waste Management Plan within 60 days following their initial performance test.

When developing their Waste Management Plans, facilities are to consult "An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities," a 1993 publication by the American Society for Health Care Environmental Services of the American Hospital Association, Chicago, Illinois. This document is available for purchase from the American Hospital Association (AHA) Service, Inc., Post Office Box 92683, Chicago, Illinois 60675-2683. You may inspect a copy at EPA's Air and Radiation Docket and Information Center (Docket A-91-61, Item IV-J-124), Room M-1500, 401 M Street SW, Washington, DC or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

3.10 Compliance Schedules

To comply with the emission limits contained in the section 111(d)/129 State Plan, existing HMIWI may need to retrofit emission controls. The State Plan must contain schedules for retrofitting these HMIWI. The elements included in a compliance schedule are listed in Table 3-2.

The retrofit schedules for HMIWI are developed by the State air pollution control agency considering input from the public and input from the HMIWI owners and operators. The Emission Guidelines place certain restrictions on retrofit schedules. Retrofit schedules can extend up to 3 years after section 111(d)/129 State Plan approval, but no retrofit schedule can extend beyond September 15, 2002.

The section 111(d)/129 State Plan must also specify legally enforceable increments of progress toward compliance for HMIWI that have compliance or retrofit schedules that extend past 1 year beyond approval of the section 111(d)/129 State Plan. In some cases, HMIWI may shut down as of September 15, 2002 or 3 years after State approval, whichever is earlier, complete a retrofit, and then reopen when retrofits are completed.

3.10.1 Retrofit Required

The subpart Ce Guidelines are "performance standards," that is, the standards do not prescribe one control system over another but rather, the HMIWI owners and operators can choose the actual equipment selected for retrofit at a plant that they believe will achieve the emission limits. However, for illustrative purposes, the text below discusses control technology retrofits assuming one technology.

Control systems for the regulated HMIWI pollutants can be considered as two sub-groups: (1) combustion system upgrades -- referred to as "good combustion;" and (2) acid gas/PM scrubbing systems . "Good combustion" controls PM, CO, and organic emissions (e.g., dioxin/furan). The acid gas/PM scrubbing system is the more expensive control system. The acid gas/PM scrubbing system controls multiple pollutants including dioxin/furan, Pb, Cd, Hg, PM, and HCl. The Emission Guidelines are based on add-on control systems of varying PM-control efficiencies for all HMIWI except units that fall within the small rural criteria (discussed in section 2.1 and Appendix D). Units at facilities meeting the small rural criteria

Table 3-2. Schedule for HMIWI Compliance with the HMIWI Emission Guidelines

Activity	Date
State Plan submittal	September 15, 1998
State Plan approval	March 15, 1999
If not in compliance by this date, need enforceable increments of progress for HMIWI	March 15, 2000
Submit a final control plan	A set date in State Plan
Award contracts for control system	A set date in State Plan
Initiate construction or installation of control system	A set date in State Plan
Complete construction or installation of control system	A set date in State Plan
Submit title V permit application	No later than September 15, 2000
Final compliance date for HMIWI	No later than 3 years from approval of State Plan[a] or September 15, 2002, whichever is earlier, or shut down by that date
Reports of periodic performance test data	Annually after compliance date, if in compliance. Semiannually after compliance date, if the emission limits or operating parameters are exceeded

[a] Section 129 does not preclude a State from requiring earlier compliance dates.

may elect to comply with emission limits based on the use of good combustion alone (i.e., without an acid gas/PM scrubbing system).

3.10.2 Retrofit Schedules for HMIWI

Under subpart Ce, HMIWI completing retrofits must be in compliance with the Emission Guidelines within 3 years after approval of the State Plan or by September 15, 2002, whichever is earlier. Note, however, that enforceable increments of progress are required for units with compliance schedules extending more than 1 year after State Plan approval. State Plans may allow units to shut down by the specified date and restart after completing the retrofit.

3.10.3 Increments of Progress

Compliance schedules for HMIWI with compliance dates that extend more than 1 year after State Plan approval must include legally enforceable increments of progress towards compliance as required by section 60.24(e) of subpart B. Each increment of progress from section 60.21(h) of subpart B must have an enforceable compliance date in the section 111(d)/129 State Plan. The State Plan may include such additional increments of progress as may be necessary for close and effective supervision of progress toward final compliance. Section 60.39e(c) of subpart Ce suggests nine other increments of progress which are discussed below.

The minimum five increments of progress required by section 60.21(h) of subpart B for each HMIWI within a State are as follows:

1. Submitting a final control plan. This may be a brief document or letter describing the controls that the source will use to comply with the emission limitations and other requirements. In most cases, the source, public, and State will have discussed this information as part of the State process for development of the compliance schedule for the draft State Plan before the State Plan is submitted to EPA;

2. Awarding contracts for control systems or process modifications or orders for purchase of components;

3. Initiating on-site construction or installation of the air pollution control device(s) or process changes;

4. Completing on-site construction or installation of control equipment or process changes; and

5. Final compliance.

All five increments of progress for HMIWI can be fixed calendar dates or set as floating dates. For increments one to four, the floating dates can be tied to either the date of the approval of the State Plan or the date of a local permit issuance. For example, the date for submitting a final control plan could be set as 3 months following approval of the State Plan. If

an increment of progress is tied to the date of a permit issuance, the State Plan must identify the specific permit.

The fifth increment of progress, the date for final compliance, can be set as a calendar date or a floating date. As a floating date, it can be tied only to the date of the approval of the State Plan, not to the date of permit issuance, and must include the limitation that the date in no case can be later than 3 years from State Plan approval or September 15, 2002, whichever is earlier (unless the HMIWI will shut down).

Additional suggested increments of progress are listed in sections 60.39e(c)(1) through (9) of subpart Ce. Some of these suggested increments of progress are already required by subpart B. The remaining suggested increments of progress may be included in the section 111(d)/129 State Plan as enforceable increments of progress with compliance dates, as non-enforceable increments of progress with reporting requirements only, or they may be left out of the section 111(d)/129 State Plan entirely.

The additional suggested increments of progress from subpart Ce are:

1. Date for submitting a petition for site specific operating parameters;
2. Date for obtaining services of an architectural and engineering firm regarding the air pollution control device(s);
3. Date for obtaining design drawings of the air pollution control device(s);
4. Date for ordering the air pollution control device(s);
5. Date for obtaining the major components of the air pollution control device(s);
6. Date for initiation of site preparation for installation of the air pollution control device(s);
7. Date for initiation of installation of the air pollution control device(s);

8. Date for initial startup of the air pollution control device(s); and

9. Date for initial compliance test(s) of the air pollution control device(s).

The section 111(d)/129 State Plan may include one set of increments with compliance dates applicable to all HMIWI within the State or it may tailor compliance dates to individual HMIWI to address specific issues. In all cases, the enforceable increments of progress must be arranged chronologically, and the compliance dates must be set to ensure full compliance with the applicable requirements *as expeditiously as practicable* [section 60.24(c) of subpart B] but not later than 3 years after State Plan approval, or September 15, 2002, whichever is earlier. For example, a State Plan that requires an HMIWI to "submit a final control plan and to award contracts no later than the third year of the compliance schedule" will likely be disapproved because the increments are too close to the end of the compliance window, do not appear to ensure expeditious progress, and thus jeopardize timely compliance, unless the HMIWI plan to shut down. Although there may be HMIWI-specific reasons for other schedules, EPA would expect contracts to be awarded within the first year for HMIWI taking longer than 1 year to comply. Depending on the extent of the retrofit, EPA would expect on-site construction to be completed in the second or third year of the compliance schedule.

3.10.4 HMIWI Shutdowns

Hospital/medical/infectious waste incinerators that are planning shut down rather than meet the Emission Guidelines must be identified in the State Plan. State Plans must specify that HMIWI planning to shut down must do so by a specific calendar date which is not later than 1 year after State Plan approval. As discussed in section 3.3, HMIWI which shut down must be included in the State's source inventory unless the HMIWI is rendered inoperable. In some special cases facilities may be allowed more than 1 year after State Plan approval to shut down provided that the State Plan contains provisions for allowing facilities to petition the State for an extension. Section 60.39e(d) of subpart Ce outlines the specific provisions State Plans must include in order to allow facilities more than 1 year to shut down.

The purpose of Section 60.39e(d) is to allow States to provide temporary relief to those unique facilities which are planning to shut down and have no waste disposal options other than onsite incineration. One example of a facility planning to shut down which has special needs for an extension beyond the 1-year compliance deadline would be a facility planning to install an onsite alternative waste treatment technology (e.g., an autoclave) which will not be available for installation until after the 1-year deadline. Such a facility must be able to demonstrate that there are no waste disposal options (e.g., commercial disposal) other than onsite incineration in the interim while the autoclave is being installed. A second example of a facility planning to shut down that may need an extension beyond the 1-year deadline would be a facility planning to contract with a commercial hauler that, for some unusual reason, is unable to secure a contract by the 1-year deadline.

Under such special circumstances States may allow facilities to petition the State after approval of a State Plan for additional time to come into compliance by shutting down their HMIWI. In order to allow facilities an extension, the State Plan must contain provisions for granting or denying petitions for an extension beyond the 1-year deadline. Section 60.39e(d) of subpart Ce requires that States have sources to submit the following information in time to allow the State adequate opportunity to grant or deny the extension before the 1-year compliance deadline:

1. Documentation of the analysis undertaken to support the need for an extension, including an explanation of why up to 3 years after EPA approval of the Sate Plan is sufficient while 1 year after EPA approval the State Plan is not sufficient;

2. An evaluation of the option to transport the waste offsite to a commercial medical waste treatment and disposal facility on a temporary or permanent basis; and

3. A plan that documents measurable and enforceable incremental steps of progress[4] to be taken towards compliance with the emission guidelines.

When a petition for an extension is granted, States may allow sources planning to shut down up to 3 years after EPA approval of the State Plan to come into compliance with the Emission Guidelines by shutting down. However, States are to use their best judgement to determine if the source can shut down before the date 3 years after EPA approval of the State Plan. In cases where a source requesting an extension is able to shut down before the 3-year deadline, the State should require the source to shut down as soon after the 1-year compliance deadline as possible.

Commercial medical waste disposal services, which collect medical waste from a facility and transport it to a central disposal site (usually a commercial HMIWI), are operated in many areas of the country. There are some locations where commercial disposal services are not readily available at a reasonable cost because the hauler would have to travel long distances. However, in many cases, the services of a commercial medical waste disposal company are available can be acquired in a short period of time. Sources installing an onsite alternative waste treatment technology, in most cases, could contract with a commercial disposal company in the interim period between the 1-year compliance deadline and the time when the onsite alternative is installed. Therefore, section 60.39e(d) requires State Plans including provisions for an extension to have the source requesting an extension document reasons why the services of a commercial disposal company can not be reasonably obtained.

Sources planning to shut down which request an extension are also to provide the State with a plan that documents the incremental steps of progress that the facility intends to take to demonstrate that it is in the process of shutting down. The source plan should contain completion dates for each of the increments of progress contained in the plan. The following are

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[4]The incremental steps of progress for units planning to shut down are <u>not</u> the same as the incremental steps of progress for facilities planning to retrofit their HMIWI and continue operation. The increments of progress for facilities planning to shut down are intended to demonstrate that the facility is in the process of shutting down. Specific increments are discussed later in this section.

some suggested increments of progress that sources requesting extensions to install onsite alternative treatment technologies may use to demonstrate to the State that they are in the process of shutting down their HMIWI:

1. Going under contract with an alternative treatment technology vendor;
2. Initiating onsite construction or installation of the alternative treatment technology;
3. Completing onsite construction or installation of the alternative treatment technology;
4. Shutting down the existing HMIWI; and
5. Rendering the existing HMIWI inoperable[5].

The following are some suggested increments of progress that sources requesting extensions to contract with a commercial disposal company on a permanent basis may use to demonstrate to the State that they are in the process of shutting down their HMIWI:

1. Obtaining price quotes from commercial disposal services;
2. Going under contract with a commercial waste treatment and disposal facility;
3. Shutting down the existing HMIWI; and
4. Rendering the existing HMIWI inoperable.[5]

3.11 Public Hearings

Public participation, under the provisions of the CAA, is an important right and responsibility of citizens in the State process of developing, adopting, and implementing section 111(d)/129 State Plans. As with SIPs for criteria pollutants, EPA regulations in 40 CFR

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[5]Rendering the HMIWI inoperable is not necessary for a source to be shut down; however, any HMIWI capable of operation must be included on the States source inventory (see section 3.3).

Part 60, subpart B, make it clear that citizen input on section 111(d)/129 State Plans is encouraged in order to help define appropriate emission standards and retrofit schedules. Under subpart B, some minimum public participation requirements are as follows:

1. Reasonable notice of opportunity for one or more public hearing(s) at least 30 days before the hearing.

2. One or more public hearing(s) on the section 111(d)/129 State Plan (or revision) conducted at location(s) within the State, if requested.

3. Date, time, and place of hearing(s) prominently advertised in each region affected.

4. Availability of draft section 111(d)/129 State Plan for public inspection in at least one location in each region to which it will apply.

5. Notice of hearing provided to:

   a. EPA Regional Administrator
   b. Local affected agencies
   c. Other States affected

6. Certification that the public hearing was conducted in accordance with subpart B and State procedures.

7. Hearing records must be retained for a minimum of 2 years. These records must include the list of commentors, their affiliation, summary of each presentation and/or comments submitted, and the State's responses to those comments.

3.12 State Progress Reports to EPA

States must commit in the section 111(d)/129 State Plan to submit annual reports on progress in the implementation of the Emission Guidelines to the EPA. These reports can be incorporated into the reports required by 40 CFR section 51.321. Inclusion in this SIP report is intended to avoid duplicative reports. Each progress report should include compliance status, enforcement actions, increments of progress, identification of sources that have shut down or started operation, emission inventory information for sources that have started operation, updated

emission inventory and compliance information, and copies of technical reports on all performance testing and monitoring, including concurrent process data.

States may want to include additional information on periodic inspection and testing activities, emission and parameter exceedances, QA/QC, outreach activities, title V or other permit condition compliance status, and compliance assistance activities.

Some States and EPA Regional Offices have developed more specific or tailored reporting and recordkeeping procedures via Memoranda of Agreements, Program Specific Guidance for section 105 Grants, and the Timely and Appropriateness Guidance. For example, some EPA offices prefer that the States retain the performance test reports until EPA requests review as part of a compliance determination or other action. The State and EPA will continue to have discretion on the format of the annual reports.

4.0 Requirements for Co-fired Combustors and Incinerators Burning Only Pathological, Low-level Radioactive, and Chemotherapeutic Waste

Co-fired combustors are defined as units combusting 10 percent by weight or less hospital waste and/or medical/infectious waste with other fuels or wastes (e.g., coal, municipal solid waste). The Emission Guidelines exempt co-fired combustors and incinerators burning only pathological, low-level radioactive, and chemotherapeutic waste from most of the requirements under the Emission Guidelines. However, State Plans are to require these units to notify the Administrator of an exemption claim and to keep certain records per section 60.32e(b)(1-2) (pathological, low-level radioactive, and chemotherapeutic) and 60.32(i)(1-3) (co-fired) of the HMIWI rule.

Assuming an approved State Plan is in effect, exemption claims are to be sent to the head of the State air pollution control agency responsible for implementing the Emission Guidelines through the State Plan, with a carbon copy (cc) of the exemption claim to the appropriate EPA Regional Office. A list of State and Regional contacts is provided in Appendix F. Exemption claims must be received by the State agency and EPA Regional Office within 1 year following State Plan approval, providing adequate time for the State to determine if an exemption is in order. Appendix N1 contains an example exemption claim form for co-fired combustors. Appendix N2 contains an example exemption claim form for incinerators burning only pathological, low-level radioactive, and/or chemotherapeutic waste.

Facilities operating co-fired combustors must provide the State with an estimate of (1) the amount of hospital and medical/infectious waste combusted, and (2) the amount of other fuels and wastes being combusted. This information may be submitted to the State as part of the exemption claim. A place for information on the amounts of wastes and fuels burned has been included on the sample exemption claim form provided in Appendix N1.

In addition to submitting an exemption claim, facilities operating co-fired combustors must keep records on a calendar quarter basis on the weight of hospital waste and medical/infectious waste combusted and the weight of all other fuels and/or wastes combusted.

The Emission Guidelines do not require States that have facilities operating co-fired combustors to maintain records of each individual type of waste burned. Rather, the Emission Guidelines should be interpreted to mean that facilities must keep records of two categories of wastes: (1) the combined weight of hospital waste and medical/infectious waste, and (2) the combined weight of all other wastes and fuels burned at the co-fired incinerator.

Incinerators are not subject to subpart Ce during periods when only pathological, low-level radioactive, and/or chemotherapeutic waste are being incinerated, provided the facility submits an exemption claim and keeps certain records. Incinerators burning only pathological, low-level radioactive and/or chemotherapeutic waste must only keep records on a calendar quarter basis of periods of time when only pathological, low-level radioactive, and/or chemotherapeutic waste is burned.

As discussed in section 3.3, States must include co-fired combustors and incinerators burning only pathological, low-level radioactive and/or chemotherapeutic waste in their source inventory. However, these incinerators do not need to be included on the State's emissions inventory.

As of November 26, 1997, it is the EPA Office of Air Quality Planning and Standards interpretation of Part 70 that co-fired combustors and incinerators burning only pathological, low-level radioactive and/or chemotherapeutic waste are not required to obtain a title V permit as a result of the HMIWI Emission Guidelines because these units are exempt from the emission limits. Written confirmation from the Agency is pending at this time, and is expected in the next few weeks. States will be notified as soon as possible if there is a change in this interpretation. Otherwise, States should assume that these units are not subject to title V requirements under the HMIWI Emission Guidelines.[1]

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[1]Note that some co-fired combustors may already be subject to title V requirements under other standards, and exemption from title V under the HMIWI Emission Guidelines does not nullify the title V requirements under any other standard.

5.0 Title V Requirements for HMIWI

Title V of the Clean Air Act provides for a nationwide operating permit program which applies to all major sources and to certain other sources. The title V permit brings together in one document all of the Clean Air Act requirements that apply to a source. Title V permit applications clarify which requirements apply to each source, describe how compliance with those requirements is to be maintained and demonstrated, and provide an administrative mechanism for reconciling conflicting or duplicated requirements. All of the regulations applicable to each HMIWI will ultimately be incorporated into the title V permit for the affected source.

State air quality agencies implement the operating permit program pursuant to criteria in 40 CFR Part 70. The EPA will implement the title V program in Indian country until Tribes gain approval of their permitting program.

Whether a State can use title V as its enforceable mechanism is a question of State law. However, few States, if any, are expected to have the authority under their State law to incorporate the Emission Guidelines directly into their title V permits because, unlike Federal standards such as the NSPS, the Emission Guidelines are only guidelines and are not Federal regulations.

HMIWI That Are Located With Major Sources. If the incinerator is located at a major source, then the permit application for that source should have already been submitted to the permitting authority. Moreover, the permit application should identify the incinerator as an emissions unit. If a permit has been issued and if there are 3 or more years remaining on the permit term, then the permit needs to be revised to incorporate the applicable requirements for the HMIWI rule. If there are less than 3 years remaining on the permit term, then the permit does not need to be revised to include the rule's applicable requirements until permit renewal--bearing in mind that the sources are subject to the applicable requirements, even though the requirements are not yet contained in the permit. Owners and operators are reminded that they need to wait

until the State/Federal Plan has been approved before they can determine how much time remains on their permit term.

HMIWI That Are Not Located With Major Sources. For those incinerators that are not located with major sources, but are subject to the applicable requirements of the HMIWI rule, a complete title V permit application is due to the permitting authority no later than 36 months after promulgation of the HMIWI rule. Owners and operators of incinerators should be aware that if they have complete applications prepared before the 36 month deadline and if the permitting authorities are ready to accept applications, then there is no need to delay submitting the applications. The EPA encourages owners and operators to proceed with their permitting processes as soon as possible.

Co-fired Combustors and Incinerators Burning Only Pathological, Low-Level Radioactive, and Chemotherapeutic Waste. Because these sources are exempt from the emission limits, they are not required to obtain a title V permit.[2] This means that owners and operators of these sources will not be required by the title V operating permit program to collect data upon which compliance certifications are to be made or to submit compliance certifications. Thus, in order to ensure that such sources comply with the recordkeeping and notification requirements of section 60.32e(b)(1)-(2) (pathological, low-level radioactive, chemotherapeutic) and 60.32(c)(1-3) (co-fired), EPA suggests that States include sufficient authority in their State Plans and include these sources on their source invnetory to ensure the requirements are enforceable by the State. States should also apprise owners and operators of such sources to include in their exemption claim that the incinerators are not subject to title V. Such a statement could look like this:

> "This incinerator is not subject to title V because it meets the definition of an incinerator which combusts only pathological, low-level radioactive, and/or chemotherapeutic, or the definition of a co-fired combustor."

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[2]As of this writing, the Agency has not produced written confirmation of this interpretation of Part 70. If there is a change to this interpretation, Regions will notify States.

Contents of a Complete Permit Application. Section 70.5(c) of the operating permits rule (found at 40 CFR 70) specifies the information required to be contained in a permit application. However, according to White Paper for Streamlined Development of Part 70 Permit Applications, issued July 10, 1995, not all of this information is necessary to determine whether a permit application complete enough to begin processing. Section II.D of the White Paper identifies four elements of an administratively complete permit application. These elements include a definition of applicable requirements and a description of source status (major or minor); a compliance certification for the applicable requirements; enough clarity concerning the individual emission units so that the permitting authority can determine the permit issuance schedule; and a certification of truth, accuracy, and completeness.

For purposes of the HMIWI rule, a permitting authority could accept the following statements as a complete permit application:

> "County Hospital owns and operates a small HMIWI subject to the approved State/Federal Plan submitted to meet subpart Ce. County Hospital will meet the requirements of subpart Ce on a timely basis. I certify that this information is true, accurate, and complete.
>
> Jim Johnson, Responsible Official."

Note that specific requirements concerning emission limits, testing, monitoring, reporting, and recordkeeping would be added after the determination of administrative completeness but before a draft permit would be given to the public.

The following is the anticipated schedule for compliance with the title V permit requirements.

Assumed State Plan Submitted -	Date-
Emission Guidelines promulgated	09/97
State Plan submitted to EPA w/in 1 year	09/98
EPA approval of Plan w/in 6 months	03/99
Complete title V permit application due to permitting authority	by 09/00
State issues title V permit	by 09/01[3]
HMIWI in compliance with the EG	
w/in 3 years of Plan approval	03/02
but no later than 5 years after promulgation	by 09/02

Assuming Federal Plan Required -	Date-
Federal Plan, if no State Plan submitted	by 09/99
Complete title V permit application due to permitting authority by	09/00
EPA issues title V permit	by 03/02
HMIWI in compliance with requirements of section 129 no later than 5 years after promulgation	by 09/02

[3]Each State's Part 70 approved program will indicate how much time the permitting authority has to issue the permit.

Appendix A

Answers to Questions About the Emission Guidelines and State Plan Process

APPENDIX A--ANSWERS TO SOME FREQUENTLY ASKED QUESTIONS ON THE EMISSION GUIDELINES

This appendix includes frequently asked questions received by EPA on the HMIWI Emission Guidelines promulgated on September 15, 1997 and answers to the questions. Many of these questions were submitted to EPA during workshops offered on September 17, 1997 and September 18, 1997, broadcast by satellite. The questions are divided into several topics as follows:

Topic	Question Numbers
State Plan Requirements	1-21
Compliance Schedule and Increments of Progress	22-35
Standard Metropolitan Statistical Area (SMSA)	36-39
Legal Authority	40-43
Source/Emissions Inventory	44-51
Applicabiliy	52-81
Operator Training and Qualification	82-88
Compliance, Performance Testing, Monitoring, and Inspections	89-101
Waste Management Plans	102-104
Permits	105-109
Indian Country	110-112

STATE PLAN REQUIREMENTS

1. Must the State Plan be revised if--

A. . . . an existing source that has ceased operations wants to re-open before the compliance date?[1]

Answer: No, the State Plan does not need to be revised, provided the State Plan includes --and State procedure allows[2] --a generic compliance schedule to apply to "all other applicable sources" not listed individually in the State Plan. The source must remain shut down until it demonstrates that it has caught up to the generic schedule, as well as met all applicable increments of progress.

In addition, before re-opening, the source must have a complete title V operating permit application in place by September 15, 2000. The source may also need to undergo review under the State's New Source Review procedures.

One might ask then, if the State Plan is not re-opened, when does the public have the opportunity to comment? Since both of these procedures require public review, the title V and/or NSR procedures will provide notice to the public and industry.

B. . . .the State discovers an existing source after 2002?

Answer: No, there is no need to revise the State Plan to accommodate an existing source discovered after the final compliance deadline, assuming it has the generic applicability language discussed in question #1. The source must cease operations immediately and must remain closed until it can demonstrate compliance with the State Plan and that it has a title V permit. Since a longer compliance schedule with increments of progress is no longer an option for sources discovered after the statutory backstop final compliance deadline in the year 2002, there is no reason to revise the State Plan.

2. What if a State which believes they do not have any sources--and thus sends in a letter of negative declaration--subsequently discovers an existing source? Must the State submit a State Plan?

Answer: Yes, the State must submit a State Plan because section 129(b)(2) of the amended Clean Air Act says, "each State in which units are operating shall submit a State Plan." If the source were discovered before the statutory compliance deadline (~2002), then the source

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[1] Under sec. 129(b)(2), all sources must be in compliance by 3 years after State Plan approval or 5 years after promulgation of the EG, whichever is earlier.

[2] The exception to this response is a State which relies on an underlying authority other than a State rule. In this case, the State Plan will need to be revised if the underlying authority (e.g., administrative order, State operating permit) does not allow a generic compliance schedule.

is subject to the default compliance schedule discussed above, which is 1 year from State Plan approval. Be aware that the source must still be in compliance no later than 5 years from promulgation of the EG -- regardless of when the State Plan is finally approved.

As discussed in question #1, an existing source discovered after the compliance deadline must cease operations immediately. It cannot reopen until it has demonstrated compliance with the approved State Plan and has a title V operating permit in place per sec. 129(e).

3. What happens if a State misses a source and it is not in the State Plan inventory? Is the source still subject to the standard?

Answer: All sources, whether they're on the state's list or not, are subject to the standard. Section 60.24(e) of 40 CFR Part 60, Subpart B says, "Emission standards shall apply to all designated facilities within the State." "Designated facilities" are all those facilities which meet the definition in the emission guidelines ("EG") or the State's definition (if as stringent as the EG), whether they're on the State's inventory or not.

The State could choose to revise the State Plan in order to establish a separate, but equally protective compliance schedule for the newly discovered source. But in order to avoid the need to revise the State Plan to add the newly discovered source(s), States should be advised to include language which says that sources that are subject to the standard "include, but are not limited to," the inventory in the State Plan. States should also include language such as, "Should another source be discovered subsequent to this notice, there will be no need to reopen the State Plan. Sources discovered after approval of the State Plan will be subject to these requirements. Therefore, the State Plan will not need to be reopened."

The State Plan should also contain a generic compliance schedule that "all other applicable sources" not listed individually in the State Plan must comply with. The newly discovered source would be bound to that generic compliance schedule. If the source were discovered well into the compliance schedule and had already missed several increments of progress, it would have to shut down and remain shut down until it had demonstrated to the State that it had "caught up" to the compliance schedule.

Other language that must be in the State Plan:

- List in the enforcement section of the State Plan the consequences for sources not in compliance and the authority under which a State can shut down/close a source.

- Reference to sec. 129(f)(3) ("PROHIBITION") which prohibits a plant from operating if it does not comply with the standard.

4. What are the timelines for submission and approval of State Plans following promulgation of Emission Guidelines for HMIWI?

Answer: States must submit Plans within 1 year of EPA promulgation of the Emission Guidelines. Since HMIWI Emission Guidelines were promulgated on September 15, 1997 (62 FR 48347), State Plans are due by September 15, 1998. The EPA must approve or disapprove the Plan within 6 months of submittal. If a Plan is disapproved, specific reasons will be given. The State is encouraged to address the concerns and resubmit the Plan. If a State does not have an approvable Plan in place by September 15, 1999, a Federal Plan will go into effect on that date.

5. Under Section 129(b)(2) of the Clean Air Act, will EPA's approval or disapproval of a State Plan be a letter, Federal Register notice, or both?

Answer: The EPA's approval or disapproval will be published in the *Federal Register*. If the Plan is not approved, the notice will include reasons for disapproval.

6. What are the consequences to a State if they do not file their State Plan by September 15, 1998?

Answer: State Plans are due by September 15, 1998. The EPA is required to review and approve or disapprove State Plans within 6 months of submittal. For States which do not have an approvable State Plan in place by September 15, 1999, a Federal Plan go into effect on that date (September 15, 1999). States benefit from developing State Plans rather than receiving a Federal Plan because States have the opportunity to tailor the compliance schedule to individual sources and to develop a State rule more stringent than the Emission Guidelines.

7. Is there a reason why a State which has no medical waste incinerators and only MWC's which are exempt should adopt the HMIWI EG?

Answer: Be aware that a State which has only co-fired combustors (burn 10 percent or less hospital/medical/infectious waste) or incinerators that burn low-level radioactive, chemotherapeutic or pathological waste must still submit a State Plan in order to compel those sources to meet the record keeping and reporting requirements of section 60.32e.

If a State has no sources subject to the EG, then it is not required to submit a State Plan. However, the State may want to submit a State Plan in order to address the contingency that a source is discovered and the State wants the source to be subject to the specifics of a State Plan rather than deferring to the Federal Plan.

8. Are public hearings required prior to submittal of a State Plan?

Answer: Yes, adequate opportunity for public hearings is required. Under Subpart B, some minimum public participation requirements are as follows:

1. Reasonable notice of opportunity for one or more public hearing(s) at least 30 days before the hearing.

2. One or more public hearing(s) on the Section 111(d)/129 State Plan (or revision) conducted at location(s) within the State, if requested.

3. Date, time, and place of hearing(s) prominently advertised in each region affected.

4. Availability of draft Section 111(d)/129 State Plan for public inspection in at least one location in each region to which it will apply.

5. Notice of hearing provided to:

   a. EPA Regional Administrator
   b. Local affected agencies
   c. Other States affected

6. Certification that the public hearing was conducted in accordance with Subpart B and State procedures.

7. Hearing records must be retained for a minimum of two years. These records must include the list of commentors, their affiliation, summary of each presentation and/or comments submitted, and the State's responses to those comments.

If after adequate notice, no one requests a hearing, the hearing is not required.

9. Can a State incorporate by reference the EG?

Answer: No, because the EG is not written as direct requirements on the source but rather, as requirements for the State to ensure that their source requirements are at least as protective as the EG. The State may incorporate sections of the EG into their State rule such as the emission limits, operator training requirements, and record keeping requirements, and they may use the EG as a template for the State rule, but the EG cannot be simply incorporated by reference as a whole without changes or supplemental language to make it applicable to their sources.

The State can incorporate by reference the NSPS in its entirety because it is a Federal rule that is directly applicable to sources.

10. If the State has its own rule (e.g., CA, FL, NJ, NY, IL, NC) and the State rule is as protective as the Federal EG, does the State still have to submit a State Plan?

Answer: Yes, the State still needs to submit an approvable State Plan so that the public, EPA, and industry will be clear that the State is complying with the requirements of sections 129 and 111(d). In particular, the State must show that its State rule is at least as protective as the EG and how the State will ensure that the sources meet the applicable requirements. Also, the State Plan must include an inventory of all the affected sources in the State and satisfy the requirements for public review. In this case, where the State's existing rule would provide the legal authority, preparation of the State Plan should not require much effort beyond what the State has already done to promulgate their State rule.

11. How does a State demonstrate that its State rule is at least "as protective as" the EG? Is the burden of proof on EPA?

Answer: The burden of proof is on the State to show in the State Plan how the requirements in its State rule are at least as protective as the EG, including the increments of progress in the EG. The State must demonstrate this for each requirement that is different from the EG.

12. If a State has only "small" MWC's that need only keep records and report to the Administrator, must the State submit a State Plan or is a letter of negative declaration sufficient?

Answer: Per sec. 60.32e(e), only incinerators subject to the MWC rule for large MWC (Subparts Cb, Ea, or Eb) are exempt from the HMIWI rule.

Smaller MWC's exempt from the MWC rule by virtue of their size (less than 250 tons/day) and burning 10 percent or less hospital/medical/infectious waste need only notify the EPA Administrator of an exemption claim and keep records of wastes burned, per sec. 60.32e(c). These units burning 10 percent or less hospital waste and medical/infectious waste are called "co-fired combustors." Although co-combustors are not subject to the emission limits, a State Plan is necessary in order for the public to be aware of their existence and for States to ensure compliance with these record keeping/notification requirements.

13. There are approximately six HMIWI in operation in rural counties of one State. If all HMIWI burn 10 percent or less medical/infectious waste and burn the remaining 90 percent in trash (hospital waste) would these facilities be exempt from the Emission Guidelines? If it is documented that all sources stay within these parameters would the State Plan still need to be written? If the State does not write a Plan would the EPA step in and write a Federal Plan to regulate these six sources?

Answer: The "10 percent or less" criteria applies to both hospital waste and medical/infectious waste. That is, sources burning 10 percent or less hospital waste and medical/infectious waste are considered to be co-fired combustors. The units mentioned in the question above are not co-fired combustors. They are HMIWI because they burn 100 percent hospital waste and medical/infectious waste. Therefore, these facilities are subject to all the requirements of the Emission Guidelines, including the emission limits, and the State must submit a State Plan to cover these sources.

If a State only had co-fired combustors, then the State would still need to submit an abbreviated State Plan to include the sources on their inventory and to enforce the notification and record keeping requirements of the Emission Guidelines for co-fired combustors. Under the Emission Guidelines, co-fired combustors are required to notify the Administrator of an exemption claim and to keep records of the amounts of each type of waste and/or fuel burned. A State Plan is necessary to compel co-fired combustors to comply with the notification and record keeping requirements. In addition, if the co-fired combustors began burning more than 10 percent hospital waste and medical/infectious waste, then the State could have the authority under the State Plan to require the sources to comply with the State Plan provided it contained the generic language discussed in the answer to question #3, above.

If a State Plan is not submitted to cover such sources, a Federal Plan would become effective in that State on September 15, 1999.

14. When implementation plans are filed by the State, will they go to some central repository where they can be reviewed by the public at the same time when EPA is reviewing them?

Answer: The public will be given the opportunity to comment on the State Plans before they are submitted to EPA for review. States are required to provide opportunity for a public hearing to discuss the State Plan and to make copies of the State Plan available for public review prior to submittal to EPA. State Plans are to be submitted to the appropriate EPA Regional Office. The State Plans will not go to any central location where they may be reviewed by the public while EPA is reviewing the Plans. The EPA will publish a notice in the *Federal Register* regarding whether a State Plan has been approved or disapproved. If a Plan is not approved, the EPA will state the reasons for disapproval in the *Federal Register*.

15. On a case-by-case basis, under Section 111(d) Plan requirement [40 CFR Subpart B Section 60.24(f)], States have the flexibility to submit Plans that contain the application of less stringent emission standards or longer compliance times than required under the applicable Emission Guidelines. Does the "at least as protective as the EG" requirement of Section 129 of the Clean Air Act now eliminate the Plan flexibility provided under 40 CFR Section 60.24(f)?

Answer: Yes. State Plans for HMIWI are Section 111(d)/129 Plans and have additional requirements than State Plans developed under only Section 111(d). The "at least as protective" language in Section 129 of the Clean Air Act applies to HMIWI, and Section 60.24(f) of Subpart B is superseded. Section 60.24(f) of Subpart B was revised on December 19, 1995 (see 60 FR 65414) to allow Subpart Ce to specify that States could not allow less stringent limits or longer compliance times than specified in Subpart Ce.

16. Can a State develop a site-specific Plan rather than a generic HMIWI Plan?

Answer: The State must submit a State Plan. The Plan may include site-specific emission limits and compliance schedules, as long as the limits and schedules are as protective as the Emission Guidelines.

17. If there are conflicting requirements under Sections 111(d) and 129, what requirements take precedence?

Answer: If there are conflicting requirements, section 129 takes precedence over section 111(d) and the Subpart B rules developed to implement section 111(d). For more information on specific section 111(d) and 129 requirements, refer to chapter 1 of this document which presents a table showing the portions of Subpart B that apply to HMIWI and the portions that are revised by section 129.

18. Do emission limits in the State Plan need to be the same as the emission limits in the Subpart Ce Guidelines?

Answer: The emission limits in the State Plan must be "at least as protective" as the Emission Guidelines, and EPA recommends that the limits be presented in the same regulatory format as the Emission Guidelines, (e.g. concentration limits or percent reductions). If a regulatory format other than that used in the Emission Guidelines is used in a State Plan, then the State must show how the format correlates to the format in the Emission Guidelines and demonstrate that it is at least as protective as the Emission Guidelines.

19. Can a State Plan identify only air pollution control equipment to be retrofitted or must it include emission limits?

Answer: A State Plan must include emission limits at least as protective as the Emission Guidelines, and those limits must apply to each HMIWI. Equipment specification is not required, and alone, is unacceptable.

20. Do reporting requirements in State Plans apply to HMIWI operators or just State agencies?

Answer: The requirements apply to both. The State has responsibilities to develop the State Plan and to report implementation progress to EPA. The HMIWI owner must show expeditious progress on achieving compliance by the dates set and then show continuing compliance with the standard by annual compliance tests for various pollutants and operating parameter data, as specified in Subpart Ce.

21. Can the States incorporate the HMIWI progress reports into their 40 CFR section 51.321 annual report for SIPs?

Answer: Yes, provided that the HMIWI progress report satisfies the requirements of 40 CFR Section 51.321, HMIWI progress reports can be used to satisfy the SIP requirement. States

are encouraged to coordinate their efforts in order to minimize duplication of reporting requirements to ensure the most productive compliance and enforcement activities.

COMPLIANCE SCHEDULE AND INCREMENTS OF PROGRESS

22. When setting compliance schedules, can a State allow a source longer than 1 year from State Plan approval to comply without any increments of progress?

Answer: No, a source cannot be allowed to operate beyond 1 year after State Plan approval unless the State Plan provides for enforceable increments of progress that are identical to or "at least as protective as" the five increments of progress listed in section 60.21(h) of Subpart B.

In addition, State Plans that allow sources planning to shut down (not to retrofit) longer than 1 year to comply must require that such facilities provide documentation to support their request, as described in section 60.39e(d)(1)(i-ii). Such sources must also have, at a minimum, the five increments of progress from Subpart B. Since these sources are shutting down, not retrofitting, the increments would need to be revised. In keeping with the intent of the required increments of progress of Subpart B, EPA suggests the following six increments for such sources:

1. Source's plan for shut down
2. Contract with the vendor (off-site hauler or alternative waste treatment equipment)
3. Begin construction of alternative waste treatment equipment (if applicable)
4. Complete installation of alternative (if applicable)
5. Shut down incinerator
6. Dismantle incinerator

23. Can the State set the same compliance schedule for all sources in the State?

Answer: Yes, the State Plan could require all sources to be in compliance within 1 year of State Plan approval. It could also require sources of specified circumstances that meet the criteria additional time[3] to comply, provided the State Plan includes enforceable increments of progress at least as protective as the EG and there is a clear link between each source and a compliance schedule.

Even if a State chooses to prescribe individual compliance schedules for each of its currently known sources, EPA recommends that it still include in its State Plan a generic compliance schedule applicable to sources discovered after submittal of the State Plan directed to "all other applicable sources" that the inventory may miss.

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[3] Up to 3 years following State Plan approval or September 15, 2002, whichever is earlier.

24. Are increments of progress for the individual sources requesting extensions under sec. 60.39e(d) submitted with the State Plan or are they negotiated later - after approval by EPA.

Answer: Section 60.39e(d)provides States with the option, through the State Plan, of allowing designated facilities to petition the State for extensions beyond 1 year from State Plan approval to comply. This is the one allowable situation in which compliance schedules, including increments of progress, are determined after EPA approval of the State Plan.

25. Do sources requesting an extension beyond 1 year from promulgation need to provide the documentation in 60.39e(d) to the State prior to submittal of the State Plan?

Answer: No. The rule only States that sources requesting an extension submit the documentation listed in 60.39e(d)(1)(i-ii) "in time to allow the State adequate time to grant or deny the extension within 1 year after EPA approval of the State Plan."

26. What rule determines whether a facility has only 1 year from State Plan approval to comply, or 3 years with the 5-increment compliance schedule?

Answer: This is a site-specific question that each State must address. The EPA expects that most sources will come into compliance with the State Plan within 1 year after EPA approval. The Emission Guidelines allow States to include compliance schedules for facilities planning to retrofit that extend beyond 1 year after State Plan approval, provided that the State Plan includes enforceable increments of progress for the facility and that the final compliance date is not later than 3 years following State Plan approval or September 15, 2002, whichever is earlier. There is no specific criteria in the Emission Guidelines that determines whether a facility has only 1 year from State Plan approval to comply, or 3 years with the 5-increment compliance schedule. States are to use their judgement and the information provided to the State by the source to determine if the source should be allowed more than 1 year after State Plan approval to comply.

27. If the EPA disapproves the State Plan, how does this affect the source's compliance time?

Answer: If a State submits and receives approval of a State Plan prior to September 15, 1999, sources are to comply with the State Plan within 1 year after EPA approval of the State Plan. Thus, States which submit State Plans that are disapproved have until September 15, 1999 to resubmit an approvable State Plan. In cases where the State does not receive approval of their State Plan by September 15, 1999, a Federal Plan will go into effect in that State. Sources will then have 1 year after September 15, 1999 to come into compliance unless they meet the increments of progress specified in the Federal Plan, in which case, they would have until September 15, 2002 to comply.

28. Under the Emission Guidelines, existing sources have 3 years from EPA approval of the State Plan to comply. Is this the compliance date in all cases?

Answer: No, States can require compliance sooner. All HMIWI covered by a State Plan must complete retrofit or cease operation by the date 1 year after State Plan approval. Sources planning to retrofit may have until the date 3 years after State Plan approval or until September 15, 2002, whichever is earlier, provided that the State Plan contains increments of progress. The State Plan may tailor the various compliance dates provided the sources meet the September 15, 2002 deadline. The State may elect to tie the enforceable increments of progress to (1) fixed calendar dates, (2) "float" dates from EPA approval of the State Plan, or (3) with the exception of increment 5 (final compliance), "float" dates from issuance of permits necessary for retrofit activities.

29. Can a facility submit a closure agreement as an alternative compliance plan, and decide later to retrofit controls?

Answer: Yes. The State Plan must specify a deadline for an HMIWI to complete retrofit or to cease operations. If a State Plan specified that an HMIWI would cease operations by a given date, and the HMIWI owner later decides to retrofit controls, the State must modify the State Plan to include a new compliance date for the HMIWI (including meeting all requisite notice-and-comment requirements and five increments of progress). The Emission Guideline revision would need to be approved by the EPA. If an HMIWI owner already knows the cease operations agreement is an interim step toward retrofit and restart of the unit, the requirement to cease operation can be added to the five required increments of progress toward compliance with the State Plan. By adding the cease operation requirement to the State Plan, the State would eliminate the need to modify the State Plan in order to allow the unit to retrofit and resume operation. The unit would have to cease operation on or before September 15, 2002 and would have to complete its retrofit before restarting operations.

30. Some sources will wait until the standards are finally adopted by the State before deciding whether to retrofit or shut down. How will States be able to determine compliance schedules in the State Plan for sources which have not yet even begun the bidding/contracting process at time of State Plan submittal? How binding are the compliance schedules? Can the compliance schedules be a "best guess"?

Answer: All sources must be in compliance within 1 year of State Plan approval, unless the State has provided increments of progress, in which case sources would have up to 3 years from State Plan approval to comply or September 15, 2002, whichever is earlier. If the State chooses to give sources longer than 1 year, the State Plan must include at a minimum, the five enforceable increments of progress for each HMIWI as required by Subpart B. The required increments are:

- submit a final control plan,
- award contracts for controls,
- initiate on-site construction or installation of controls,

- complete on-site construction or installation of controls, and
- final compliance.

Additional increments of progress may also be included in the Plan. The State Plan must include binding and enforceable compliance dates for the five increments. The first four increments can be calendar dates or floating dates set a certain time from State Plan approval or issuance of a specific permit. But the fifth increment, final compliance, can be set only from State Plan approval and cannot extend beyond 3 years from State Plan approval or September 15, 2002, whichever is earlier. Sources which the Plan requires to cease operations by September 15, 2002, can reopen after the final compliance deadline (i.e., September 15, 2002), but in order to do so the sources must demonstrate that they are in full compliance before reopening.

The schedules in the State Plan are enforceable but the State Plans can be revised provided they meet the requirements above and the public is given adequate notice of an opportunity for public comment. That is, if the State and HMIWI agree that more time is necessary for an increment of progress after the State Plan has been approved, the State could submit a State Plan revision to EPA for approval after following the procedures for Plan revision specified in 40 CFR Part 60, Subpart B. The final retrofit date or cease operation date, however, would still need to be within 3 years of State Plan approval and no later than September 15, 2002.

The State and HMIWI will need to review the emission limits in the Subpart Ce Emission Guidelines (promulgated September 15, 1997, 62 FR 48348) and draft State standards being developed to implement the Guidelines and make judgments about the likely retrofit requirements in order to include a schedule in the State Plan. Except for those few States that already have more stringent standards or broader coverage, most States will propose to match the Emission Guidelines requirements.

31. Can a State tie the compliance date for the HMIWI to the date of State adoption of the rule?

Answer: Yes, as long as there is the backstop compliance date (retrofit completed or cease operation) which is no later than three years after State Plan approval or September 15, 2002 (5 years after Emission Guidelines promulgation), whichever is earlier.

32. For many States, it takes 1.5 to 2 years to develop a State rule. Therefore, many States in the process of developing a State rule will receive a Federal Plan. Why doesn't EPA just apply a Federal Plan across the board saving States the trouble of developing a State rule since the end result will be the same?

Answer: The EPA does not have the authority to implement a Federal Plan until 2 years after the promulgation date. The Federal Plan only applies until a State develops an approvable State Plan. By developing a State Plan, States have the opportunity to tailor the compliance schedule to individual sources and to develop a State rule more stringent than the Emission Guidelines. States should be aware that a State Plan provides more flexibility than a Federal Plan. For example, a State Plan gives the State the opportunity to tailor their compliance schedule to

sources. It also allows the State to be more stringent than the EG. In addition, it is likely that a State Plan would result in a more detailed source inventory.

33. Are fixed calendar dates required in increments of progress?

Answer: Yes and no. There are five mandatory increments of progress. These are: 1) submittal of a final control plan; 2) awarding of contracts; 3) initiation of on-site construction; 4) completion of on-site construction, and 5) final compliance. Either calendar dates or floating dates can be used for these increments of progress, as long as final compliance does not go beyond 3 years from State Plan approval or September 15, 2002.

The State may submit a compliance schedule that uses either all calendar dates or a mix of calendar and floating dates, or, a State could submit a schedule with dates that all float. For the first four increments of progress, dates may float from date of State Plan approval or date of issuance of a permit. If a permit is cited in the State Plan as the significant date from which the increments will be referenced, the specific permit must be identified.

34. If a facility plans to close down their HMIWI rather than comply with the Emission Guidelines, must the facility close down by the date 1 year after State Plan approval or can the facility continue operating without complying with increments of progress?

Answer: The facility must close down by the date 1 year after State Plan approval, unless the facility is granted an extension by the State. In order for a State to grant such an extension, the State Plan must include the provisions listed in section 60.39e(d) of Subpart Ce.

35. If a unit fails to meet an increment of progress established by the State, must the unit shut down until the increment of progress is met?

Answer: Yes, the unit must cease operation until the facility is back on schedule with its increments of progress.

STANDARD METROPOLITAN STATISTICAL AREA (SMSA)

36. How are metropolitan areas defined in the Emission Guidelines?

Answer: The Emission Guidelines define Standard Metropolitan Statistical Areas (SMSA) as areas listed in OMB Bulletin No. 93-17 entitled "Revised Statistical Definitions for Metropolitan Areas" dated June 30, 1993. See #37 below for information on how to obtain a copy of the 1993 SMSA listing.

37. Where can States access OMB Bulletin No. 93-17 (for SMSA boundaries)?

Answer: The OMB Bulletin No. 93-17 is item No. IV-J-125 in docket No. A-91-61. The docket phone number is 202-260-7548.

A listing of the Standard Metropolitan Statistical Areas (SMSA's), as defined by the OMB on 6/30/93 is at http://www.census.gov/population/estimates/metro-city/93mfips.txt on the Internet.

38. Are we bound by the HMIWI regulations to use only the 1993 SMSA publication, or is it correct to use the most current publication of statistical data?

Answer: The definition of Standard Metropolitan Statistical Area in the Emission Guidelines is based on the 1993 SMSA definitions. The Emission Guidelines specify that the 1993 SMSA definitions be used to ensure that the rural criteria is applied uniformly and consistently for small HMIWI. Therefore, States are required by the Emission Guidelines to use the 1993 SMSA definitions for determining applicability of the rural criteria to HMIWI.

39. Regarding the 50-mile limit from an SMSA, is this from the edge of an urbanized area or the edge of the county? In other words, for counties which are part of the SMSA but have only a small urbanized area in the corner, is the 50 miles measured from the county line or the city limit line?

Answer: The 50-mile limit from an SMSA is measured from the edge of the SMSA. In most cases this is a county line. In some cases, it is the city or township boundary.

LEGAL AUTHORITY

40. What is the difference between "legal authority" and "enforcement mechanism"?

Answer: Legal authority is a general term described in 40 CFR sec. 60.26 that means the power that a State has to require a source to do something--be it meet certain emission limits or put on certain control devices. The manner in which a State uses its legal authority to enforce requirements is called the enforcement mechanism. Examples of enforcement mechanisms that could be used to give a State legal authority over a source are: a State rule, an Administrative Order, a Compliance Order, or a Federally enforceable State operating permit.

41. If a State already has a State rule in place, can the State submit the rule as the legal authority?

Answer: Yes, the existing State rule would be the State's legal authority.

42. If a State develops a State rule to adopt the Emission Guidelines, must this rule be passed by the State legislature within 1 year after promulgation or is it sufficient to have submitted the rule to the State legislature for review by 1 year after promulgation?

Answer: The State rule must be passed by the State legislature by September 15, 1998.

43. If a State uses a SIP regulation as a basis for the legal authority in a State Plan, does the State need to demonstrate legal authority?

Answer: A State can select from a range of legal mechanisms provided that the State can show it has adequate legal authority. A demonstration of legal authority is required in all cases except for State rules. If a SIP rule is used, citations, rather than copies of actual State legal authority is adequate. It is unlikely the SIP will address all of the HAPs (see Section 60.26[b]).

For all other legal instruments, a demonstration of authority is required. The EPA strongly recommends that States include a certification letter from the State Attorney General for such a demonstration if a mechanism other than a State regulation is used. (Several States have originally thought they could avoid a rule by using a title V permit as their enforcement mechanism, for example. But their Attorney General's opinion was that the State did not have the authority to incorporate applicable requirements into a title V permit.)

SOURCE/EMISSIONS INVENTORY

44. If a former HMIWI is now only burning municipal waste and the hospital is gone, do they still meet the definition of "fully or partially dismantled," thus must be included on the State's inventory?

Answer: States are encouraged to make a reasonable attempt to include in their inventory all incinerators in the State that have the potential to restart. As guidance, States may use the following questions to help determine whether an incinerator that is shut down should be included in the inventory or not. If the answer is "yes" to at least one of the questions below, then the incinerator would not to be included in the inventory:

- Are the charge doors welded shut?
- Is the main stack and/or bypass stack removed?
- Have the blowers been removed?
- Have the burners and/or fuel supply been removed?

In the case cited above, it is unlikely that the incinerator in question would ever be used again to burn hospital waste or medical/infectious waste. Thus, it need not be included on the State's inventory because it is not an HMIWI.

However, if the incinerator started taking any hospital waste or medical/infectious waste, it would then become subject to the regulations.

45. Must a "small" MWC not subject the MWC rule (burning 10 percent or less hospital/medical/infectious waste) and only required to keep records be included on the State Plan inventory?

Answer: Small MWC's exempt from the MWC rule by virtue of their size (less than 250 tons/day) and burning 10 percent or less hospital/medical/infectious waste need only notify

the EPA Administrator of an exemption claim and keep records of wastes burned, per sec. 60.32e(c). These units burning 10 percent or less hospital waste and medical/infectious waste are called "co-fired combustors." Although co-combustors are not subject to the emission limits, in order for the public to be aware of their existence and for States to ensure compliance with these record keeping/notification requirements, such units must be included in the State Plan inventory.

Note: Per sec. 60.32e(e), HMIWI's subject to the MWC rule are exempt from the HMIWI rule, and as such, would not need to be included on the State's inventory of HMIWI.

46. Have sample inventory questionnaires been developed?

Answer: A sample inventory questionnaire is contained in this document as Appendix G.

47. Are crematoria, etc., required to be included in the inventory, even if they are "exempt"?

Answer: Crematoria are not subject to any part of the HMIWI regulations as long as they burn only human remains. Therefore, there is no need to include crematoria in the State's inventory. However, if the crematory incinerator is used to burn any hospital waste or medical/infectious waste, it is subject to at least some portion of the HMIWI regulation and must be included on the State's inventory.

48. Where in the Act or Regulation is the requirement for the State to submit an inventory? What must be included in the inventory?

Answer: Section 60.25(a) of Subpart B says that States are to submit an inventory of sources as well as an inventory of the emissions from the HMIWI in the State. The inventory should include a list of applicable sources, including HMIWI, co-fired combustors, and incinerators burning only pathological waste, low-level radioactive waste, and chemotherapeutic waste. Co-fired combustors and incinerators of low-level radioactive, chemotherapeutic, and pathological waste must be included in the source inventory but are exempt from the State Plan emissions inventory.

49. Where are the emission factors which supported rule development published?

Answer: The emission factors developed during the HMIWI rulemaking process are contained in the appendices of this Summary Document. The memorandum which documents the emission factors is available at the Air and Radiation Docket and Information Center in Docket No. A-91-61, Item No. IV-B-42. The title of the memorandum is "Emission Factors for Medical Waste Incinerators." The phone number for the EPA Docket Office is (202) 260-7548.

50. Other than the name, location, owner/operator, etc., are States also expected to update the Charge Rate, APCD and Type sections of the inventory list EPA presently has? If so, States would like a legend or key to what the codes stand for under MWI Type. Also, are States supposed to know what APCD number each site is, or does EPA have a key for those, too?

Answer: An inventory of designated facilities will be needed in each 111(d)/129 State Plan, as required by Section 60.25 of Subpart B of 40 CFR 60. Section 60.25 also requires an estimate of emissions from each source. The EPA inventory sent to the States was used by EPA to conduct analyses for the HMIWI rulemaking. It is not necessarily precise, but we thought it would be a good starting point for States to begin developing a list of sources. Consequently, the State can use as much or as little of the EPA 1995 inventory as they wish, keeping in mind they must develop their own list and an emissions estimate.

With that in mind, following is a short description of each column.

- "Charge Rate" reflects the design waste burning capacity of each unit in the EPA inventory. For many units, the charge rate was assumed based on the number of beds at the hospital. For purposes of determining size (and corresponding emission limits in the guideline) and estimating emissions, it would probably be a good idea for States to try to determine the actual design waste charge rate for each unit and the actual waste burned per hour (or day, or year) for each unit.

- "APCD Number" reflects the type of air pollution control on the facility. Again, many are assumed based on permit limits and on State regulations for particulate matter. EPA can provide a key for the APCD numbers, but it would probably be better to try to find out what (or whether) APCD is actually in place. This could also help in estimating emissions.

- "MWI Type" means the design of the incinerator. "B" stands for "batch," "C" stands for "continuous," and "I" stands for "intermittent."

51. Will the AP-42 emission factors be updated for HMIWI's?

Answer: No, at least there are no plans to do so in the near future. Actual emissions are always better, but if a State must estimate emission when developing emissions inventory, there are three options. One, the State can use the State's own emission factors. Two, the State can use the emission factors used to support the rule (contained in the appendix of the Summary Document and the docket). Or three, the State can use the emission factors from AP-42.

APPLICABILITY

52. Are MWC's subject to Cb, Ea or Eb exempt from the HMIWI rule or are they only exempt from one subpart and thus, still subject to other parts?

Answer: There are three terms that must be kept straight. All of these regulations are under "Part" 60 of the Code of Federal Regulations. Each of the regulations is a "Subpart" of Part 60 (i.e., Subpart Cb, Subpart Ce, Subpart Ea, Subpart Eb, etc.). Each Subpart is broken to "Sections" (e.g., Section 60.32e(e)). Combustors subject to Subparts Cb, Ea, or Eb are not subject to Subparts Ce or Ec. That is, they are exempt from the entire HMIWI rule.

53. Are MWC's exempt regardless of the amount of medical waste they burn?

Answer: Any MWC subject to Subpart Cb, Ea, or Eb is exempt from Subparts Ce and Ec, regardless of the amount of hospital waste or medical/infectious waste burned. However, not all MWC's are subject to Subparts Cb, Ea, or Eb because these subparts only affect MWC larger than 250 tons/day. An MWC which is smaller than 250 tons/day and burns more than 10 percent hospital waste and medical/infectious waste is subject to Subpart Ce or Ec. An MWC which is smaller than 250 tons/day and burns 10 percent or less hospital waste and medical/infectious waste is exempt from most of the provisions of Subparts Ce and Ec, but must notify the Administrator of an exemption claim and keep records of wastes burned. These units burning 10 percent or less hospital waste and medical/infectious waste are called "co-fired combustors."

54. Are the HMIWI regulations applicable to crematorium and animal waste incinerators? The definition of medical/infectious waste in the Emission Guidelines seems to include animal waste.

Answer: Human corpses, remains, and anatomical parts intended for interment or cremation are not considered medical/infectious waste or hospital waste for the purposes of this rule. Consequently, human crematoria that burn only human remains are not subject to the HMIWI regulations. However, if the crematory incinerator is used at any time to burn hospital waste or medical/infectious waste, it is subject to the HMIWI regulations. Animal remains can sometimes meet the defintion of medical/infectious waste. If the animal remains meet the definition of medical/infectious waste, then the incinerator burning the medical/infectious animal remains is subject to the HMIWI regulations. However, if the incinerator burns exclusively animal remains, containers used to collect and transport the remains, and animal bedding, then the incinerator is exempt from most provisions of the HMIWI regulations and is subject only to notification and recordkeeping requirements. If the incinerator burns 10 percent or less of hospital waste and medical/infectious waste, it is a co-fired combustor subject only to notification and recordkeeping requirements. If the incinerator burns more than 10 percent hospital waste and medical/infectious waste, it is subject to all of the requirements of the regulation.

55. Please define "commence construction." We have a building which put in building footing. They have not built the building or purchased equipment.

Answer: "Commence construction" is defined by definitions in 40 CFR 60 Subpart A - General Provisions. "Commenced" is defined with respect to the definition of new source as, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification. "Construction" is defined as fabrication, erection, or installation of an affected facility.

For purposes of determining what is a new HMIWI, Subpart Ec refers to HMIWI which commenced construction after June 20, 1996. Thus, if the HMIWI was or is to be constructed after June 20, 1996, then the HMIWI is a new unit regardless of when the building is constructed. However, if the facility went under contractual obligation with a company to construct an HMIWI prior to June 20, 1996, then the unit may be considered as an existing unit. Without more specific information than is provided in the question above, it is difficult to determine if the facility has or is constructing a new or existing HMIWI.

56. With respect to applicability, please discuss alternatives to onsite incineration (i.e., autoclaves, microwave, etc.).

Answer: The HMIWI regulations are not "medical waste disposal" regulations. The HMIWI Emission Guidelines apply to hospital/medical/infectious waste incinerators which are defined as "any device that combusts any amount of hospital waste and/or medical/infectious waste." Alternatives to onsite incineration such as autoclaves and microwaves do not combust waste and therefore do not meet the definition of "hospital/medical/infectious waste incinerator" in the Emission Guidelines. Therefore, the Emission Guidelines do not apply or contain any requirements for the autoclave, microwave, or to any other alternative to onsite incineration which does not combust hospital waste or medical/infectious waste.

57. Does the small "rural" unit count for medium and large units in rural areas that are derated?

Answer: Under the small rural criteria, the HMIWI would have to burn less than 2,000 pounds of waste per week and be located more than 50 miles from an SMSA. Most medium and large HMIWI have the capacity to burn much more than 2,000 lbs/wk and would have to undergo drastic measures to derate their capacity to less than 2,000 lb/wk. It is not anticipated that it will be very cost efficient for facilities operating medium and large HMIWI to severely derate their capacities in order to burn less than 2,000 lbs/wk. Medium or large HMIWI that derate their capacity in order to fall in the small subcategory may be considered as small "rural" units if they meet the small rural criteria.

58. **A hospital in North Carolina has a permit to construct awarded prior to June 1996. Bidding on the air pollution control device occurred after June 1996. The incinerator was constructed prior to June 1996, but the APC device has not been installed yet since the permit has lapsed. Would the unit, (i.e., the incinerator and scrubber) be considered a new or existing unit? If existing, does it have to meet the current North Carolina standards or the new EPA emission standards on existing units?**

Answer: Hospital/medical/infectious waste incinerators which commenced construction on or before June 20, 1996 are considered to be existing sources subject to the HMIWI Emission Guidelines. Hospital/medical/infectious waste incinerators commenced construction after June 20, 1996 are considered to be new sources subject to the HMIWI New Source Performance Standards. The answer to the above questions involves the definition of "commenced construction." The General Provisions (40 CFR 60 Subpart A) define "commence" and "construction." The applicability date for the HMIWI Emission Guidelines depends on the date when the HMIWI is constructed, not when the APCD is installed. Thus, the unit discussed in the question would be an existing HMIWI because the HMIWI was constructed on or before June 20, 1996.

The Emission Guidelines do not apply directly to existing HMIWI and they do not override or negate any State regulations. Rather, States are to develop State Plans to implement the Guidelines. The HMIWI in question would be subject to the State Plan once it is approved by EPA. In the meantime, the HMIWI remains subject to current State regulations. Once the State Plan is approved by EPA, the HMIWI will be subject to any applicable State regulations and the State Plan. It is likely that the State will combine current State regulations with the State Plan so that the HMIWI will be subject to just one requirement by the State.

59. **Say a facility uses a batch incinerator with a charging rate of 100 pounds per batch. The incinerator is loaded 5 times per day. Total daily loading is 500 pounds per day. Would this fall under a small incinerator? (i.e., [500 lb/day] / [24 hr/day] = 20 lb/hr ==> small in size). Is this the correct calculation in determining incinerator size?**

Answer: Batch HMIWI are typically loaded with waste, started and allowed to burn the waste, and cooled down so the ash may be removed. The entire batch process usually takes the majority of a day. The unit in question does not sound like a typical batch unit, because a batch unit could not be loaded 5 times per day. Nevertheless, small batch units as defined in the HMIWI rule, burn less than 1,600 lbs/day. If the unit is indeed a batch unit, then it would be considered a small HMIWI because it only burns 500 lbs/day. If the unit were something else (e.g., an intermittent unit) then the unit would still be small provided that it does not charge more than 200 pounds of waste per hour.

Methods for calculating HMIWI size for purposes of the HMIWI regulations are provided in section 60.51c of Subpart Ec under the definitions of "maximum charge rate" and/or "maximum design waste burning capacity." The size cutoffs for each subcategory are provided in the definitions of small, medium, and large HMIWI.

60. Our facility burns on average 2,200 pounds per week, of which 200 pounds is pathological. Would the 200 pounds be subtracted from the total and make this a small rural unit?

Answer: Co-fired combustors are units which burn 10 percent or less hospital waste and medical/infectious waste. The only time the amount of pathological waste would be subtracted from the total waste burned is for purposes of determining applicability of a co-fired combustor. If the unit in question is burning hospital waste and/or infectious waste, the only way it may be considered a small rural unit is if: (1) the facility reduces the amount of waste burned (including the pathological waste) to less than 2,000 pounds per week, (2) the unit is a small unit as defined in section 60.51c of Subpart Ec, and (3) the unit is located more than 50 miles from the nearest SMSA.

61. Can an enforceable permit condition limiting charge rate (pounds per hour) below the specific applicability size threshold be used to change the size category from large to medium or from medium to small incinerator?

Answer: Yes. States may allow units which burn less than their design capacity to base their size determination on the "maximum charge rate," as defined in section 60.51c of the HMIWI rule.

62. What if the source does change its size category through a permit condition and then violates that condition by operating in the next larger category? Does the source then become subject to the requirements in that next larger category?

Answer: No, size is determined by the maximum charge rate which was defined earlier (performance test or permit condition). Thus, the source doesn't automatically become subject the requirements of the next larger category. Nevertheless, in this case, the source would be in violation of the regulation and/or the permit condition.

63. Are the following exempt from the HMIWI rule: funeral homes, pet crematories (at zoos and veterinaries), teaching hospitals (which burn carcasses from anatomy class and animals from research), or university labs? Our State has crematory rules under which the above sources must keep records. Under this scenario, could our State submit a negative declaration?

Answer: Applicability is not determined by where the incinerator is located, but rather, by what the incinerator is burning. If the facilities listed burn only materials that do not meet EPA's definition of hospital waste or medical/infectious waste, they are not subject to the regulations and need not be included in a State Plan. If a State is confident that there are no incinerators in the State burning any hospital waste or medical/infectious waste, then the State should submit a negative declaration. Note that human corpses, remains, and anatomical parts intended for interment or cremation are not considered medical/infectious waste or hospital waste for the purposes of this rule.

If any of the facilities listed burn any amount of hospital waste or medical/infectious waste at any time, they are subject to, at a minimum, the reporting and recordkeeping requirements of section 60.32e. The only exemptions are for any combustor required to have a permit under Section 3005 of the Solid Waste Disposal Act; any pyrolysis unit; any cement kiln; or any combustor subject to Subpart Cb, Ea, or Eb (standards and guidelines for certain municipal waste combustors). If the incinerator burns only pathological, low-level radioactive, and/or chemotherapeutic waste, it is subject only to notification and recordkeeping requirements and should be included in the State Plan inventory. If the incinerator burns 10 percent or less of hospital waste and medical/infectious waste, it is a co-fired combustor subject only to notification and recordkeeping requirements and should be included in the State Plan inventory. If the incinerator burns more than 10 percent hospital waste and medical/infectious waste, it is subject to all of the requirements of the regulation.

64. Is a pyrolysis furnace that is used to clean metallic filters classified as an incinerator? The furnace is rated at three million Btu/hr and uses only natural gas. Is the operator training requirements applicable? No material containing toxic metal or halides are burned in the furnace.

Answer: No. Pyrolysis units are not subject to any part of the HMIWI regulations.

65. We have a 2-year-old incinerator with a maximum capacity of 600 lbs/hr. We derate burn at 200 lbs/hr. We are a diagnostic lab (veterinary-animal disease investigations). We believe that 90 percent of our material is pathological waste (carcasses, tissues). What do you see for the future of exempted pathological waste? We do not have a scrubber. We are 55 miles from a city of 100,000 (city limits) and 32 miles from the SMSA border of the county line, for that area.

Answer: Facilities which burn 10 percent or less hospital waste and/or medical/infectious waste are considered to be co-fired combustors. Co-fired combustors are only required to notify the Administrator of an exemption claim and keep quarterly records of the amount and type of wastes burned. Because the facility in the question is a laboratory, it is not likely to burn any hospital waste. The 90 percent pathological waste is not included in the determination of the amount of medical/infectious waste burned. Therefore, if the facility burns 10 percent or less medical/infectious waste, then it would be considered a co-fired combustor.

Regulations for these types of incinerators are under development, but it is too early to know what the requirements will be.

66. What are specific de-commissioning requirements: (1) complete dismantlement, or (2) disconnect fuel supply for control power to unit?

Answer: There are no specific de-commissioning requirements. States are to use their best judgement to determine which HMIWI that have ceased operation are capable of reopening. For those HMIWI which have ceased operation, but are capable of reopening, then the State should include in its State Plan some mechanism by which to require such facilities to comply with the State Plan.

As a suggestion, criteria for determining whether an HMIWI is inoperable could include but not be limited to, one or more of the following conditions:

- Waste charge door welded shut;
- Stack/by-pass stack removed;
- combustion air blowers removed; and/or
- burners or fuel supply removed.

67. Our facility currently combusts about 65 percent returned pharmaceuticals and 35 percent laboratory animal waste (which meets the definition of medical waste). If we reduce the amount of medical waste to 10 percent or less, are we then not subject to the Guidelines?

Answer: There are three possibilities. In all three cases, the returned pharmaceuticals do not meet the definition of medical/infectious waste and are not considered hospital waste because the definition of hospital waste specifically excludes unused items returned to the manufacturer. The three possibilities arise from what is meant by "laboratory animal waste."

First, if the laboratory animal waste consists only of animal tissue, containers used to collect and transport the tissue, and/or animal bedding, the laboratory animal waste is considered pathological waste. In this case, the incinerator is burning no hospital waste and is burning some medical/infectious waste, all of which is pathological. The definition of co-fired combustor states that pathological waste should be considered as "other" waste when calculating the percentage of medical/infectious waste, even if the pathological waste meets the definition of medical/infectious waste. Under these conditions, this incinerator is a co-fired combustor already, and reducing the amount of medical/infectious waste would not alter the applicability. It is exempt from most of the provisions of the regulations, but must notify the Administrator of its existence and keep records of fuels and wastes burned.

Second, if some of the laboratory animal waste is medical/infectious waste that is not animal tissue, containers, and/or bedding (i.e., some of the laboratory animal waste is non-pathological medical/infectious waste), but this non-pathological medical/infectious waste accounts for 10 percent or less of the total waste burned, then this incinerator is also a co-fired combustor subject to the same requirements described above.

Finally, if some of the laboratory animal waste is medical/infectious waste that is not animal tissue, containers, and/or bedding (i.e., some of the laboratory animal waste is non-pathological medical/infectious waste), and this non-pathological medical/infectious waste accounts for more than 10 percent of the total waste burned, then this incinerator is subject to all of the requirements in the regulations.

68. Does the applicability date mean the date of initial construction, initial startup, or when the HMIWI finally reaches full operation?

Answer: The applicability date is the date construction is commenced. For example, the Subpart Ce applies to units for which construction is commenced on or before June 20, 1996.

"Commenced" is defined in the NSPS General Provisions in 40 CFR Part 60 Subpart A, Section 60.2. As defined under Section 60.2, commenced means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

69. Are units which commenced construction between the February 1995 proposal and promulgation of the HMIWI rule (September 15, 1997) required to meet the emission limits in the NSPS?

Answer: The EPA first proposed the medical waste incinerator Emission Guidelines in February 1995. In response to comments received following this proposal, the EPA published a supplemental *Federal Register* notice on June 20, 1996. This supplemental notice had most of the elements of a proposal and is now considered to be a reproposal of the medical waste regulation. Units which commenced construction prior to June 20, 1996 are considered to be existing HMIWI and are required to meet emission limits in the State Plan. Facilities which commenced construction after June 20, 1996 are considered to be new units and are subject to the New Source Performance Standards.

70. Is an incinerator located at a hospital that burns only noninfectious trash from the hospital covered?

Answer: Yes, because the incinerator is burning more than 10 percent by weight hospital waste.

71. Is an incinerator located at a hospital that is used to burn only pathological waste covered?

Answer: Incinerators used for the sole purpose of combusting human or animal remains and pathological waste are exempt from most provisions of the EG. The hospital operating the incinerator must notify the Administrator of an exemption claim and keep quarterly records of the time periods when only pathological waste is combusted.

72. Is an incinerator burning waste from a nursing home covered?

Answer: Nursing homes are not considered to be hospitals and thus, not generators of "hospital" waste under the Emission Guidelines. However, most nursing homes generate "medical/infectious" waste and thus, would be covered by the EG to the extent that any other incinerator burning medical/infectious waste would be covered.

73. Incinerators used to burn pathological waste, low-level radioactive waste, and chemotherapy waste are not covered under the Emission Guidelines. Does EPA plan to regulate these incinerators under another standard?

Answer: Yes. Incinerators burning pathological waste, chemotherapeutic waste, and low-level radioactive waste will be covered under the Industrial Combustion Coordinated Rulemaking.

74. Is notification and record keeping required for facilities operating pathological incinerators?

Answer: Facilities operating pathological incinerators are required to notify the Administrator of an exemption claim and keep records of the time periods when only pathological waste is burned. These records are to be maintained onsite by the facility. Reporting is not required for facilities operating pathological incinerators.

75. According to the Emission Guidelines, HMIWI capacity may be determined by either the maximum charge rate or the maximum design waste burning capacity. What if the maximum design waste burning capacity places the HMIWI in one subcategory and the maximum charge rate places the same HMIWI in another subcategory?

Answer: In the scenario stated above, the maximum charge rate would be used to determine the HMIWI subcategory. Maximum charge rate, as defined in Subpart Ec, is 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test. The maximum design waste burning capacity is calculated based on primary chamber volume and heat release rate. A formula for this calculation is included in Subpart Ec. Because the maximum design waste burning capacity is based on the design capacity of the incinerator, it is fixed, and cannot be changed. The maximum charge rate, on the other hand, is based on the amount of waste that a facility actually burns in the incinerator. In some cases the maximum charge rate will be lower than the maximum design waste burning capacity. For enforcement purposes, the HMIWI would be bound by the maximum charge rate.

76. Is an MWC covered by the HMIWI rule if it burns hospital waste and/or medical/infectious waste and is not subject to Subparts Cb, Ea, or Eb?

Answer: Maybe. If the MWC burns more than 10 percent by weight hospital waste and/or medical/infectious waste, it is covered. If the MWC burns some hospital waste or medical/infectious waste, but 10 percent or less, it is considered a co-fired combustor for purposes of the HMIWI Emission Guidelines and the facility must notify the Administrator of an exemption claim and keep quarterly records of the weight of hospital waste, medical/infectious waste, and other fuels combusted on a calendar quarter basis.

77. If an incinerator owned and operated by a pharmaceutical company is used to burn drugs, noninfectious trash, infectious waste, pathological waste, and low-level radioactive waste, is it covered?

Answer: Drugs are not considered to be medical/infectious waste. Drugs are also not considered to be hospital waste if returned to a pharmaceutical company from a hospital because the definition of hospital waste in the Emission Guidelines excludes items returned to the manufacturer. Because the incinerator in this case is used to burn some infectious waste, it is covered by the EG. If the infectious waste accounts for 10 percent or less of the total waste burned, the incinerator is considered a co-fired combustor and the facility must notify the Administrator of an exemption claim and keep quarterly records of the weight of medical/infectious waste and other fuels combusted. The incinerator is covered by all of the provisions of the EG if it is used to burn more than 10 percent by weight of items considered to be hospital waste and/or medical/infectious waste. The portions of pathological and low-level radioactive waste that could be considered medical/infectious under the medical/infectious waste definition in the Emission Guidelines are not included in the 10 percent determination.

78. Is an incinerator located at a hospital that burns only pathological, chemotherapeutic, and low-level radioactive waste generated at the hospital covered by the HMIWI rule?

Answer: Incinerators used to combust pathological waste, chemotherapeutic waste, and low-level radioactive waste alone or in combination are exempt from most provisions of the EG. The hospital operating the incinerator must notify the Administrator of an exemption claim, and keep quarterly records of the periods of time when only pathological waste, chemotherapeutic waste, and low-level radioactive waste is combusted.

79. If a facility operates two HMIWI, must the facility combine the capacity of both units to determine overall HMIWI size?

Answer: No, HMIWI size is determined on an individual unit basis.

80. I am concerned that the definition of "medical waste" in the HMIWI rule, which is broader than our State definition, may put pressure on the State to change its definition. This would be a setback because under our mandatory waste reduction planning requirements, facilities are able to recycle items that by the definition in the Emission Guidelines would have to be treated as infectious waste.

Answer: There is a misconception that the EPA HMIWI rule somehow determines which items in a waste stream must be "treated" and which items need not be "treated." This is an incinerator regulation, not a waste management regulation. The only reason medical/infectious waste is defined at all is to determine whether or not an incinerator is covered by this regulation. For example, IV bags are considered "medical/infectious" waste under the EPA HMIWI regulation, even if they are not infectious. If a hospital puts IV bags into an incinerator, that incinerator is covered by the regulation. If hospitals in a State routinely recycle IV bags, there is nothing in the EPA HMIWI rule that prohibits the hospital from continuing to recycle IV bags.

There is no need for the State to change its definition of medical waste to coincide with EPA's definition.

81. Subpart Ce defines "hospital/medical/infectious waste incinerator," "HMIWI," and "HMIWI unit." However, reference is made numerous times to "designated facility" and "affected facility". The latter terms appear to identify the same entity. For clarity and consistency, is it acceptable to use the term "hospital/medical/infectious waste incinerator" in place of "designated facility" and "affected facility"?

Answer: Under the Subpart Ce guideline, the "designated facility" is each individual HMIWI for which construction was commenced on or before June 20, 1996. Under the Subpart Ec NSPS, the "affected facility" is each individual HMIWI for which construction is commenced after June 20, 1996 or for which modification is commenced after March 16, 1998. Consequently, "designated facility" and "HMIWI" can be used interchangeably with respect to existing units under the Emission Guidelines, while "affected facility" and "HMIWI" can be used interchangeably with respect to new units under the NSPS.

OPERATOR TRAINING AND QUALIFICATION

82. Please expand on the minimum elements required for operator training?

Answer: Operator training may be obtained through a State-approved program or by completing and passing a training course that satisfies the requirements listed in section 60.53c(c) through (g) of Subpart Ec. In general, the operator training course described in section 60.53c(c) through (g) of Subpart Ec requires (1) 24 hours of classroom instruction, (2) an exam designed and administered by the course instructor, and (3) reference material distributed to the attendees covering course topics. State-approved operator training programs do not necessarily have to meet all of the requirements specified in section 60.53c(c) through (g) of Subpart Ec; however, States must decide if a program provides adequate HMIWI operator training before granting approval of the program.

83. What must an exam for operator training consist of and what constitutes passing?

Answer: The examination is to be designed and administered by the course instructor. Typically the exam would cover the material presented during the training course. Each operator training program that develops an examination is responsible for determining what grade is acceptable for HMIWI operators to pass the course.

84. Some HMIWI operators have been trained through a program developed in cooperation with the equipment manufacturer and owner/operator. In some cases, such training programs are probably more facility-specific and comprehensive than a State-approved program. Owner/operators may be more qualified to develop a training program. Will EPA recognize owner/operator developed program over a State-approved program? Is EPA approval required for privately run operator training?

Answer: Facilities are to obtain operator training through either an operator training program that meets the requirements specified in section 60.53c(c) through (g) of Subpart Ec or through a State-approved operator training program. Thus, privately run operator training programs are acceptable if they meet the requirements specified in section 60.53c(c) through (g) of Subpart Ec. Approval by EPA is not required for privately run operator training programs that meet the Subpart Ec requirements. Privately run operator training programs that differ from the Subpart Ec requirements must obtain approval from the State. If a State disapproves an operator training program, then the training program will not be valid in that State and the EPA will not step in and have the State approve the training program. If the State says nothing about the training program and the program meets the requirements of section 60.53c(c) through (g) of Subpart Ec, then the program may be used to train HMIWI operators in that State.

85. What do States have to do to have a State operator training program instead of the training requirements defined in Subpart Ec? If a State already has an operator training program, is it automatically approved?

Answer: State Plans must require training of HMIWI operators through the program which meets the requirements specified in Subpart Ec or by a State-approved program. A State may develop and implement a program in lieu of the training requirements specified in Subpart Ec. State training programs are only good within the State of issuance. The training requirements mentioned in Subpart Ec are acceptable nationally.

86. Are there specific requirements for a State-run operator training program?

Answer: No, the EPA does not have specific requirements for State operator training programs.

87. Does a trained and qualified operator have to be onsite at all times while the incinerator is in operation?

Answer: No. The trained and qualified operator may be the supervisor of another HMIWI operator and may be on call while the incinerator is in operation. However, the Emission Guidelines require the trained and qualified operator to be onsite within 1 hour from the time when a problem with the HMIWI occurs.

88. The Emission Guidelines require that facilities comply with the operator training requirements within 1 year after EPA approval of the State Plan. Must facilities that intend to shut down later than 1 year from State Plan approval comply with the operator training and qualification requirements of section 60.39e(e)?

Answer: In order to continue operating beyond 1 year from State Plan approval, a source must comply with the requirements of the EG, including the operator training and qualification requirements of section 60.39e(e). The source must also have increments of progress. Therefore, yes, a source which will shut down after 1 year from State Plan approval must comply with the operator training and qualification requirements. If a source plans to shut down within 1 year of State Plan approval, it does not have to meet the operator training and qualification requirements of section 60.39e(e).

COMPLIANCE, PERFORMANCE TESTING, MONITORING AND INSPECTIONS

89. What happens if a facility is in the process of retrofitting, but is not able to demonstrate compliance with the emission limits by the 5-year deadline?

Answer: The facility must cease operation until a performance test is conducted and the facility demonstrates compliance.

90. Will the Guideline allow previous stack test results to be reused to determine compliance after retrofit? Can the stack test be used as part of the three consecutive tests for HMIWI?

Answer: After retrofit, previous stack tests may not be used to determine compliance. If there is no retrofit, stack tests performed prior to the compliance date may be used as part of the three consecutive tests for compliance if the State determines that such tests were conducted in accordance with the required test methods and procedures, and that operating parameter limits (e.g., minimum scrubber liquor flow rate) can be established based on test results.

91. Who is to conduct the initial and annual equipment inspections for facilities operating small HMIWI that meet the rural criteria?

Answer: The owner or operator of the small rural HMIWI is responsible for ensuring the initial and annual equipment inspections are conducted. The inspection may be conducted by an outside party or by the owner or operator. Minimum requirements for inspecting the HMIWI are included in the Emission Guidelines. The owner or operator is to ensure that any repairs are completed within 10 operating days following the equipment inspection unless written approval is obtained from the State establishing a date whereby the repairs must be completed. Facilities are required to keep records and submit annual reports of the equipment inspections.

92. If an annual stack test shows that an HMIWI is out of compliance with the emission limit for one pollutant, must the facility repeat stack testing for all pollutants for the next three years or for only the pollutant that was above the emission limit?

Answer: Annual stack tests are only required for PM, HCl, and CO. If an annual stack test shows that an HMIWI is out of compliance with the emission limit for one pollutant, the facility must only repeat stack testing for the pollutant that was above the emission limit.

93. According to what baseline should compliance with Subpart Ce be verified? For example, 100 ppmv or 93 percent reduction in HCl emissions. What is the 93 percent reduction measured from?

Answer: The format of the standard allows a unit to demonstrate compliance *either* by meeting the 100 ppmv emission limit *or* by showing that the air pollution control device reduces the flue gas HCl concentration by 93 percent before it exits the stack. The percent reduction is determined by the difference between the concentration at the inlet to the air pollution control device and the concentration at the outlet of the air pollution control device.

94. When are units required to perform initial testing in respect to the timeline for State Plans?

Answer: Units are required to perform initial performance test as scheduled in the State Plan but no later than 3 ½ years after approval of the State Plan or 180 days after September 15, 2002 (whichever is earlier).

95. Regarding the use of operating parameters to define violations of emission limits, are there specific parameter relationships defined in the rule?

Answer: Violation of a particular operating parameter does not necessarily indicate a violation of an emission limit. However, relationships between operating parameters and emission limits have been established for a number of pollutants. Therefore, being out of compliance with two or more operating parameters could indicate a violation of an applicable emission limit. These combinations of operating parameters are defined in the rule.

96. During initial testing, is there a wider emission standard that allows for experimentation?

Answer: Sources are given 180 days to complete the initial performance test. During this period, experimentation can be done to optimize the system. The formal initial performance test must demonstrate compliance with the emission limits. Following the initial performance test, the HMIWI must be operated in compliance with the emission limits at all times.

97. Will testing be required for NO_X and SO_2?

Answer: The Emission Guidelines specify emission limits for NO_x and SO_2. State Plans are to contain NO_x and SO_2 emission limits at least as protective as those in the Emission

Guidelines. The Emission Guidelines do not require that State Plans include requirements for testing of NO_x and SO_2. However, State Plans may include testing requirements for NO_x and SO_2, thereby becoming more stringent than the Emission Guidelines.

98. Is the 10-percent opacity standard a "shall-not-exceed-maximum-limit-for-more-than-3-minutes-in-any-hour" standard or is it a 6-minute block average?

Answer: The opacity limit cannot exceed 10-percent on a 6-minute block average.

99. If tests are not required, how can we, the regulators, know the compliance status?

Answer: For existing HMIWI, initial emissions testing is required for the following: CO, PM, HCl, CDD/CDF, Pb, Cd, Hg, and opacity. Repeat emissions testing is required for PM, CO, and HCl for the first 3 years following the initial test, and then every third year provided that the HMIWI demonstrates compliance with the emission limits during each test. Annual testing is required for opacity. For those small HMIWI that meet the "rural" criteria, initial testing is required for PM, CDD/CDF, CO, Hg, and opacity. Annual inspections are required instead of repeat stack tests for PM, HCl, and CO for small "rural" units. In addition to the testing requirements, all existing HMIWI are required to monitor operating parameters including secondary chamber temperature, waste feed rate, bypass stack temperature, and APCD operating parameters as appropriate at all times during HMIWI operation.

The purpose of the above testing and monitoring requirements is to provide information pertaining to facility compliance status. States may choose to include more extensive testing and monitoring requirements in their State Plans if the State would like additional information regarding facility compliance status.

100. If a facility has continuous emission monitors, can the emissions be averaged over a period of 24 hours?

Answer: No. For purposes of demonstrating compliance, State Plans are to require facilities using CEMS to use a 12-hour rolling average, calculated each hour as the average of the previous 12 operating hours (not including startup, shutdown, or malfunction) as indicated in §60.56c(c)(4)(I).

101. Can you give us a ballpark figure on what it will cost a facility to perform the initial stack/performance test? What is the difference in cost between that test for small, rural facilities and other HMIWI?

Answer: Initial performance testing will cost roughly $63,000 for most existing HMIWI. For small rural HMIWI, initial testing will cost approximately $42,000. Thus, there is a difference of about $21,000 in the costs of initial testing for most existing HMIWI and for small rural HMIWI.

WASTE MANAGEMENT PLANS

102. What must be included in the Waste Management Plan? By what date must facilities complete the Waste Management Plan? How will facilities demonstrate that the Waste Management Plan has been implemented?

Answer: State Plans are to require facilities to develop a Waste Management Plan that identifies opportunities for recycling or reduction of wastes such as paper, plastics, cardboard, glass, batteries, etc. The Plan may evaluate the approach, costs, feasibility, and impacts of additional waste management measures. The purpose of the Waste Management Plan is only to prompt facilities to seek opportunities for waste reduction and to identify wastes that could be recycled, rather than burned. State Plans are to require facilities to submit the Waste Management Plan no later than 60 days following the initial performance test. State Plans may include additional requirements by which facilities demonstrate implementation of their Waste Management Plans.

103. Are hospitals that are operating as de facto commercial treatment facilities required to account for receipt and handling of medical waste accepted from off-site generators in their Waste Management Plans?

Answer: Facilities operating commercial HMIWI have little control over the wastes that are accepted from offsite locations. This is one reason why the requirements for Waste Management Plans are somewhat open-ended. One thing that commercial facilities may be able to do in an attempt to control the types of waste that are sent the incinerator is to advertise to their customers what types of waste could be recycled and what types of waste should not be sent to the incinerator. Thus, a commercial facility could indicate its strategy for advertising in its Waste Management Plan.

104. What is the title of the AHA publication on waste reduction and where may copies be obtained?

Answer: The title of the AHA publication that health care facilities are encouraged to consider when developing waste management plans is "An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities." This document is published by the American Society for Health Care Environmental Services of the American Hospital Association, Chicago, Illinois, 1993. The AHA Catalog number is 057007. This document may be obtained by contacting AHA Services, Inc., P.O. Box 92683, Chicago, Illinois 60675, or by calling 800-242-2626. The cost of the document is $50.00 plus $10.95 for shipping and handling.

PERMITS

105. When is the title V permit application due?

Answer: All affected sources, both existing and new, must submit a complete title V permit application to the permitting authority no later than 36 months after promulgation, or, September 15, 2000.

The exception to this deadline is an HMIWI which is already a major source and the source already has a title V permit. In this case, if there are 3 or more years remaining on the permit term, then the permit needs to be revised to incorporate the applicable requirements for the HMIWI rule. If there are less than 3 years remaining on the permit term, then the permit does not need to be revised to include the applicable requirements until permit renewal--bearing in mind that sources are subject to the applicable requirements even though they are not yet contained in the permit.

106. Must a "small" MWC not subject the MWC rule (burning 10 percent or less hospital/medical/infectious waste) and only required to keep records have a title V permit?

Answer: As of this writing (11/97), OAQPS' interpretation of part 70 is that sources subject only to the recordkeeping and notification requirements under section 60.32e are exempt from title V.[4]

107. When should an HMIWI that is already a major source for other designated pollutants incorporate the NSPS or EG into their permit?

Answer: Sources that are subject to title V because they are subject to a section 129 standard and/or for reasons other than section 129 (e.g., they are a NOx major source) must follow the standard title V schedule. In this case, the 5-year permit review timeframe would determine when they incorporated the limits into their permit. See the answer to question #105.

108. Does the "maximum charge rate" need to be included in an operating permit?

Answer: According the Emission Guidelines, HMIWI size may be determined by either the "maximum charge rate" or the "maximum design waste burning capacity." In some cases the "maximum charge rate" may place a unit into a smaller subcategory than would the "maximum design waste burning capacity." For the HMIWI to be considered as a unit in the smaller subcategory, then the State would need some mechanism to bind the HMIWI to the smaller subcategory. One way of doing this is to include the HMIWI "maximum charge rate" in an operating permit.

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[4]Bearing in mind that the source may still be subject to title V for a reason other than the HMIWI rule.

109. If a facility has multiple emission units and at least one emission units falls under HMIWI, how would the title V (total facility) emissions be handled? What if one of the emission units was a plasma type unit?

Answer: Plasma (pyrolysis) units are not subject to any part of the HMIWI rule and are not required to have a title V permit. Once facilities with multiple emission units are subject to title V, they are to develop a permit application listing all of the emission units, describing the emissions from those units, and including all applicable requirements. This could be a daunting task. However, EPA's first White Paper provides some relief in that facilities do not necessarily have to speciate HAP's or regulated air pollutants that are required to be listed. For multiple units of the same type, the facility may list the units generically. For instance, if a facility has six of the same unit, then the facility need only describe the unit once. Otherwise, multiple HMIWI would need to be listed in the permit application. There would only be applicable requirements for those subject to the rule. An easier way would be to refer to the White Paper. It is on the TTN under title V policy and guidance.

INDIAN COUNTRY

110. How do the Emission Guidelines affect facilities located within Indian country? Our State rules are not enforceable in Indian country.

Answer: As a general matter, State rules are not enforceable in Indian country, and States are not responsible for HMIWI implementation within Indian country. In most cases, implementing the HMIWI rule within Indian country will be covered under a Federal Plan.

111. Are Tribes required to submit Tribal Plans for their HMIWI within 2 years of the promulgation of the rule?

Answer: No, Tribes are not required to develop Tribal Plans for their HMIWI, though EPA encourages Tribes to do so, and EPA will work with those Tribes that choose to develop Tribal Plans. The EPA recognizes that due to competing priorities for environmental staff and resource issues, most Tribes will be unable or will choose not to develop Tribal Plans. It is expected that most Tribes will rely on a Federal Plan that will be jointly implemented by the Tribe and the EPA Regional Office.

112. Is a Federal Plan the only way Tribes can enforce the EG for HMIWI's on their lands?

Answer: No. Tribes may submit their Plans to EPA for approval, and EPA will approve Tribal Plans provided the approval criteria (which include adequate legal authority and capability of administering the program) have been met. However, most Indian Nations are expected to rely on joint EPA/Tribal implementation of a Federal Plan.

Appendix B

Key Elements of an Acceptable Section 111(d)/129 State Plan for HMIWI

APPENDIX B--KEY ELEMENTS FOR AN ACCEPTABLE SECTION 111(d)/129 STATE PLAN FOR HMIWI

This document is provided to facilitate preparation of the required State Plans.

Section 129 of the Clean Air Act (Act) requires that States submit to the Environmental Protection Agency (EPA) State Plans to implement and enforce the Emission Guidelines (EG) promulgated for hospital/medical/infectious waste incinerator(s) (HMIWI) pursuant to Sections 111(d) and 129 of the Act. Section 129 requires that the State submit the State Plans not later than one year after EPA promulgates the EG. On September 15, 1997, EPA promulgated the EG as 40 CFR Part 60, Subpart Ce. Thus, the State Plans are due no later than September 15, 1998.

The official procedures for adoption and submittal of State Plans are codified in 40 CFR Part 60, Subpart B. The EPA promulgated the Subpart B provisions on November 17, 1975. The EPA amended them on December 19, 1995, to allow the subparts developed under Section 129 to include specifications that supersede the provisions in Subpart B regarding the schedule for submittal of State Plans, the stringency of the emission limitations, and the compliance schedules. That is, these amendments were promulgated in order to allow conformity with Section 129, which requires the State Plans for HMIWI be submitted within one year and requires the State Plans to be as protective as the EG and requires that each unit be in compliance not later than three years after the State Plan is approved by EPA and no later than five years after the EG is promulgated (rather than the case-by-case exceptions the State may demonstrate as otherwise specified in Subpart B).

States must adopt their State Plans according to State procedures prior to official submittal to EPA. *[60.23 (a)]* At a minimum, the State Plan must include the following elements:

- Emission limits at least as protective as the emission limits in Subpart Ce,
- Testing and monitoring requirements at least as protective as the testing and monitoring requirements in Subpart Ce,
- Operator training and qualification requirements at least as protective as the operator training and qualification requirements in Subpart Ce,
- Requirements for facilities to develop a waste reduction plan at least as protective as the waste reduction plan described in Subpart Ce,
- Recordkeeping and reporting requirements at least as protective as the recordkeeping and reporting requirements in Subpart Ce,
- A final compliance date no later than September 15, 2002

- A demonstration of the State's legal authority to carry out the Section 111(d)/129 State Plan as submitted,
- Demonstration of approval of State's legal authority by Administrator,
- An inventory of HMIWI in the State affected by the Emission Guidelines,
- An inventory of emissions from HMIWI in the State,
- Compliance schedules, extending no later than September 15, 2002,
- Provision for annual State progress reports to EPA on implementation of the State Plan,
- A record of public hearing(s) on the State Plan, and
- A due date for Title V permit applications.

The following pages include information about public participation, legal authority, emission standards and other emission limitations, compliance schedules, emission inventories, source surveillance, compliance assurance, enforcement, and cross-references to the EG.

A. Public Participation

Public participation, under the Clean Air Act, is an important right and responsibility of citizens in the State process of developing, adopting, and implementing the required Section 111(d)/129 State Plans. Under 40 CFR Part 60, Subpart B, the minimum requirements for the State to conduct public hearings on the adoption of State Plans and any revisions thereof are as follows:

1. Reasonable notice of one or more public hearing(s) at least 30 days prior to the hearing(s). *[60.23(d)]*
2. One or more public hearing(s) on the State Plan (or revisions) conducted in location(s) within the State. *[60.23(c)(1)]*
3. Date, time and place of hearing(s) prominently advertised in each region affected. *[60.23(d)(1)]* "Region" is defined as "air quality control region". *[60.21(i)]*
4. Availability of draft State Plan for public inspection in at least one location in each region to which it will apply. *[60.23(d)(2)]*
5. Notice of hearing provided to: (a) EPA Regional Administrator, (b) local affected agencies, and (c) other States affected. *[60.23(d)(3),(4),&(5)]*

6. Retention of hearing records (e.g., list of commentors and their affiliation and summary of each presentation and comments submitted and the State's responses to those comments) for at least 2 years. *[60.23(e) and (f)]*

7. Certification that public participation was conducted in accordance with Subpart B and State procedures. *[60.23(f)]* Upon written application by the State agency, EPA may (expected only for limited special cases) approve different procedures provided that they ensure adequate public participation. *[60.23(g)]*

No hearing is required on a State or local emission standard in effect prior to September 15, 1997, the effective date of Subpart Ce, if it was adopted after a public hearing and is at least as stringent as the emission guideline. *[60.23(c)(3)]*

Similarly, no public hearing is required for any change to an increment of progress unless the change is likely to cause the facility to be unable to comply with the final compliance date. *[60.23(c)(2)]*

B. Legal Authority *[60.26(a)]*

1. The State Plan shall include demonstration of the State's legal authority to:

   (a) adopt emission standards (enforceable conditions) and compliance schedules applicable to the designated facilities and designated pollutants for which the State Plan is submitted

   (b) enforce applicable laws, regulations, standards, and compliance schedules, and seek injunctive relief

   (c) obtain information necessary to determine compliance

   (d) require recordkeeping, make inspections, and conduct tests

   (e) require the use of monitors and require emission reports of owners or operators

   (f) make emission data publicly available

   [60.26(a)]

2. The State must specifically identify the provisions above and include copies of the provisions of the law establishing such legal authority unless they have been approved as a portion of a previous SIP. To facilitate its review of State Plans, EPA encourages States to submit an opinion by the State's Attorney General as part of the demonstration required above. States may use previously submitted Attorney General opinions (e.g., under Title V) to the extent those documents

specifically address the requirements of Section 60.26 as they apply to the designated facilities and the designated pollutants. *[60.26(b)]*

3. The legal authority shown must be <u>in effect at time of State Plan submission</u>. *[60.26(c)]*

4. The State may authorize another State governmental agency to carry out a portion of the State Plan, provided the State demonstrates that the State governmental agency has adequate authority. *[60.26(e)]*

5. The State may authorize a local agency to carry out a portion of the State Plan provided that the State demonstrates that the local agency has adequate legal authority to implement that portion of the State Plan and the State is not relieved of responsibility. *[60.26(e)]*

C. <u>Emission Standards and other Emission Limitations</u>

1. The emission limitations must be at least as protective as the EG. If the limitations are not identical, the State must demonstrate that the standards are at least as protective. *[60.24(f), as revised December 19, 1995, to be consistent with Section 129 of the Act and 60.33e of Subpart Ce]*

NOTE: Nothing in the Clean Air Act nor the CFR restricts the State from having standards and schedules more stringent than the EG. *[60.24(g)]*

2. The State Plan shall include the specific emission limitations, preferably cross-referenced to the specific EG requirements. *[60.24(a)]*

3. Test methods and procedures for determining compliance shall be specified. *[60.24(b)2)]*

4. If the methods and procedures are not identical to those in Section 60.56c, the State must demonstrate equivalence or request EPA approval of acceptable alternatives per current EPA method review procedures. *[60.24(b)(2)]*

5. If emission standards are adopted by local agencies or other State agencies, they must also be included in the State Plan and if not identical to the EG, then the State must show that they are at least as protective as the emission guidelines. *[60.24(a)]*

D. <u>Compliance Schedules</u>

1. Compliance schedules must match the Ce and B specifications. *[Subpart Ce, 60.39e]*

2. For compliance schedules extending more than 12 months beyond the date of EPA approval of the State Plan, the compliance schedule must include legally enforceable increments of progress towards compliance for that HMIWI. Each increment of progress in Section 60.21(h) of Subpart B must have a compliance date and must be included as an enforceable increment in the State Plan. The State Plan may include such additional increments of progress as may be necessary to permit close and effective supervision of progress towards final compliance. *[60.24(e)(1), 60.21(h), & 60.39e]*

The minimum five increments of progress are as follows:

(a) Submittal of Final Control Plan; (This may be a brief document or letter describing the controls that the source will use to comply with the emission limitations and other requirements. Most likely, the source, public, and State will have discussed this information as part of the State process for development of the compliance schedule for the draft State Plan prior to submittal of the State Plan to EPA.) *[60.21(h)(1)]*

(b) Awarding of contracts for controls systems or process modifications or orders for purchase of components; *[60.21(h)(2)]*

(c) Initiation of on-site construction or installation of the air pollution control device(s) or process changes; *[60.21(h)(3)]*

(d) Completion of on-site construction or installation of control equipment or process changes; *[60.21(h)(4)]*

(e) Final compliance. *[60.21(h)(5)]*

The first four of these increments of progress can be set as calendar dates or floating dates tied to the date of the approval of the State Plan or the date of permit issuance, if a permit is required. For example, the date for submitting a final control plan could be set as three months following approval of the State Plan. If an increment of progress is set based on the date of permit issuance the State Plan must identify the specific permit.

The fifth increment of progress, the date for final compliance, can be set as a calendar date or a floating date, but if it is floating, it can be tied only to the date of approval of the State Plan, not the date of permit issuance, and must include the limitation that the date can in no case be later than September 15, 2002.

3. Suggested measurable and enforceable activities are listed in 60.39e(c)(1) through (9) (60 FR 48381). The State may choose to include them in the State Plan as enforceable increments of progress with compliance dates, or as non-enforceable increments of progress with reporting requirements only, or choose to leave them out of the State Plan.

The suggested increments of progress activities are:

(a) Date for submitting a petition for site specific operating parameters;

(b) Date for obtaining services of an architectural and engineering firm regarding the air pollution control device(s);

(c) Date for obtaining design drawings of the air pollution control device(s);

(d) Date for ordering the air pollution control device(s) *[already required where practicable by 60.24(e)(1) and 60.21(h)(1)]*;

(e) Date for obtaining the major components of the air pollution control device(s);

(f) Date for initiation of site preparation for installation of the air pollution control device(s) *[already required where practicable by 60.24(e)(1) and 60.21(h)(1)]*;

(g) Date for initiation of installation of the air pollution control device(s);

(h) Date for initial startup of the air pollution control device(s);

(i) Date for initial compliance test(s) of the air pollution control device(s);

The EPA strongly recommends that activities (h) and (i) be included in the compliance schedules. Performance tests must be conducted within 180 days after the final retrofit, and the report of the test results must be submitted within 60 days after the test is conducted. The test results will demonstrate whether or not the HMIWI is in compliance with the emission standards. This performance test timing is consistent with other EPA air regulations for existing sources, such as the Part 63 NESHAP general provisions. The EPA also strongly encourages States and HMIWI owners or operators to conduct preliminary performance tests at least 2-3 months prior to the scheduled final compliance date in order for the HMIWI to make any necessary shakedown changes and retest(s), as necessary, prior to the final compliance date.

4. The State Plan may include one set of increments with compliance dates applicable to all HMIWI, or the State Plan may vary the compliance dates to address specific issues relevant to individual facilities. However, the enforceable increments of progress must be arranged chronologically and the compliance dates must be set to ensure full compliance with the applicable requirements *as expeditiously as practicable*. *[60.24(c)]* For example, a State Plan that requires an HMIWI to "submit a final control plan and to award contracts no later than the third year of the compliance schedule" will be closely examined to determine whether the State is requiring the HMIWI to comply as expeditiously as practicable.

E. Emission Inventories

The State Plan must include an "emission inventory" of all designated pollutants for all designated facilities. *[60.25(a)]*

Emission data must be included where available but estimates can be used where data are not currently available. Emission factors and default values are described in this Summary Document.

In addition to the initial inventory, updates are required. *[60.25(f)(5]* The updated information is required to be submitted annually in the 51.321 reports. *[60.24(e)(1)]* The emission data should be submitted to the Aerometric Information Retrieval System (AIRS) *[51.321-51.323]*

F. Source Surveillance, Compliance Assurance & Enforcement

The State Plan must provide for monitoring the status of compliance. As a minimum, the State Plan shall include:

1. Provisions for legally enforceable procedures to:

   (a) require recordkeeping on nature and amount of emissions and reports to the State. *[60.25(b)(1)]*

   (b) require any additional information to judge compliance. *[60.25(b)(1)]*

2. Provisions for periodic inspection and testing, if necessary. *[60.25(b)(2)]*

3. Provisions for emission data and other compliance monitoring information to be correlated with applicable emission standards and be made available to the public. "Correlated" means showing the relationship between the measured or estimated amounts of emissions and the amounts of such emissions allowable. For example, the emissions should be in the same units and averaging times. *[60.25(a) and (c)]*

4. HMIWI Requirements for Testing, Monitoring, Recordkeeping, and Reporting that are identical to those specified in 60.37e and 60.38e. *[Subpart Ce]*

5. Specific identification of the provisions in 1 through 4 above. Copies of such provisions should be included unless they have been approved as portions of a preceding Section 111(d)/129 State Plan or State Implementation Plan (SIP) and the State demonstrates that the provisions are applicable and the requirements of 60.26 (legal authorities) are met. *[60.25(d)]*

6. Commitment to submit reports on progress in plan enforcement to the EPA Regional Administrator on an annual basis and include it in the reports required by 51.321. *[60.25(e) and (f)]* Each progress report shall include: enforcement

actions, achievement of increments of progress, identification of sources that have ceased operation, emission inventory information for sources that were not in operation at the time of plan development, updated emission inventory and compliance information, and copies of technical reports on all performance testing, including concurrent process data. *[60.25(f)(1) through 60.25(f)(6)]*

Note: Some States and Regions have developed more specific or tailored reporting and recordkeeping procedures via Memoranda of Agreements, Program Specific Guidance for Section 105 Grants, and the Timely and Appropriateness Guidance that should also be followed. For example, some regions prefer that the State retain the performance test report until the region needs to review it as part of a compliance determination or other action.

Appendix C

Emission Guideline Fact Sheet (40 CFR 60 Subpart Ce)

FACT SHEET

Existing Hospital/Medical/Infectious Waste Incinerators --
(formerly known as medical waste incinerators or MWI)

Promulgated Subpart Ce Emission Guidelines

APPLICABILITY

The subpart Ce emission guidelines apply to existing HMIWI[1] that commenced construction on or before June 20, 1996. The intent of the guidelines is to initiate State action to develop State regulations controlling emissions from existing HMIWI. The State regulations developed in response to these emission guidelines will apply to about 2,400 existing HMIWI.

BACKGROUND

This action adds subpart Ce to 40 CFR part 60. Subpart Ce promulgates emission guidelines and compliance schedules for use by States in developing State regulations to control emissions from existing HMIWI. The promulgated guidelines implement sections 111(d) and 129 of the Clean Air Act. Section 129 requires the Administrator to establish emission guidelines pursuant to section 111 and 129 for HMIWI. Through the State regulations, the guidelines require existing HMIWI to control emissions of air pollutants to levels that reflect the degree of emission reduction based on MACT. In addition, the guidelines include requirements for waste management and HMIWI operator training and qualification.

POLLUTANTS REGULATED

Consistent with section 129 of the Clean Air Act, the subpart Ce emission guidelines include numerical emission limits for PM, opacity, CO, dioxin/furan, HCl, SO_2, NO_x, Pb, Cd, and Hg.

EMISSION GUIDELINES

The emission guidelines will reduce emissions from HMIWI by requiring States to develop regulations limiting emissions from existing HMIWI. The numerical emission limits and other provisions of the guidelines are summarized in the attached emission guidelines summary table.

NATIONAL COSTS

It is expected that many facilities which currently operate onsite incinerators will switch to less expensive methods of treatment and disposal when faced with the compliance costs associated with the emission guidelines. Under this scenario, the total annual cost increase to implement the emission guidelines is estimated to range from $59 million/yr to $120 million/yr, depending on the amount of switching that takes place. The overall nationwide cost increase per unit of waste treated is estimated to range from $77 to $156/Mg. These costs represent the total cost increase for the guidelines over current baseline conditions.

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[1]Note: abbreviations are defined at the end of this fact sheet.

NATIONAL EMISSION REDUCTIONS

The guidelines are expected to reduce emissions from existing HMIWI as follows:

Pollutant	Baseline emissions	Nationwide emission reduction	Nationwide emission reduction (percent)[a]
PM, Mg/yr	940	820 to 870	88% to 92%
CO, Mg/yr	460	340 to 380	75% to 82%
total dioxin/ furan[b], g/yr	7,200	6,900 to 7,000	96% to 97%
dioxin/furan TEQ[b], g/yr	148	141 to 143	95% to 97%
HCl, Mg/yr	5,700	5,600	98%
SO_2, Mg/yr	250	0 to 74	0% to 30%
NO_x, Mg/yr	1,200	0 to 350	0% to 30%
Pb, Mg/yr	11	8.6 to 9.4	80% to 87%
Cd, Mg/yr	1.2	0.91 to 1.0	75% to 84%
Hg, Mg/yr	14.5	13.5 to 13.8	93% to 95%

[a] These reductions represent reductions from the regulatory baseline. Percent reductions have been calculated based on the actual (unrounded) values for baseline emissions and nationwide emissions reduction.

[b] Total dioxin/furan reflects total tetra- through octa- chlorinated dibenzo-p-dioxins and dibenzofurans, as measured by EPA Reference Method 23. TEQ reflects the toxic equivalent quantity of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin using international toxic equivalency factors.

EMISSION GUIDELINES SUMMARY TABLE (subpart Ce)

Applicability

- As discussed earlier, the promulgated guidelines apply to existing HMIWI units. An HMIWI is defined as any device which burns any amount of hospital waste or medical/infectious waste (see the regulatory text for definitions). However, certain exemptions apply, as follows:

  - Combustors subject to subpart Cb, Ea, or Eb (standards and guidelines for certain municipal waste combustors) are not subject to subpart Ce, regardless of the amount of hospital waste or medical/infectious waste burned.

  - Combustors subject to a section 3005 permit under the Solid Waste Disposal Act are not subject to subpart Ce.

  - Devices that co-fire hospital waste and/or medical/infectious waste with other fuels or wastes and combust 10 percent or less hospital waste and medical/infectious waste by weight (on a calendar quarter basis) are exempt from the guidelines, but must notify the Administrator of an exemption claim and keep records of fuels and wastes combusted. For purposes of calculating the 10 percent hospital and medical/infectious waste, three types of waste (pathological waste, low-level radioactive waste, and chemotherapeutic waste) are considered "other" waste, even if they meet the definition of hospital waste or medical/infectious waste.

  - The guidelines do not apply during periods when only pathological, low-level radioactive, and/or chemotherapeutic waste is being burned. The facility must keep records indicating the time periods when only these wastes were combusted.

- The HMIWI source category is divided into three subcategories based on waste burning capacity: small ($\leq$200 lb/hr), medium (>200 to 500 lb/hr), and large (>500 lb/hr). Size may be determined by the maximum design capacity or by establishing an enforceable limit (the "maximum charge rate") on the amount of waste burned per hour. In other words, sources may change their size designation by establishing a maximum charge rate that is less than their design capacity. Separate emission limitations apply to each subcategory of existing HMIWI.

- The guidelines contain optional (less stringent) emission limits for small "remote" HMIWI that are: (1) located more than 50 miles from the nearest Standard Metropolitan Statistical Area, and (2) burn less than 2,000 pounds of waste per week.

EMISSION GUIDELINES SUMMARY TABLE (subpart Ce)
(continued)

Numerical Emission Limits:

- The guidelines establish a 10 percent opacity limit for all existing HMIWI
- Pollutant emission limits for small existing HMIWI are as follows (corrected to 7 percent O_2):

Pollutant	Emission limit	Basis
PM	115 mg/dscm	low efficiency wet scrubber[a] or DI/FF[a] or SD/FF[a]
CO	40 ppmdv	good combustion
dioxin/furan[b]	2.3 ng/dscm TEQ or 125 ng/dscm total dioxin/furan[b]	wet scrubber[a] or DI/FF with carbon[a] or SD/FF with carbon[a]
HCl	100 ppmdv or 93 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
SO_2	55 ppmdv	no control
NO_x	250 ppmdv	no control
Pb	1.2 mg/dscm or 70 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
Cd	0.16 mg/dscm or 65 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
Hg	0.55 mg/dscm or 85 percent reduction	wet scrubber[a] or DI/FF with carbon[a] or SD/FF with carbon[a]

EMISSION GUIDELINES SUMMARY TABLE (subpart Ce)
(continued)

See Footnotes on page 10

Numerical Emission Limits (continued):

- Optional pollutant emission limits for existing small "remote" HMIWI are as follows (corrected to 7 percent O_2):

Pollutant	Emission limit	Basis
PM	197 mg/dscm	good combustion
CO	40 ppmdv	good combustion
dioxin/furan[b]	15 ng/dscm TEQ or 800 ng/dscm total dioxin/furan[b]	good combustion
HCl	3,100 ppmdv	no control
SO_2	55 ppmdv	no control
NO_x	250 ppmdv	no control
Pb	10 mg/dscm	no control
Cd	4 mg/dscm	no control
Hg	7.5 mg/dscm	Hg separation

See Footnotes on page 10

Numerical Emission Limits (continued):

- Pollutant emission limits for medium existing HMIWI are as follows (corrected to 7 percent O_2):

Pollutant	Emission limit	Basis
PM	69 mg/dscm	moderate efficiency wet scrubber[a] or DI/FF[a] or SD/FF[a]
CO	40 ppmdv	good combustion
dioxin/furan[b]	2.3 ng/dscm TEQ or 125 ng/dscm total dioxin/furan[b]	wet scrubber[a] or DI/FF with carbon[a] or SD/FF with carbon[a]
HCl	100 ppmdv or 93 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
SO_2	55 ppmdv	no control
NO_x	250 ppmdv	no control
Pb	1.2 mg/dscm or 70 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
Cd	0.16 mg/dscm or 65 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
Hg	0.55 mg/dscm or 85 percent reduction	wet scrubber[a] or DI/FF with carbon[a] or SD/FF with carbon[a]

See Footnotes on page 10

Numerical Emission Limits (continued):

- Pollutant emission limits for large existing HMIWI are as follows (corrected to 7 percent O_2):

Pollutant	Emission limit	Basis
PM	34 mg/dscm	high efficiency wet scrubber[a] or DI/FF[a] or SD/FF[a]
CO	40 ppmdv	good combustion
dioxin/furan[b]	2.3 ng/dscm TEQ or 125 ng/dscm total dioxin/furan[b]	wet scrubber[a] or DI/FF with carbon[a] or SD/FF with carbon[a]
HCl	100 ppmdv or 93 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
SO_2	55 ppmdv	no control
NO_x	250 ppmdv	no control
Pb	1.2 mg/dscm or 70 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
Cd	0.16 mg/dscm or 65 percent reduction	wet scrubber[a] or DI/FF[a] or SD/FF[a]
Hg	0.55 mg/dscm or 85 percent reduction	wet scrubber[a] or DI/FF with carbon[a] or SD/FF with carbon[a]

See Footnotes on page 10

Compliance Testing/Monitoring Requirements

• PM, CO, dioxin/furan, HCl, Pb, Cd, Hg, and opacity -- Compliance test by EPA Reference Method 5 (PM), 10 or 10B (CO), 23 (dioxin/furan), 26 (HCl), 29 (Pb, Cd, and Hg), and 9 (opacity)	Initial stack test
• CO -- Compliance test by EPA Reference Method 10 or 10B	Annual or third year[c] stack test
• PM -- Compliance test by EPA Reference Method 5	Annual or third year[c] stack test
• HCl -- Compliance test by EPA Reference Method 26	Annual or third year[c] stack test
• Opacity -- Compliance test by EPA Reference Method 9	Annual stack test

- For small existing HMIWI meeting the "remote" criteria, annual inspections are required instead of repeat stack tests for PM, CO, and HCl.

- The guidelines require that a designated facility monitor HMIWI and APCD operating parameters. Operating parameter limits are established during the initial performance test. The HMIWI operating parameters to be monitored include charge rate, secondary chamber temperature, and bypass stack temperature. An HMIWI equipped with a dry scrubber (DI/FF or SD/FF) must monitor dioxin/furan and Hg sorbent (e.g., carbon) flow rate, HCl sorbent (e.g., lime) flow rate, and fabric filter inlet temperature. An HMIWI equipped with a wet scrubber must monitor pressure drop across the system (or horsepower or amperage), liquor flow rate and pH, and the flue gas temperature. An HMIWI equipped with a combined dry/wet scrubber must monitor all of the parameters listed above.

- Operation of the facility outside established parameter limits are direct violations of the parameter limits. In addition, under certain conditions, operation outside established parameter limits constitute violations of specific emission limits unless the facility conducts a performance test showing compliance under the new operating parameter limits.

See Footnotes on page 10

Operator Training/Qualification Requirements

- The guidelines require that each facility have at least one trained and qualified operator on duty or on-call. The trained and qualified HMIWI operator must pass an HMIWI operator training course which is either State-approved or meets the requirements specified in the guidelines. Also, each facility is to develop site-specific information regarding HMIWI operation. Each employee involved with the operation of the HMIWI is required to review the operating information developed for the HMIWI. The site-specific information is required to be reviewed annually.

Waste Management

- The guidelines require facilities to develop a waste management plan that identifies the feasibility and approach to separate certain components of the medical/infectious waste stream and hospital waste stream.

Compliance Schedule

- State plans are required to include one of the following two schedules for full compliance with the State plan: (1) full compliance with the emission guidelines within 1 year after EPA approval of the State plan; or (2) full compliance with the State plan within 3 years after EPA approval of the State plan, provided the State Plan includes measurable and enforceable incremental steps of progress that will be taken to comply with the State plan.

- The guidelines require compliance with the operator training and qualification, inspection, and waste management plan requirements within 1 year after the date of EPA approval of a State plan.

- If an approved State plan is not in place by the date two years after promulgation of the emission guidelines, EPA must develop a Federal Plan. The Clean Air Act requires that all sources be in compliance with the State or Federal Plan by the date five years after promulgation of the emission guidelines. Note that while the guidelines were signed by the EPA Administrator on August 15, 1997, the official date of "promulgation" is the date of publication in the Federal Register. At the time this fact sheet was prepared, the guidelines had been signed but not yet published in the Federal Register.

EMISSION GUIDELINES SUMMARY TABLE (subpart Ce)
(continued)

Reporting and Recordkeeping

- The emission guidelines require owners of existing facilities to maintain thorough records documenting the results of the initial and annual performance tests, continuous monitoring of site-specific operating parameters, initial and annual inspection, compliance with the operator training and qualification requirements, and the waste management plan. These records must be kept on file for at least 5 years.

- The emission guidelines require owners or operators to submit the results of the initial and annual maintenance inspections and the results of the initial performance test and all subsequent performance tests. Additionally, reports on emission rates or operating parameters that have not been obtained or that exceed applicable limits must be submitted on a semi-annual basis. If no exceedances occur during a semi-annual period, the owner of the designated facility is required to submit an annual report stating that no excceedances occurred. All reports must be signed by the facilities manager.

Footnotes for Emission Guideline Summary Table:

[a] Includes good combustion

[b] Dioxin/furan are measured as total tetra- through octa- chlorinated dibenzo-p-dioxins and dibenzofurans, and then TEQ is determined using international toxicity equivalency factors as specified in the guidelines.

[c] Except for small existing HMIWI meeting the "remote" criteria, emissions of PM, CO, and HCl must be determined by an annual stack test. However, if an HMIWI passes all three annual compliance tests in a 3-year period, then the HMIWI may forgo testing for the next 2 years. If any subsequent test indicates noncompliance, then annual testing would again be needed until three annual tests in a row indicate compliance.

Abbreviations used in this Fact Sheet and Summary Table

APCD =	Air Pollution Control Device
Cd =	cadmium
dioxin/furan =	dibenzo-p-dioxins and dibenzofurans
CO =	carbon monoxide
DI/FF =	dry injection/fabric filter
EPA =	United States Environmental Protection Agency
g =	gram
HCl =	hydrogen chloride
Hg =	mercury
HMIWI =	hospital/medical/infectious waste incinerator(s)
lb/hr =	pounds per hour
MACT =	maximum achievable control technology
Mg =	megagram
mg/dscm =	milligrams per dry standard cubic meter
ng/dscm =	nanograms per dry standard cubic meter
NO_x =	nitrogen oxides
O_2 =	oxygen
Pb =	lead
PM =	particulate matter
ppmdv =	parts per million by dry volume
SO_2 =	sulfur dioxide
SD/FF =	spray dryer/fabric filter
TEQ =	toxic equivalency of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin
yr =	year

NOTE: The fact sheets, along with the final regulations and some other documents pertaining to hospital/medical/infectious waste incinerators, are available on the Internet at "http://www.epa.gov/ttn/oarpg/rules.html" under the file name "mwifinal.zip"

Appendix D

Applicability of the HMIWI Emission Guidelines

D1 - Applicability Flowchart
D2 - HMIWI Capacity Determination
D3 - Small Rural Criteria

Appendix D1

Applicability Flowchart

APPENDIX D1--APPLICABILITY FLOWCHART

The HMIWI Emission Guidelines apply to individual HMIWI for which construction was commenced on or before June 20, 1996. Hospital/medical/infectious waste incinerators which commenced construction after June 20, 1996 are not subject to the Emission Guidelines, but are subject to the Subpart Ec New Source Performance Standards. An HMIWI is any device which combusts any amount of hospital waste and/or medical/infectious waste (as defined in §60.51c of Subpart Ec). There are several exemptions to the HMIWI Emission Guidelines as noted below.

Combustors are not subject to the Emission Guidelines during periods when only pathological, low-level radioactive, and/or chemotherapeutic waste (all defined in §60.51c of Subpart Ec) are being burned provided that facilities operating such combustors notify the Administrator of an exemption claim; and keep records of the periods of time when only these wastes are burned.

Similarly, co-fired combustors are not subject to the Emission Guidelines provided that facilities operating such combustors notify the Administrator of an exemption claim; provide an estimate of the weight of hospital waste, medical/infectious waste, and other fuels and/or wastes combusted; and keep quarterly records of the amount of hospital waste and medical/infectious waste, and other fuels burned. Co-fired combustors are defined in §60.51c of Subpart Ec as units which combust 10 percent or less by weight (of the fuel feed) hospital waste and medical/infectious waste as measured on a calendar quarter basis. Although pathological, chemotherapeutic, and low-level radioactive wastes sometimes meet the definition of hospital waste or medical/infectious waste, they are considered "other fuels and/or wastes" when calculating the amount of hospital waste and medical/infectious waste burned in a co-fired combustor.

Combustors required to have a permit under Section 3005 of the Solid Waste Disposal Act; combustors subject to Subparts Cb, Ea, or Eb (MWC larger than 250 tons/day); and cement kilns firing hospital and/or medical/infectious waste are not subject to the HMIWI Emission Guidelines. Furthermore, pyrolysis units are not subject to the Emission Guidelines. Pyrolysis is defined in §60.51c of Subpart Ec as the endothermic gasification of hospital waste and medical/infectious waste using external energy.

An applicability flowchart (Figure D-1) is provided below to summarize the applicability of the Emission Guidelines to the various types of combustors which may combust items that could be considered as hospital waste and/or medical infectious waste. Generally, the HMIWI Emission Guidelines apply to incinerators located at hospitals, commercial medical waste incinerators, and other incinerators used primarily for burning hospital waste and/or medical/infections waste. However, there are many types of combustion systems that may burn small amounts of waste that could be considered as hospital waste or medical/infectious waste under the promulgated definitions of these wastes in the HMIWI Emission Guidelines. The purpose of the HMIWI Emission Guidelines is not to cover every system that may burn a few items that could be considered as hospital or medical/infectious waste. Therefore, EPA has attempted to exclude most combustion systems not intended to primarily combust hospital waste or medical/infectious waste from coverage under the HMIWI Emission Guidelines through either

an outright exemption or through the cofired combustor provision. The EPA has announced that regulations for other solid waste incinerators will be developed by the year 2000. Thus, burning of hospital waste or medical/infectious wastes in other solid waste incineration units will be covered by regulations developed within the next few years. The following questions and answers attempt to clarify how certain types of combustors are either included or excluded from the HMIWI Emission Guidelines.

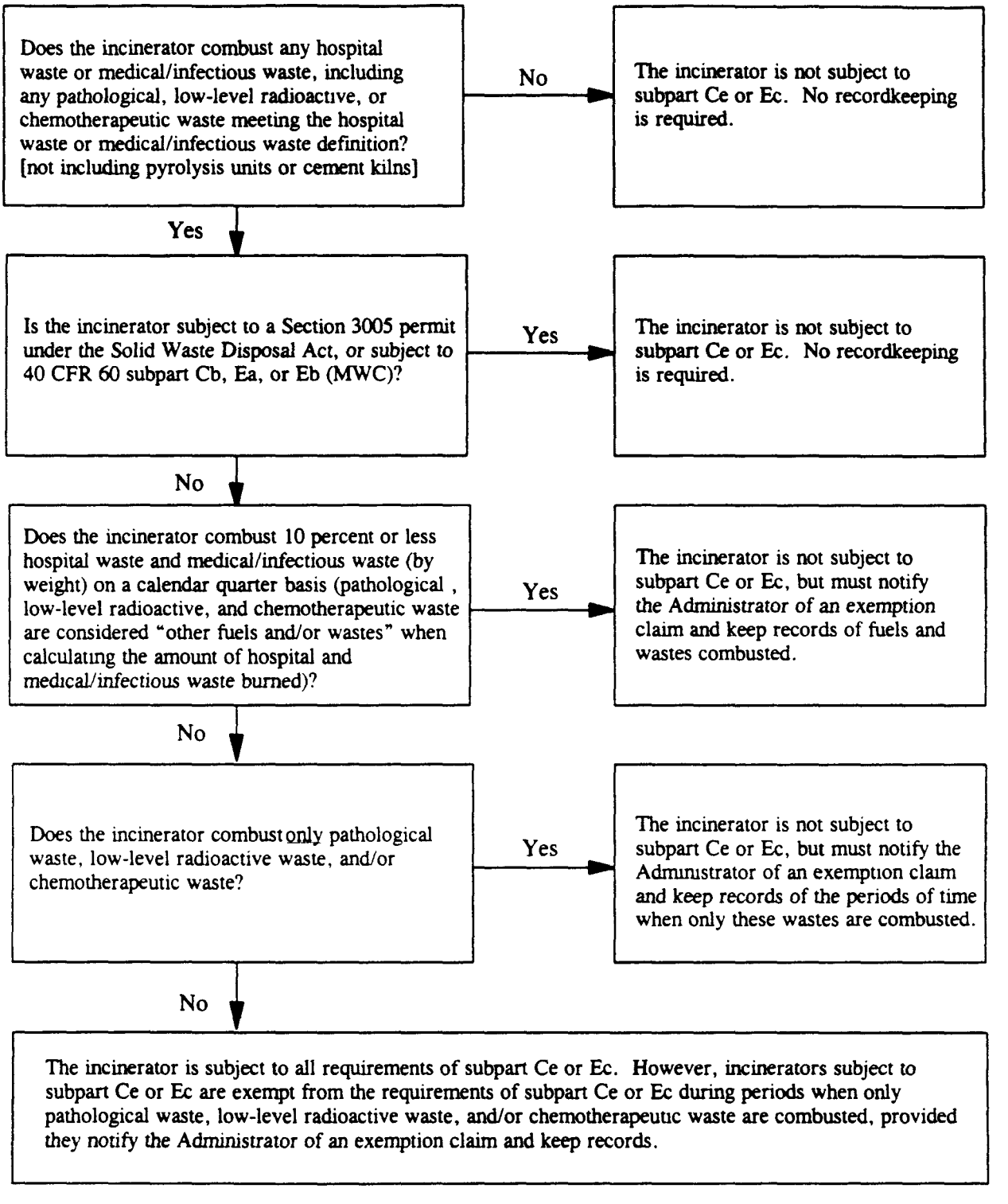


Figure D-1. Applicability Flowchart for HMIWI.

Appendix D2

HMIWI Capacity Determination

APPENDIX D2 - HMIWI CAPACITY DETERMINATION

The HMIWI Emission Guidelines contain different emission limitations for the three HMIWI subcategories: small, medium, and large. The three HMIWI subcategories are based on waste burning capacity (pound per hour [lb/hr]). The small subcategory consists of HMIWI that burn less than or equal to 200 pounds of waste per hour ($\leq$ 200 lb/hr). The medium subcategory includes HMIWI that burn between 200 and 500 pounds of waste per hour (> 200 to $\leq$ 500 lb/hr). The large subcategory includes HMIWI that burn more than 500 pounds of waste per hour (> 500 lb/hr).

Generally, there are three different HMIWI design types: batch, intermittent, and continuous. These design types differ in the methods used to charge waste and remove ash. In batch HMIWI, neither waste charging nor ash removal can occur during combustion. Intermittent HMIWI are designed to allow waste charging, but not ash removal, during combustion. Continuous HMIWI are designed to allow waste charging and ash removal during combustion.

Due to the differences in waste charging techniques, the methods for determining the maximum design waste burning capacity and maximum charge rate (defined in §60.51c of Subpart Ec) are different for batch HMIWI than for continuous and intermittent HMIWI. Either the maximum design waste burning capacity or the maximum charge rate may be used to determine the HMIWI subcategory.

For continuous and intermittent HMIWI, maximum charge rate is defined in Subpart Ec as 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with the emission limits. Table D-1 presents an example of the maximum charge rate calculation for an intermittent HMIWI with two days of initial test data.

Maximum design waste burning capacity is defined for continuous and intermittent HMIWI with the following formula:

$C = P_v \times (15{,}000/8{,}500)$
where:

C = HMIWI capacity (lb/hr),
P_v = primary chamber volume (ft^3),
15,000 = primary chamber heat release rate factor ($Btu/ft^3/hr$), and
8,500 = standard waste heating value (Btu/lb).

For batch HMIWI, the maximum charge rate is defined in Subpart Ec as 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with the emission limits. For example, suppose a batch HMIWI was charged with 1,400 lb on day 1 and 1,700 lb on day 2 of an initial compliance test. The maximum charge rate for this HMIWI would be 110 percent of 1,400 lb/day (the lowest daily charge rate) or 1,540 lb/day.

TABLE D-1. MAXIMUM CHARGE RATE
EXAMPLE CALCULATION

Charge log (lb/hr)	3-hour average (lb/hr)
345	--
376	--
359	360
341	359
387	362
361	363
368	372
337	355
329	345
358	**341**
362	350
343	354
364	356
381	363
Lowest 3-hour average charge rate during initial testing = 341 lb/hr	
Maximum charge rate = 1.1 x 341 = **375 lb/hr**	

Maximum design waste burning capacity is defined for batch HMIWI with the following formula:

$$C = P_v \times (4.5/8)$$

where:

C = HMIWI capacity (lb/hr),
P_v = primary chamber volume (ft^3),
4.5 = waste density (lb/ft^3), and
8 = typical hours of operation for a batch HMIWI (hr).

Table D-2 summarizes the criteria specified in the Emission Guidelines for maximum design waste burning capacity and for maximum charge rate for the three HMIWI subcategories.

TABLE D-2. SUMMARY OF CRITERIA FOR DETERMINING HMIWI SIZE CATEGORY AS STATED IN THE EMISSION GUIDELINES

Size Criteria	HMIWI Subcategory		
	Small	Medium	Large
Maximum design waste burning capacity (lb/hr)	≤200	>200 and ≤500	>500
Maximum charge rate for batch HMIWI (lb/day)	≤1,600	>1,600 and ≤4,000	>4,000
Maximum charge rate for intermittent and continuous HMIWI (lb/hr)	≤200	>200 and ≤500	>500

For convenience, Table D-3 presents the range of primary chamber volumes for each subcategory for batch and continuous/intermittent HMIWI. These primary chamber volumes were obtained from the above equations for maximum design waste burning capacity for each subcategory.

TABLE D-3. PRIMARY CHAMBER VOLUMES FOR USE IN DETERMINING MAXIMUM DESIGN WASTE BURNING CAPACITY

HMIWI Type	Maximum design waste burning capacity (lb/hr)		
	≤200[a]	>200 to ≤ 500[b]	>500[c]
Primary chamber volume for batch HMIWI (ft^3)	≤ 356	> 356 to ≤ 889	> 889
Primary chamber volume for intermittent or continuous HMIWI (ft^3)	≤ 113	> 113 to ≤ 283	> 283

[a]Small HMIWI subcategory.
[b]Medium HMIWI subcategory.
[c]Large HMIWI subcategory.

In cases where the maximum design waste burning capacity places an HMIWI in one subcategory and the maximum charge rate places the same HMIWI in a different subcategory, the maximum charge rate prevails. Most HMIWI operate at around two-thirds of their design capacity; very few HMIWI operate at their maximum design waste burning capacity. The maximum design waste burning capacity of an HMIWI is fixed and cannot be changed. The maximum charge rate, on the other hand, can be controlled by the HMIWI operator. The Emission Guidelines allow an HMIWI used to burn less waste than its design capacity to change its size category. For example, an HMIWI with a maximum design waste burning capacity of 300 lb/hr (e.g., a medium HMIWI by design), may only be used to burn 150 lb/hr. By virtue of the maximum charge rate, such an HMIWI could be considered as a small HMIWI for purposes

of the Emission Guidelines, and would be allowed to meet slightly less stringent emission limits. The HMIWI would be bound by the maximum charge rate in its State operating permit for enforcement purposes.

Larger HMIWI which derate their capacities to be considered as smaller HMIWI must account for the 110 percent operating range specified in the Emission Guidelines when establishing their permitted maximum charge rate. For example, a facility operating a 300 lb/hr HMIWI must ensure that the lowest 3-hour average charge rate does not exceed 182 lb/hr if the HMIWI is to be considered a small HMIWI. This is because the 110 percent operation applied to the 182 lb/hr average charge rate will establish the maximum charge rate at 200 lb/hr (i.e., the cutoff for the small HMIWI subcategory). Likewise, to fall into the medium subcategory, a facility operating a large HMIWI must ensure that the lowest 3-hour average charge rate does not exceed 455 lb/hr because the 110 percent operation will establish the maximum charge rate at 500 lb/hr (i.e., the cutoff for the medium HMIWI subcategory).

Appendix D3

Small Rural Criteria

APPENDIX D3 - SMALL RURAL CRITERIA

The Emission Guidelines are slightly less stringent for HMIWI in the small subcategory which meet certain rural criteria. The rural criteria stipulate that the small HMIWI must: (1) be located more than 50 miles (straight line distance) from the boundary of the nearest Standard Metropolitan Statistical Area (SMSA) and (2) burn less than 2,000 pounds per week (lb/wk)of hospital waste and medical/infectious waste.

The Emission Guidelines allow small rural HMIWI to comply with emission limits based on the use of good combustion alone (rather than emission limits based on the use of good combustion and a low efficiency wet scrubber). When conducting initial compliance testing, small rural HMIWI are only required to test for PM, CO, CDD/CDF, Hg, and opacity (i.e., initial testing for HCl, Pb, and Cd is not required). Furthermore, instead of conducting annual compliance tests, small rural HMIWI are allowed to conduct annual equipment inspections.

Standard Metropolitan Statistical Areas are defined by the Office of Management and Budget. Since SMSA's change with population growth and decline, for the purposes of the emission guidelines the SMSA's have been based on the OMB June 30, 1993 listing of SMSA's. A list of the SMSA's as defined on June 30, 1993 is attached. This document may be requested from EPA's Air and Radiation Document and Information Center (Docket A-91-61, Item IV-J-143) Room M-1500, 401 M Street SW, Washington, DC, phone: (202) 260-7548. In addition, this document is available on the Internet at the following address:

"http://www.census.gov/population/estimates/metro-city/93mfips.txt"

LISTING OF THE STANDARD METROPOLITAN STATISTICAL AREAS
JUNE 30, 1993

Source: US Census Bureau

GUIDE TO FIPS CODES:

MSA= Metropolitan Statistical Area
CMSA= Consolidated Metropolitan Statistical Area
PMSA= Primary Metropolitan Statistical Area
SS= State
CCC= County
EEEEE= Entity (city/town)

MSA/ CMSA	PMSA	SSCCCEEEEE	Metropolitan Area and Components
0040			Abilene, TX MSA
0040		48441	Taylor County
0060			Aguadilla, PR MSA
0060		72003	Aguada Municipio
0060		72005	Aguadilla Municipio
0060		72099	Moca Municipio
0120			Albany, GA MSA
0120		13095	Dougherty County
0120		13177	Lee County
0160			Albany-Schenectady-Troy, NY MSA
0160		36001	Albany County
0160		36057	Montgomery County
0160		36083	Rensselaer County
0160		36091	Saratoga County
0160		36093	Schenectady County
0160		36095	Schoharie County
0200			Albuquerque, NM MSA
0200		35001	Bernalillo County
0200		35043	Sandoval County
0200		35061	Valencia County
0220			Alexandria, LA MSA
0220		22079	Rapides Parish

0240	Allentown-Bethlehem-Easton, PA MSA
0240 42025	Carbon County
0240 42077	Lehigh County
0240 42095	Northampton County
0280	Altoona, PA MSA
0280 42013	Blair County
0320	Amarillo, TX MSA
0320 48375	Potter County
0320 48381	Randall County
0380	Anchorage, AK MSA
0380 02020	Anchorage Borough
0450	Anniston, AL MSA
0450 01015	Calhoun County
0460	Appleton-Oshkosh-Neenah, WI MSA
0460 55015	Calumet County
0460 55087	Outagamie County
0460 55139	Winnebago County
0480	Asheville, NC MSA
0480 37021	Buncombe County
0480 37115	Madison County
0500	Athens, GA MSA
0500 13059	Clarke County
0500 13195	Madison County
0500 13219	Oconee County
0520	Atlanta, GA MSA
0520 13013	Barrow County
0520 13015	Bartow County
0520 13045	Carroll County
0520 13057	Cherokee County
0520 13063	Clayton County
0520 13067	Cobb County
0520 13077	Coweta County
0520 13089	DeKalb County
0520 13097	Douglas County
0520 13113	Fayette County
0520 13117	Forsyth County
0520 13121	Fulton County
0520 13135	Gwinnett County

0520 13151	Henry County
0520 13217	Newton County
0520 13223	Paulding County
0520 13227	Pickens County
0520 13247	Rockdale County
0520 13255	Spalding County
0520 13297	Walton County
0600	Augusta-Aiken, GA-SC MSA
0600 13073	Columbia County, GA
0600 13189	McDuffie County, GA
0600 13245	Richmond County, GA
0600 45003	Aiken County, SC
0600 45037	Edgefield County, SC
0640	Austin-San Marcos, TX MSA
0640 48021	Bastrop County
0640 48055	Caldwell County
0640 48209	Hays County
0640 48453	Travis County
0640 48491	Williamson County
0680	Bakersfield, CA MSA
0680 06029	Kern County
0730	Bangor, ME MSA
0730 23019	Penobscot County (pt.)
0730 2301902795	Bangor city
0730 2301906925	Brewer city
0730 2301922535	Eddington town
0730 2301927645	Glenburn town
0730 2301930795	Hampden town
0730 2301932510	Hermon town
0730 2301933490	Holden town
0730 2301936325	Kenduskeag town
0730 2301945670	Milford town
0730 2301955225	Old Town city
0730 2301955540	Orono town
0730 2301955680	Orrington town
0730 2301957937	Penobscot Indian Island Reservation
0730 2301978780	Veazie town
0730 23027	Waldo County (pt.)
0730 2302786760	Winterport town

0740	Barnstable-Yarmouth, MA MSA
0740 25001	Barnstable County (pt.)
0740 2500103635	Barnstable town
0740 2500107980	Brewster town
0740 2500112995	Chatham town
0740 2500116775	Dennis town
0740 2500119295	Eastham town
0740 2500129020	Harwich town
0740 2500139100	Mashpee town
0740 2500151440	Orleans town
0740 2500159735	Sandwich town
0740 2500182525	Yarmouth town
0760	Baton Rouge, LA MSA
0760 22005	Ascension Parish
0760 22033	East Baton Rouge Parish
0760 22063	Livingston Parish
0760 22121	West Baton Rouge Parish
0840	Beaumont-Port Arthur, TX MSA
0840 48199	Hardin County
0840 48245	Jefferson County
0840 48361	Orange County
0860	Bellingham, WA MSA
0860 53073	Whatcom County
0870	Benton Harbor, MI MSA
0870 26021	Berrien County
0880	Billings, MT MSA
0880 30111	Yellowstone County
0920	Biloxi-Gulfport-Pascagoula, MS MSA
0920 28045	Hancock County
0920 28047	Harrison County
0920 28059	Jackson County
0960	Binghamton, NY MSA
0960 36007	Broome County
0960 36107	Tioga County

	1000	Birmingham, AL MSA
	1000 01009	Blount County
	1000 01073	Jefferson County
	1000 01115	St. Clair County
	1000 01117	Shelby County
	1010	Bismarck, ND MSA
	1010 38015	Burleigh County
	1010 38059	Morton County
	1020	Bloomington, IN MSA
	1020 18105	Monroe County
	1040	Bloomington-Normal, IL MSA
	1040 17113	McLean County
	1080	Boise City, ID MSA
	1080 16001	Ada County
	1080 16027	Canyon County
07		Boston-Worcester-Lawrence, MA-NH-ME-CT CMSA
07	1120	Boston, MA-NH PMSA
07	1120 25005	Bristol County, MA (pt.)
07	1120 2500505280	Berkley town
07	1120 2500516950	Dighton town
07	1120 2500538225	Mansfield town
07	1120 2500549970	Norton town
07	1120 2500569170	Taunton city
07	1120 25009	Essex County, MA (pt.)
07	1120 2500901185	Amesbury town
07	1120 2500905595	Beverly city
07	1120 2500916250	Danvers town
07	1120 2500921850	Essex town
07	1120 2500926150	Gloucester city
07	1120 2500927900	Hamilton town
07	1120 2500932310	Ipswich town
07	1120 2500937490	Lynn city
07	1120 2500937560	Lynnfield town
07	1120 2500937945	Manchester town
07	1120 2500938400	Marblehead town
07	1120 2500941095	Middleton town
07	1120 2500943580	Nahant town
07	1120 2500945175	Newbury town
07	1120 2500945245	Newburyport city
07	1120 2500952490	Peabody city
07	1120 2500957880	Rockport town

07	1120	2500958405	Rowley town
07	1120	2500959105	Salem city
07	1120	2500959245	Salisbury town
07	1120	2500960015	Saugus town
07	1120	2500968645	Swampscott town
07	1120	2500970150	Topsfield town
07	1120	2500974595	Wenham town
07	1120	25017	Middlesex County, MA (pt.)
07	1120	2501700380	Acton town
07	1120	2501701605	Arlington town
07	1120	2501702130	Ashland town
07	1120	2501703005	Ayer town
07	1120	2501704615	Bedford town
07	1120	2501705070	Belmont town
07	1120	2501707350	Boxborough town
07	1120	2501709840	Burlington town
07	1120	2501711000	Cambridge city
07	1120	2501711525	Carlisle town
07	1120	2501715060	Concord town
07	1120	2501721990	Everett city
07	1120	2501724925	Framingham town
07	1120	2501730700	Holliston town
07	1120	2501731085	Hopkinton town
07	1120	2501731540	Hudson town
07	1120	2501735215	Lexington town
07	1120	2501735425	Lincoln town
07	1120	2501735950	Littleton town
07	1120	2501737875	Malden city
07	1120	2501738715	Marlborough city
07	1120	2501739625	Maynard town
07	1120	2501739835	Medford city
07	1120	2501740115	Melrose city
07	1120	2501743895	Natick town
07	1120	2501745560	Newton city
07	1120	2501748955	North Reading town
07	1120	2501756130	Reading town
07	1120	2501761380	Sherborn town
07	1120	2501761590	Shirley town
07	1120	2501762535	Somerville city
07	1120	2501767665	Stoneham town
07	1120	2501768050	Stow town
07	1120	2501768260	Sudbury town
07	1120	2501770360	Townsend town
07	1120	2501772215	Wakefield town
07	1120	2501772600	Waltham city
07	1120	2501773405	Watertown town

07	1120	2501773790	Wayland town
07	1120	2501777255	Weston town
07	1120	2501780230	Wilmington town
07	1120	2501780510	Winchester town
07	1120	2501781035	Woburn city
07	1120	25021	Norfolk County, MA (pt.)
07	1120	2502104930	Bellingham town
07	1120	2502107665	Braintree town
07	1120	2502109175	Brookline town
07	1120	2502111315	Canton town
07	1120	2502114640	Cohasset town
07	1120	2502116495	Dedham town
07	1120	2502117405	Dover town
07	1120	2502124820	Foxborough town
07	1120	2502125065	Franklin town
07	1120	2502130455	Holbrook town
07	1120	2502139765	Medfield town
07	1120	2502139975	Medway town
07	1120	2502141515	Millis town
07	1120	2502141690	Milton town
07	1120	2502144105	Needham town
07	1120	2502146050	Norfolk town
07	1120	2502150250	Norwood town
07	1120	2502154100	Plainville town
07	1120	2502155745	Quincy city
07	1120	2502155955	Randolph town
07	1120	2502160785	Sharon town
07	1120	2502167945	Stoughton town
07	1120	2502172495	Walpole town
07	1120	2502174175	Wellesley town
07	1120	2502178690	Westwood town
07	1120	2502178865	Weymouth town
07	1120	2502182315	Wrentham town
07	1120	25023	Plymouth County, MA (pt.)
07	1120	2502311665	Carver town
07	1120	2502317895	Duxbury town
07	1120	2502328285	Hanover town
07	1120	2502330210	Hingham town
07	1120	2502331645	Hull town
07	1120	2502333220	Kingston town
07	1120	2502338855	Marshfield town
07	1120	2502350145	Norwell town
07	1120	2502352630	Pembroke town
07	1120	2502354310	Plymouth town
07	1120	2502357775	Rockland town
07	1120	2502360330	Scituate town

07	1120	2502372985	Wareham town
07	1120	25025	Suffolk County, MA
07	1120	2502507000	Boston city
07	1120	2502513205	Chelsea city
07	1120	2502556585	Revere city
07	1120	2502580930	Winthrop town
07	1120	25027	Worcester County, MA (pt.)
07	1120	2502705490	Berlin town
07	1120	2502706015	Blackstone town
07	1120	2502706365	Bolton town
07	1120	2502728950	Harvard town
07	1120	2502730945	Hopedale town
07	1120	2502734165	Lancaster town
07	1120	2502740255	Mendon town
07	1120	2502741165	Milford town
07	1120	2502741585	Millville town
07	1120	2502763165	Southborough town
07	1120	2502771480	Upton town
07	1120	33015	Rockingham County, NH (pt.)
07	1120	3301568260	Seabrook town
07	1120	3301571140	South Hampton town
07	1200		Brockton, MA PMSA
07	1200	25005	Bristol County (pt.)
07	1200	2500520100	Easton town
07	1200	2500556060	Raynham town
07	1200	25021	Norfolk County (pt.)
07	1200	2502102935	Avon town
07	1200	25023	Plymouth County (pt.)
07	1200	2502300170	Abington town
07	1200	2502308085	Bridgewater town
07	1200	2502309000	Brockton city
07	1200	2502318455	East Bridgewater town
07	1200	2502327795	Halifax town
07	1200	2502328495	Hanson town
07	1200	2502333920	Lakeville town
07	1200	2502340850	Middleborough town
07	1200	2502354415	Plympton town
07	1200	2502375260	West Bridgewater town
07	1200	2502379530	Whitman town
07	2600		Fitchburg-Leominster, MA PMSA
07	2600	25017	Middlesex County (pt.)
07	2600	2501701955	Ashby town
07	2600	25027	Worcester County (pt.)
07	2600	2502701885	Ashburnham town
07	2600	2502723875	Fitchburg city
07	2600	2502725485	Gardner city

07	2600	2502735075	Leominster city
07	2600	2502737420	Lunenburg town
07	2600	2502769275	Templeton town
07	2600	2502777010	Westminster town
07	2600	2502780405	Winchendon town
07	4160		Lawrence, MA-NH PMSA
07	4160	25009	Essex County, MA (pt.)
07	4160	2500901465	Andover town
07	4160	2500907420	Boxford town
07	4160	2500925625	Georgetown town
07	4160	2500927620	Groveland town
07	4160	2500929405	Haverhill city
07	4160	2500934550	Lawrence city
07	4160	2500940430	Merrimac town
07	4160	2500940675	Methuen town
07	4160	2500946365	North Andover town
07	4160	2500977150	West Newbury town
07	4160	33015	Rockingham County, NH (pt.)
07	4160	3301502340	Atkinson town
07	4160	3301512100	Chester town
07	4160	3301517140	Danville town
07	4160	3301517940	Derry town
07	4160	3301527940	Fremont town
07	4160	3301532900	Hampstead town
07	4160	3301540100	Kingston town
07	4160	3301552900	Newton town
07	4160	3301562500	Plaistow town
07	4160	3301564020	Raymond town
07	4160	3301566660	Salem town
07	4160	3301567620	Sandown town
07	4160	3301585780	Windham town
07	4560		Lowell, MA-NH PMSA
07	4560	25017	Middlesex County, MA (pt.)
07	4560	2501705805	Billerica town
07	4560	2501713135	Chelmsford town
07	4560	2501717475	Dracut town
07	4560	2501717825	Dunstable town
07	4560	2501727480	Groton town
07	4560	2501737000	Lowell city
07	4560	2501752805	Pepperell town
07	4560	2501769415	Tewksbury town
07	4560	2501771025	Tyngsborough town
07	4560	2501776135	Westford town
07	4560	33011	Hillsborough County, NH (pt.)
07	4560	3301159940	Pelham town

07	4760		Manchester, NH PMSA
07	4760	33011	Hillsborough County (pt.)
07	4760	3301104500	Bedford town
07	4760	3301129860	Goffstown town
07	4760	3301145140	Manchester city
07	4760	3301179780	Weare town
07	4760	33013	Merrimack County (pt.)
07	4760	3301300660	Allenstown town
07	4760	3301337300	Hooksett town
07	4760	33015	Rockingham County (pt.)
07	4760	3301502820	Auburn town
07	4760	3301509300	Candia town
07	4760	3301543220	Londonderry town
07	5350		Nashua, NH PMSA
07	5350	33011	Hillsborough County (pt.)
07	5350	3301101300	Amherst town
07	5350	3301108100	Brookline town
07	5350	3301131940	Greenville town
07	5350	3301137140	Hollis town
07	5350	3301137940	Hudson town
07	5350	3301142260	Litchfield town
07	5350	3301146260	Mason town
07	5350	3301147540	Merrimack town
07	5350	3301148020	Milford town
07	5350	3301149140	Mont Vernon town
07	5350	3301150260	Nashua city
07	5350	3301151940	New Ipswich town
07	5350	3301185220	Wilton town
07	5400		New Bedford, MA PMSA
07	5400	25005	Bristol County (pt.)
07	5400	2500500520	Acushnet town
07	5400	2500516425	Dartmouth town
07	5400	2500522130	Fairhaven town
07	5400	2500525240	Freetown town
07	5400	2500545000	New Bedford city
07	5400	25023	Plymouth County (pt.)
07	5400	2502338540	Marion town
07	5400	2502339450	Mattapoisett town
07	5400	2502357600	Rochester town
07	6450		Portsmouth-Rochester, NH-ME PMSA
07	6450	23031	York County, ME (pt.)
07	6450	2303104720	Berwick town
07	6450	2303122955	Eliot town
07	6450	2303137270	Kittery town
07	6450	2303170030	South Berwick town
07	6450	2303187985	York town

07	6450 33015	Rockingham County, NH (pt.)
07	6450 3301507220	Brentwood town
07	6450 3301521380	East Kingston town
07	6450 3301524660	Epping town
07	6450 3301525380	Exeter town
07	6450 3301531700	Greenland town
07	6450 3301533060	Hampton town
07	6450 3301533460	Hampton Falls town
07	6450 3301539780	Kensington town
07	6450 3301550980	New Castle town
07	6450 3301551380	Newfields town
07	6450 3301551620	Newington town
07	6450 3301552340	Newmarket town
07	6450 3301554580	North Hampton town
07	6450 3301562900	Portsmouth city
07	6450 3301566180	Rye town
07	6450 3301574340	Stratham town
07	6450 33017	Strafford County, NH (pt.)
07	6450 3301703460	Barrington town
07	6450 3301718820	Dover city
07	6450 3301719700	Durham town
07	6450 3301726020	Farmington town
07	6450 3301741460	Lee town
07	6450 3301744820	Madbury town
07	6450 3301748660	Milton town
07	6450 3301765140	Rochester city
07	6450 3301765540	Rollinsford town
07	6450 3301769940	Somersworth city
07	9240	Worcester, MA-CT PMSA
07	9240 09015	Windham County, CT (pt.)
07	9240 0901575870	Thompson town
07	9240 25013	Hampden County, MA (pt.)
07	9240 2501330665	Holland town
07	9240 25027	Worcester County, MA (pt.)
07	9240 2502702760	Auburn town
07	9240 2502703740	Barre town
07	9240 2502707525	Boylston town
07	9240 2502709105	Brookfield town
07	9240 2502712715	Charlton town
07	9240 2502714395	Clinton town
07	9240 2502717300	Douglas town
07	9240 2502717685	Dudley town
07	9240 2502718560	East Brookfield town
07	9240 2502726430	Grafton town
07	9240 2502730560	Holden town
07	9240 2502734795	Leicester town

07	9240 2502741340	Millbury town
07	9240 2502746820	Northborough town
07	9240 2502746925	Northbridge town
07	9240 2502747135	North Brookfield town
07	9240 2502750670	Oakham town
07	9240 2502751825	Oxford town
07	9240 2502752420	Paxton town
07	9240 2502755395	Princeton town
07	9240 2502758825	Rutland town
07	9240 2502761800	Shrewsbury town
07	9240 2502763270	Southbridge town
07	9240 2502766105	Spencer town
07	9240 2502767385	Sterling town
07	9240 2502768155	Sturbridge town
07	9240 2502768610	Sutton town
07	9240 2502771620	Uxbridge town
07	9240 2502773895	Webster town
07	9240 2502775015	Westborough town
07	9240 2502775155	West Boylston town
07	9240 2502775400	West Brookfield town
07	9240 2502782000	Worcester city

1240	Brownsville-Harlingen-San Benito, TX MSA
1240 48061	Cameron County

1260	Bryan-College Station, TX MSA
1260 48041	Brazos County

1280	Buffalo-Niagara Falls, NY MSA
1280 36029	Erie County
1280 36063	Niagara County

1305	Burlington, VT MSA
1305 50007	Chittenden County (pt.)
1305 5000710675	Burlington city
1305 5000713300	Charlotte town
1305 5000714875	Colchester town
1305 5000724175	Essex town
1305 5000733475	Hinesburg town
1305 5000736700	Jericho town
1305 5000745250	Milton town
1305 5000759275	Richmond town
1305 5000762050	St. George town
1305 5000764300	Shelburne town
1305 5000766175	South Burlington city
1305 5000784475	Williston town

1305 5000785150	Winooski city
1305 50011	Franklin County (pt.)
1305 5001124925	Fairfax town
1305 5001127700	Georgia town
1305 5001161675	St. Albans city
1305 5001161750	St. Albans town
1305 5001171725	Swanton town
1305 50013	Grand Isle County (pt.)
1305 5001329275	Grand Isle town
1305 5001367000	South Hero town
1320	Canton-Massillon, OH MSA
1320 39019	Carroll County
1320 39151	Stark County
1350	Casper, WY MSA
1350 56025	Natrona County
1360	Cedar Rapids, IA MSA
1360 19113	Linn County
1400	Champaign-Urbana, IL MSA
1400 17019	Champaign County
1440	Charleston-North Charleston, SC MSA
1440 45015	Berkeley County
1440 45019	Charleston County
1440 45035	Dorchester County
1480	Charleston, WV MSA
1480 54039	Kanawha County
1480 54079	Putnam County
1520	Charlotte-Gastonia-Rock Hill, NC-SC MSA
1520 37025	Cabarrus County, NC
1520 37071	Gaston County, NC
1520 37109	Lincoln County, NC
1520 37119	Mecklenburg County, NC
1520 37159	Rowan County, NC
1520 37179	Union County, NC
1520 45091	York County, SC

	1540	Charlottesville, VA MSA
	1540 51003	Albemarle County
	1540 51065	Fluvanna County
	1540 51079	Greene County
	1540 51540	Charlottesville city
	1560	Chattanooga, TN-GA MSA
	1560 13047	Catoosa County, GA
	1560 13083	Dade County, GA
	1560 13295	Walker County, GA
	1560 47065	Hamilton County, TN
	1560 47115	Marion County, TN
	1580	Cheyenne, WY MSA
	1580 56021	Laramie County
14		Chicago-Gary-Kenosha, IL-IN-WI CMSA
14	1600	Chicago, IL PMSA
14	1600 17031	Cook County
14	1600 17037	DeKalb County
14	1600 17043	DuPage County
14	1600 17063	Grundy County
14	1600 17089	Kane County
14	1600 17093	Kendall County
14	1600 17097	Lake County
14	1600 17111	McHenry County
14	1600 17197	Will County
14	2960	Gary, IN PMSA
14	2960 18089	Lake County
14	2960 18127	Porter County
14	3740	Kankakee, IL PMSA
14	3740 17091	Kankakee County
14	3800	Kenosha, WI PMSA
14	3800 55059	Kenosha County
	1620	Chico-Paradise, CA MSA
	1620 06007	Butte County
21		Cincinnati-Hamilton, OH-KY-IN CMSA
21	1640	Cincinnati, OH-KY-IN PMSA
21	1640 18029	Dearborn County, IN
21	1640 18115	Ohio County, IN
21	1640 21015	Boone County, KY
21	1640 21037	Campbell County, KY
21	1640 21077	Gallatin County, KY
21	1640 21081	Grant County, KY

21	1640 21117	Kenton County, KY
21	1640 21191	Pendleton County, KY
21	1640 39015	Brown County, OH
21	1640 39025	Clermont County, OH
21	1640 39061	Hamilton County, OH
21	1640 39165	Warren County, OH
21	3200	Hamilton-Middletown, OH PMSA
21	3200 39017	Butler County
	1660	Clarksville-Hopkinsville, TN-KY MSA
	1660 21047	Christian County, KY
	1660 47125	Montgomery County, TN
28		Cleveland-Akron, OH CMSA
28	0080	Akron, OH PMSA
28	0080 39133	Portage County
28	0080 39153	Summit County
28	1680	Cleveland-Lorain-Elyria, OH PMSA
28	1680 39007	Ashtabula County
28	1680 39035	Cuyahoga County
28	1680 39055	Geauga County
28	1680 39085	Lake County
28	1680 39093	Lorain County
28	1680 39103	Medina County
	1720	Colorado Springs, CO MSA
	1720 08041	El Paso County
	1740	Columbia, MO MSA
	1740 29019	Boone County
	1760	Columbia, SC MSA
	1760 45063	Lexington County
	1760 45079	Richland County
	1800	Columbus, GA-AL MSA
	1800 01113	Russell County, AL
	1800 13053	Chattahoochee County, GA
	1800 13145	Harris County, GA
	1800 13215	Muscogee County, GA
	1840	Columbus, OH MSA
	1840 39041	Delaware County
	1840 39045	Fairfield County
	1840 39049	Franklin County
	1840 39089	Licking County

	1840 39097	Madison County
	1840 39129	Pickaway County
	1880	Corpus Christi, TX MSA
	1880 48355	Nueces County
	1880 48409	San Patricio County
	1900	Cumberland, MD-WV MSA
	1900 24001	Allegany County, MD
	1900 54057	Mineral County, WV
31		Dallas-Fort Worth, TX CMSA
31	1920	Dallas, TX PMSA
31	1920 48085	Collin County
31	1920 48113	Dallas County
31	1920 48121	Denton County
31	1920 48139	Ellis County
31	1920 48213	Henderson County
31	1920 48231	Hunt County
31	1920 48257	Kaufman County
31	1920 48397	Rockwall County
31	2800	Fort Worth-Arlington, TX PMSA
31	2800 48221	Hood County
31	2800 48251	Johnson County
31	2800 48367	Parker County
31	2800 48439	Tarrant County
	1950	Danville, VA MSA
	1950 51143	Pittsylvania County
	1950 51590	Danville city
	1960	Davenport-Moline-Rock Island, IA-IL MSA
	1960 17073	Henry County, IL
	1960 17161	Rock Island County, IL
	1960 19163	Scott County, IA
	2000	Dayton-Springfield, OH MSA
	2000 39023	Clark County
	2000 39057	Greene County
	2000 39109	Miami County
	2000 39113	Montgomery County
	2020	Daytona Beach, FL MSA
	2020 12035	Flagler County
	2020 12127	Volusia County

	2030	Decatur, AL MSA
	2030 01079	Lawrence County
	2030 01103	Morgan County
	2040	Decatur, IL MSA
	2040 17115	Macon County
34		Denver-Boulder-Greeley, CO CMSA
34	1125	Boulder-Longmont, CO PMSA
34	1125 08013	Boulder County
34	2080	Denver, CO PMSA
34	2080 08001	Adams County
34	2080 08005	Arapahoe County
34	2080 08031	Denver County
34	2080 08035	Douglas County
34	2080 08059	Jefferson County
34	3060	Greeley, CO PMSA
34	3060 08123	Weld County
	2120	Des Moines, IA MSA
	2120 19049	Dallas County
	2120 19153	Polk County
	2120 19181	Warren County
35		Detroit-Ann Arbor-Flint, MI CMSA
35	0440	Ann Arbor, MI PMSA
35	0440 26091	Lenawee County
35	0440 26093	Livingston County
35	0440 26161	Washtenaw County
35	2160	Detroit, MI PMSA
35	2160 26087	Lapeer County
35	2160 26099	Macomb County
35	2160 26115	Monroe County
35	2160 26125	Oakland County
35	2160 26147	St. Clair County
35	2160 26163	Wayne County
35	2640	Flint, MI PMSA
35	2640 26049	Genesee County
	2180	Dothan, AL MSA
	2180 01045	Dale County
	2180 01069	Houston County
	2190	Dover, DE MSA
	2190 10001	Kent County

2200	Dubuque, IA MSA
2200 19061	Dubuque County
2240	Duluth-Superior, MN-WI MSA
2240 27137	St. Louis County, MN
2240 55031	Douglas County, WI
2290	Eau Claire, WI MSA
2290 55017	Chippewa County
2290 55035	Eau Claire County
2320	El Paso, TX MSA
2320 48141	El Paso County
2330	Elkhart-Goshen, IN MSA
2330 18039	Elkhart County
2335	Elmira, NY MSA
2335 36015	Chemung County
2340	Enid, OK MSA
2340 40047	Garfield County
2360	Erie, PA MSA
2360 42049	Erie County
2400	Eugene-Springfield, OR MSA
2400 41039	Lane County
2440	Evansville-Henderson, IN-KY MSA
2440 18129	Posey County, IN
2440 18163	Vanderburgh County, IN
2440 18173	Warrick County, IN
2440 21101	Henderson County, KY
2520	Fargo-Moorhead, ND-MN MSA
2520 27027	Clay County, MN
2520 38017	Cass County, ND
2560	Fayetteville, NC MSA
2560 37051	Cumberland County
2580	Fayetteville-Springdale-Rogers, AR MSA
2580 05007	Benton County
2580 05143	Washington County

2650	Florence, AL MSA
2650 01033	Colbert County
2650 01077	Lauderdale County
2655	Florence, SC MSA
2655 45041	Florence County
2670	Fort Collins-Loveland, CO MSA
2670 08069	Larimer County
2700	Fort Myers-Cape Coral, FL MSA
2700 12071	Lee County
2710	Fort Pierce-Port St. Lucie, FL MSA
2710 12085	Martin County
2710 12111	St. Lucie County
2720	Fort Smith, AR-OK MSA
2720 05033	Crawford County, AR
2720 05131	Sebastian County, AR
2720 40135	Sequoyah County, OK
2750	Fort Walton Beach, FL MSA
2750 12091	Okaloosa County
2760	Fort Wayne, IN MSA
2760 18001	Adams County
2760 18003	Allen County
2760 18033	DeKalb County
2760 18069	Huntington County
2760 18179	Wells County
2760 18183	Whitley County
2840	Fresno, CA MSA
2840 06019	Fresno County
2840 06039	Madera County
2880	Gadsden, AL MSA
2880 01055	Etowah County
2900	Gainesville, FL MSA
2900 12001	Alachua County
2975	Glens Falls, NY MSA
2975 36113	Warren County
2975 36115	Washington County

2980	Goldsboro, NC MSA
2980 37191	Wayne County
2985	Grand Forks, ND-MN MSA
2985 27119	Polk County, MN
2985 38035	Grand Forks County, ND
3000	Grand Rapids-Muskegon-Holland, MI MSA
3000 26005	Allegan County
3000 26081	Kent County
3000 26121	Muskegon County
3000 26139	Ottawa County
3040	Great Falls, MT MSA
3040 30013	Cascade County
3080	Green Bay, WI MSA
3080 55009	Brown County
3120	Greensboro--Winston-Salem--High Point, NC MSA
3120 37001	Alamance County
3120 37057	Davidson County
3120 37059	Davie County
3120 37067	Forsyth County
3120 37081	Guilford County
3120 37151	Randolph County
3120 37169	Stokes County
3120 37197	Yadkin County
3150	Greenville, NC MSA
3150 37147	Pitt County
3160	Greenville-Spartanburg-Anderson, SC MSA
3160 45007	Anderson County
3160 45021	Cherokee County
3160 45045	Greenville County
3160 45077	Pickens County
3160 45083	Spartanburg County
3240	Harrisburg-Lebanon-Carlisle, PA MSA
3240 42041	Cumberland County
3240 42043	Dauphin County
3240 42075	Lebanon County
3240 42099	Perry County

3280	Hartford, CT MSA
3280 09003	Hartford County (pt.)
3280 0900302060	Avon town
3280 0900304300	Berlin town
3280 0900305910	Bloomfield town
3280 0900308420	Bristol city
3280 0900310100	Burlington town
3280 0900312270	Canton town
3280 0900322070	East Granby town
3280 0900322630	East Hartford town
3280 0900324800	East Windsor town
3280 0900325990	Enfield town
3280 0900327600	Farmington town
3280 0900331240	Glastonbury town
3280 0900332640	Granby town
3280 0900337000	Hartford city
3280 0900344700	Manchester town
3280 0900345820	Marlborough town
3280 0900350370	New Britain city
3280 0900352140	Newington town
3280 0900360120	Plainville town
3280 0900365370	Rocky Hill town
3280 0900368940	Simsbury town
3280 0900370550	Southington town
3280 0900371390	South Windsor town
3280 0900374540	Suffield town
3280 0900382590	West Hartford town
3280 0900384900	Wethersfield town
3280 0900387000	Windsor town
3280 0900387070	Windsor Locks town
3280 09005	Litchfield County (pt.)
3280 0900502760	Barkhamsted town
3280 0900537280	Harwinton town
3280 0900551350	New Hartford town
3280 0900560750	Plymouth town
3280 0900586440	Winchester town
3280 09007	Middlesex County (pt.)
3280 0900718080	Cromwell town
3280 0900720810	Durham town
3280 0900722280	East Haddam town
3280 0900722490	East Hampton town
3280 0900735230	Haddam town
3280 0900747080	Middlefield town
3280 0900747290	Middletown city
3280 0900761800	Portland town
3280 09011	New London County (pt.)

	3280 0901115910	Colchester town
	3280 0901142390	Lebanon town
	3280 09013	Tolland County (pt.)
	3280 0901301080	Andover town
	3280 0901306260	Bolton town
	3280 0901316400	Columbia town
	3280 0901317800	Coventry town
	3280 0901325360	Ellington town
	3280 0901337910	Hebron town
	3280 0901344910	Mansfield town
	3280 0901369220	Somers town
	3280 0901372090	Stafford town
	3280 0901376290	Tolland town
	3280 0901378250	Vernon town
	3280 0901385950	Willington town
	3280 09015	Windham County (pt.)
	3280 0901501430	Ashford town
	3280 0901513810	Chaplin town
	3280 0901586790	Windham town
	3290	Hickory-Morganton, NC MSA
	3290 37003	Alexander County
	3290 37023	Burke County
	3290 37027	Caldwell County
	3290 37035	Catawba County
	3320	Honolulu, HI MSA
	3320 15003	Honolulu County
	3350	Houma, LA MSA
	3350 22057	Lafourche Parish
	3350 22109	Terrebonne Parish
42		Houston-Galveston-Brazoria, TX CMSA
42	1145	Brazoria, TX PMSA
42	1145 48039	Brazoria County
42	2920	Galveston-Texas City, TX PMSA
42	2920 48167	Galveston County
42	3360	Houston, TX PMSA
42	3360 48071	Chambers County
42	3360 48157	Fort Bend County
42	3360 48201	Harris County
42	3360 48291	Liberty County
42	3360 48339	Montgomery County
42	3360 48473	Waller County

3400	Huntington-Ashland, WV-KY-OH MSA
3400 21019	Boyd County, KY
3400 21043	Carter County, KY
3400 21089	Greenup County, KY
3400 39087	Lawrence County, OH
3400 54011	Cabell County, WV
3400 54099	Wayne County, WV
3440	Huntsville, AL MSA
3440 01083	Limestone County
3440 01089	Madison County
3480	Indianapolis, IN MSA
3480 18011	Boone County
3480 18057	Hamilton County
3480 18059	Hancock County
3480 18063	Hendricks County
3480 18081	Johnson County
3480 18095	Madison County
3480 18097	Marion County
3480 18109	Morgan County
3480 18145	Shelby County
3500	Iowa City, IA MSA
3500 19103	Johnson County
3520	Jackson, MI MSA
3520 26075	Jackson County
3560	Jackson, MS MSA
3560 28049	Hinds County
3560 28089	Madison County
3560 28121	Rankin County
3580	Jackson, TN MSA
3580 47113	Madison County
3600	Jacksonville, FL MSA
3600 12019	Clay County
3600 12031	Duval County
3600 12089	Nassau County
3600 12109	St. Johns County
3605	Jacksonville, NC MSA
3605 37133	Onslow County

3610	Jamestown, NY MSA
3610 36013	Chautauqua County
3620	Janesville-Beloit, WI MSA
3620 55105	Rock County
3660	Johnson City-Kingsport-Bristol, TN-VA MSA
3660 47019	Carter County, TN
3660 47073	Hawkins County, TN
3660 47163	Sullivan County, TN
3660 47171	Unicoi County, TN
3660 47179	Washington County, TN
3660 51169	Scott County, VA
3660 51191	Washington County, VA
3660 51520	Bristol city, VA
3680	Johnstown, PA MSA
3680 42021	Cambria County
3680 42111	Somerset County
3710	Joplin, MO MSA
3710 29097	Jasper County
3710 29145	Newton County
3720	Kalamazoo-Battle Creek, MI MSA
3720 26025	Calhoun County
3720 26077	Kalamazoo County
3720 26159	Van Buren County
3760	Kansas City, MO-KS MSA
3760 20091	Johnson County, KS
3760 20103	Leavenworth County, KS
3760 20121	Miami County, KS
3760 20209	Wyandotte County, KS
3760 29037	Cass County, MO
3760 29047	Clay County, MO
3760 29049	Clinton County, MO
3760 29095	Jackson County, MO
3760 29107	Lafayette County, MO
3760 29165	Platte County, MO
3760 29177	Ray County, MO
3810	Killeen-Temple, TX MSA
3810 48027	Bell County
3810 48099	Coryell County

3840	Knoxville, TN MSA
3840 47001	Anderson County
3840 47009	Blount County
3840 47093	Knox County
3840 47105	Loudon County
3840 47155	Sevier County
3840 47173	Union County
3850	Kokomo, IN MSA
3850 18067	Howard County
3850 18159	Tipton County
3870	La Crosse, WI-MN MSA
3870 27055	Houston County, MN
3870 55063	La Crosse County, WI
3880	Lafayette, LA MSA
3880 22001	Acadia Parish
3880 22055	Lafayette Parish
3880 22097	St. Landry Parish
3880 22099	St. Martin Parish
3920	Lafayette, IN MSA
3920 18023	Clinton County
3920 18157	Tippecanoe County
3960	Lake Charles, LA MSA
3960 22019	Calcasieu Parish
3980	Lakeland-Winter Haven, FL MSA
3980 12105	Polk County
4000	Lancaster, PA MSA
4000 42071	Lancaster County
4040	Lansing-East Lansing, MI MSA
4040 26037	Clinton County
4040 26045	Eaton County
4040 26065	Ingham County
4080	Laredo, TX MSA
4080 48479	Webb County
4100	Las Cruces, NM MSA
4100 35013	Dona Ana County

4120	Las Vegas, NV-AZ MSA
4120 04015	Mohave County, AZ
4120 32003	Clark County, NV
4120 32023	Nye County, NV
4150	Lawrence, KS MSA
4150 20045	Douglas County
4200	Lawton, OK MSA
4200 40031	Comanche County
4240	Lewiston-Auburn, ME MSA
4240 23001	Androscoggin County (pt.)
4240 2300102060	Auburn city
4240 2300129255	Greene town
4240 2300138740	Lewiston city
4240 2300140035	Lisbon town
4240 2300144585	Mechanic Falls town
4240 2300160020	Poland town
4240 2300164570	Sabattus town
4240 2300177800	Turner town
4240 2300179585	Wales town
4280	Lexington, KY MSA
4280 21017	Bourbon County
4280 21049	Clark County
4280 21067	Fayette County
4280 21113	Jessamine County
4280 21151	Madison County
4280 21209	Scott County
4280 21239	Woodford County
4320	Lima, OH MSA
4320 39003	Allen County
4320 39011	Auglaize County
4360	Lincoln, NE MSA
4360 31109	Lancaster County
4400	Little Rock-North Little Rock, AR MSA
4400 05045	Faulkner County
4400 05085	Lonoke County
4400 05119	Pulaski County
4400 05125	Saline County

	4420	Longview-Marshall, TX MSA
	4420 48183	Gregg County
	4420 48203	Harrison County
	4420 48459	Upshur County
49		Los Angeles-Riverside-Orange County, CA CMSA
49	4480	Los Angeles-Long Beach, CA PMSA
49	4480 06037	Los Angeles County
49	5945	Orange County, CA PMSA
49	5945 06059	Orange County
49	6780	Riverside-San Bernardino, CA PMSA
49	6780 06065	Riverside County
49	6780 06071	San Bernardino County
49	8735	Ventura, CA PMSA
49	8735 06111	Ventura County
	4520	Louisville, KY-IN MSA
	4520 18019	Clark County, IN
	4520 18043	Floyd County, IN
	4520 18061	Harrison County, IN
	4520 18143	Scott County, IN
	4520 21029	Bullitt County, KY
	4520 21111	Jefferson County, KY
	4520 21185	Oldham County, KY
	4600	Lubbock, TX MSA
	4600 48303	Lubbock County
	4640	Lynchburg, VA MSA
	4640 51009	Amherst County
	4640 51019	Bedford County
	4640 51031	Campbell County
	4640 51515	Bedford city
	4640 51680	Lynchburg city
	4680	Macon, GA MSA
	4680 13021	Bibb County
	4680 13153	Houston County
	4680 13169	Jones County
	4680 13225	Peach County
	4680 13289	Twiggs County
	4720	Madison, WI MSA
	4720 55025	Dane County

	4800	Mansfield, OH MSA
	4800 39033	Crawford County
	4800 39139	Richland County
	4840	Mayaguez, PR MSA
	4840 72011	Anasco Municipio
	4840 72023	Cabo Rojo Municipio
	4840 72067	Hormigueros Municipio
	4840 72097	Mayaguez Municipio
	4840 72121	Sabana Grande Municipio
	4840 72125	San German Municipio
	4880	McAllen-Edinburg-Mission, TX MSA
	4880 48215	Hidalgo County
	4890	Medford-Ashland, OR MSA
	4890 41029	Jackson County
	4900	Melbourne-Titusville-Palm Bay, FL MSA
	4900 12009	Brevard County
	4920	Memphis, TN-AR-MS MSA
	4920 05035	Crittenden County, AR
	4920 28033	DeSoto County, MS
	4920 47047	Fayette County, TN
	4920 47157	Shelby County, TN
	4920 47167	Tipton County, TN
	4940	Merced, CA MSA
	4940 06047	Merced County
56		Miami-Fort Lauderdale, FL CMSA
56	2680	Fort Lauderdale, FL PMSA
56	2680 12011	Broward County
56	5000	Miami, FL PMSA
56	5000 12025	Dade County
63		Milwaukee-Racine, WI CMSA
63	5080	Milwaukee-Waukesha, WI PMSA
63	5080 55079	Milwaukee County
63	5080 55089	Ozaukee County
63	5080 55131	Washington County
63	5080 55133	Waukesha County
63	6600	Racine, WI PMSA
63	6600 55101	Racine County

5120	Minneapolis-St. Paul, MN-WI MSA
5120 27003	Anoka County, MN
5120 27019	Carver County, MN
5120 27025	Chisago County, MN
5120 27037	Dakota County, MN
5120 27053	Hennepin County, MN
5120 27059	Isanti County, MN
5120 27123	Ramsey County, MN
5120 27139	Scott County, MN
5120 27141	Sherburne County, MN
5120 27163	Washington County, MN
5120 27171	Wright County, MN
5120 55093	Pierce County, WI
5120 55109	St. Croix County, WI
5160	Mobile, AL MSA
5160 01003	Baldwin County
5160 01097	Mobile County
5170	Modesto, CA MSA
5170 06099	Stanislaus County
5200	Monroe, LA MSA
5200 22073	Ouachita Parish
5240	Montgomery, AL MSA
5240 01001	Autauga County
5240 01051	Elmore County
5240 01101	Montgomery County
5280	Muncie, IN MSA
5280 18035	Delaware County
5330	Myrtle Beach, SC MSA
5330 45051	Horry County
5345	Naples, FL MSA
5345 12021	Collier County
5360	Nashville, TN MSA
5360 47021	Cheatham County
5360 47037	Davidson County
5360 47043	Dickson County
5360 47147	Robertson County
5360 47149	Rutherford County
5360 47165	Sumner County

	5360 47187	Williamson County
	5360 47189	Wilson County
	5520	New London-Norwich, CT-RI MSA
	5520 09007	Middlesex County, CT (pt.)
	5520 0900757320	Old Saybrook town
	5520 09011	New London County, CT (pt.)
	5520 0901106820	Bozrah town
	5520 0901123400	East Lyme town
	5520 0901129910	Franklin town
	5520 0901133900	Griswold town
	5520 0901134250	Groton town
	5520 0901142600	Ledyard town
	5520 0901143230	Lisbon town
	5520 0901148900	Montville town
	5520 0901152280	New London city
	5520 0901155500	North Stonington town
	5520 0901156200	Norwich city
	5520 0901157040	Old Lyme town
	5520 0901162150	Preston town
	5520 0901166210	Salem town
	5520 0901171670	Sprague town
	5520 0901173770	Stonington town
	5520 0901180280	Waterford town
	5520 09015	Windham County, CT (pt.)
	5520 0901512130	Canterbury town
	5520 0901559980	Plainfield town
	5520 44009	Washington County, RI (pt.)
	5520 4400935380	Hopkinton town
	5520 4400977000	Westerly town
	5560	New Orleans, LA MSA
	5560 22051	Jefferson Parish
	5560 22071	Orleans Parish
	5560 22075	Plaquemines Parish
	5560 22087	St. Bernard Parish
	5560 22089	St. Charles Parish
	5560 22093	St. James Parish
	5560 22095	St. John the Baptist Parish
	5560 22103	St. Tammany Parish
70		New York-Northern New Jersey-Long Island, NY-NJ-CT-PA CMSA
70	0875	Bergen-Passaic, NJ PMSA
70	0875 34003	Bergen County
70	0875 34031	Passaic County

70	1160	Bridgeport, CT PMSA
70	1160 09001	Fairfield County (pt.)
70	1160 0900108000	Bridgeport city
70	1160 0900123890	Easton town
70	1160 0900126620	Fairfield town
70	1160 0900148620	Monroe town
70	1160 0900168100	Shelton city
70	1160 0900174190	Stratford town
70	1160 0900177200	Trumbull town
70	1160 09009	New Haven County (pt.)
70	1160 0900901150	Ansonia city
70	1160 0900903250	Beacon Falls town
70	1160 0900919480	Derby city
70	1160 0900947500	Milford city
70	1160 0900958300	Oxford town
70	1160 0900967610	Seymour town
70	1930	Danbury, CT PMSA
70	1930 09001	Fairfield County (pt.)
70	1930 0900104720	Bethel town
70	1930 0900108980	Brookfield town
70	1930 0900118430	Danbury city
70	1930 0900150860	New Fairfield town
70	1930 0900152980	Newtown town
70	1930 0900163480	Redding town
70	1930 0900163970	Ridgefield town
70	1930 0900168310	Sherman town
70	1930 09005	Litchfield County (pt.)
70	1930 0900508210	Bridgewater town
70	1930 0900552630	New Milford town
70	1930 0900565930	Roxbury town
70	1930 0900579720	Washington town
70	2281	Dutchess County, NY PMSA
70	2281 36027	Dutchess County
70	3640	Jersey City, NJ PMSA
70	3640 34017	Hudson County
70	5015	Middlesex-Somerset-Hunterdon, NJ PMSA
70	5015 34019	Hunterdon County
70	5015 34023	Middlesex County
70	5015 34035	Somerset County
70	5190	Monmouth-Ocean, NJ PMSA
70	5190 34025	Monmouth County
70	5190 34029	Ocean County
70	5380	Nassau-Suffolk, NY PMSA
70	5380 36059	Nassau County
70	5380 36103	Suffolk County
70	5480	New Haven-Meriden, CT PMSA

70	5480 09007	Middlesex County (pt.)
70	5480 0900715350	Clinton town
70	5480 0900740710	Killingworth town
70	5480 09009	New Haven County (pt.)
70	5480 0900904580	Bethany town
70	5480 0900907310	Branford town
70	5480 0900914160	Cheshire town
70	5480 0900922910	East Haven town
70	5480 0900934950	Guilford town
70	5480 0900935650	Hamden town
70	5480 0900944560	Madison town
70	5480 0900946450	Meriden city
70	5480 0900952000	New Haven city
70	5480 0900953890	North Branford town
70	5480 0900954870	North Haven town
70	5480 0900957600	Orange town
70	5480 0900978740	Wallingford town
70	5480 0900982800	West Haven city
70	5480 0900987700	Woodbridge town
70	5600	New York, NY PMSA
70	5600 36005	Bronx County
70	5600 36047	Kings County
70	5600 36061	New York County
70	5600 36079	Putnam County
70	5600 36081	Queens County
70	5600 36085	Richmond County
70	5600 36087	Rockland County
70	5600 36119	Westchester County
70	5640	Newark, NJ PMSA
70	5640 34013	Essex County
70	5640 34027	Morris County
70	5640 34037	Sussex County
70	5640 34039	Union County
70	5640 34041	Warren County
70	5660	Newburgh, NY-PA PMSA
70	5660 36071	Orange County, NY
70	5660 42103	Pike County, PA
70	8040	Stamford-Norwalk, CT PMSA
70	8040 09001	Fairfield County (pt.)
70	8040 0900118850	Darien town
70	8040 0900133620	Greenwich town
70	8040 0900150580	New Canaan town
70	8040 0900155990	Norwalk city
70	8040 0900173000	Stamford city
70	8040 0900183430	Weston town
70	8040 0900183500	Westport town

70	8040 0900186370	Wilton town
70	8480	Trenton, NJ PMSA
70	8480 34021	Mercer County
70	8880	Waterbury, CT PMSA
70	8880 09005	Litchfield County (pt.)
70	8880 0900504930	Bethlehem town
70	8880 0900575730	Thomaston town
70	8880 0900580490	Watertown town
70	8880 0900587910	Woodbury town
70	8880 09009	New Haven County (pt.)
70	8880 0900946940	Middlebury town
70	8880 0900949880	Naugatuck borough
70	8880 0900962290	Prospect town
70	8880 0900969640	Southbury town
70	8880 0900980000	Waterbury city
70	8880 0900987560	Wolcott town

5720	Norfolk-Virginia Beach-Newport News, VA-NC MSA
5720 37053	Currituck County, NC
5720 51073	Gloucester County, VA
5720 51093	Isle of Wight County, VA
5720 51095	James City County, VA
5720 51115	Mathews County, VA
5720 51199	York County, VA
5720 51550	Chesapeake city, VA
5720 51650	Hampton city, VA
5720 51700	Newport News city, VA
5720 51710	Norfolk city, VA
5720 51735	Poquoson city, VA
5720 51740	Portsmouth city, VA
5720 51800	Suffolk city, VA
5720 51810	Virginia Beach city, VA
5720 51830	Williamsburg city, VA

5790	Ocala, FL MSA
5790 12083	Marion County

5800	Odessa-Midland, TX MSA
5800 48135	Ector County
5800 48329	Midland County

5880	Oklahoma City, OK MSA
5880 40017	Canadian County
5880 40027	Cleveland County
5880 40083	Logan County
5880 40087	McClain County

	5880 40109	Oklahoma County
	5880 40125	Pottawatomie County
	5920	Omaha, NE-IA MSA
	5920 19155	Pottawattamie County, IA
	5920 31025	Cass County, NE
	5920 31055	Douglas County, NE
	5920 31153	Sarpy County, NE
	5920 31177	Washington County, NE
	5960	Orlando, FL MSA
	5960 12069	Lake County
	5960 12095	Orange County
	5960 12097	Osceola County
	5960 12117	Seminole County
	5990	Owensboro, KY MSA
	5990 21059	Daviess County
	6015	Panama City, FL MSA
	6015 12005	Bay County
	6020	Parkersburg-Marietta, WV-OH MSA
	6020 39167	Washington County, OH
	6020 54107	Wood County, WV
	6080	Pensacola, FL MSA
	6080 12033	Escambia County
	6080 12113	Santa Rosa County
	6120	Peoria-Pekin, IL MSA
	6120 17143	Peoria County
	6120 17179	Tazewell County
	6120 17203	Woodford County
77		Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD CMSA
77	0560	Atlantic-Cape May, NJ PMSA
77	0560 34001	Atlantic County
77	0560 34009	Cape May County
77	6160	Philadelphia, PA-NJ PMSA
77	6160 34005	Burlington County, NJ
77	6160 34007	Camden County, NJ
77	6160 34015	Gloucester County, NJ
77	6160 34033	Salem County, NJ
77	6160 42017	Bucks County, PA
77	6160 42029	Chester County, PA

77	6160 42045	Delaware County, PA
77	6160 42091	Montgomery County, PA
77	6160 42101	Philadelphia County, PA
77	8760	Vineland-Millville-Bridgeton, NJ PMSA
77	8760 34011	Cumberland County
77	9160	Wilmington-Newark, DE-MD PMSA
77	9160 10003	New Castle County, DE
77	9160 24015	Cecil County, MD
	6200	Phoenix-Mesa, AZ MSA
	6200 04013	Maricopa County
	6200 04021	Pinal County
	6240	Pine Bluff, AR MSA
	6240 05069	Jefferson County
	6280	Pittsburgh, PA MSA
	6280 42003	Allegheny County
	6280 42007	Beaver County
	6280 42019	Butler County
	6280 42051	Fayette County
	6280 42125	Washington County
	6280 42129	Westmoreland County
	6320	Pittsfield, MA MSA
	6320 25003	Berkshire County (pt.)
	6320 2500300555	Adams town
	6320 2500313345	Cheshire town
	6320 2500316180	Dalton town
	6320 2500330315	Hinsdale town
	6320 2500334340	Lanesborough town
	6320 2500334655	Lee town
	6320 2500334970	Lenox town
	6320 2500353960	Pittsfield city
	6320 2500356795	Richmond town
	6320 2500367595	Stockbridge town
	6360	Ponce, PR MSA
	6360 72059	Guayanilla Municipio
	6360 72075	Juana Diaz Municipio
	6360 72111	Penuelas Municipio
	6360 72113	Ponce Municipio
	6360 72149	Villalba Municipio
	6360 72153	Yauco Municipio

	6400	Portland, ME MSA
	6400 23005	Cumberland County (pt.)
	6400 2300510180	Cape Elizabeth town
	6400 2300511125	Casco town
	6400 2300515430	Cumberland town
	6400 2300524495	Falmouth town
	6400 2300526525	Freeport town
	6400 2300528240	Gorham town
	6400 2300528870	Gray town
	6400 2300553860	North Yarmouth town
	6400 2300560545	Portland city
	6400 2300561945	Raymond town
	6400 2300566145	Scarborough town
	6400 2300571990	South Portland city
	6400 2300573670	Standish town
	6400 2300582105	Westbrook city
	6400 2300586025	Windham town
	6400 2300587845	Yarmouth town
	6400 23031	York County (pt.)
	6400 2303109410	Buxton town
	6400 2303133665	Hollis town
	6400 2303139405	Limington town
	6400 2303155085	Old Orchard Beach town
79		Portland-Salem, OR-WA CMSA
79	6440	Portland-Vancouver, OR-WA PMSA
79	6440 41005	Clackamas County, OR
79	6440 41009	Columbia County, OR
79	6440 41051	Multnomah County, OR
79	6440 41067	Washington County, OR
79	6440 41071	Yamhill County, OR
79	6440 53011	Clark County, WA
79	7080	Salem, OR PMSA
79	7080 41047	Marion County
79	7080 41053	Polk County
	6480	Providence-Fall River-Warwick, RI-MA MSA
	6480 25005	Bristol County, MA (pt.)
	6480 2500502690	Attleboro city
	6480 2500523000	Fall River city
	6480 2500546575	North Attleborough town
	6480 2500556375	Rehoboth town
	6480 2500560645	Seekonk town
	6480 2500562430	Somerset town
	6480 2500568750	Swansea town
	6480 2500577570	Westport town

6480 44001	Bristol County, RI
6480 4400105140	Barrington town
6480 4400109280	Bristol town
6480 4400173760	Warren town
6480 44003	Kent County, RI
6480 4400318640	Coventry town
6480 4400322240	East Greenwich town
6480 4400374300	Warwick city
6480 4400377720	West Greenwich town
6480 4400378440	West Warwick town
6480 44005	Newport County, RI (pt.)
6480 4400536820	Jamestown town
6480 4400542400	Little Compton town
6480 4400570880	Tiverton town
6480 44007	Providence County, RI
6480 4400711800	Burrillville town
6480 4400714140	Central Falls city
6480 4400719180	Cranston city
6480 4400720080	Cumberland town
6480 4400722960	East Providence city
6480 4400727460	Foster town
6480 4400730340	Glocester town
6480 4400737720	Johnston town
6480 4400741500	Lincoln town
6480 4400751760	North Providence town
6480 4400752480	North Smithfield town
6480 4400754640	Pawtucket city
6480 4400759000	Providence city
6480 4400764220	Scituate town
6480 4400766200	Smithfield town
6480 4400780780	Woonsocket city
6480 44009	Washington County, RI (pt.)
6480 4400914500	Charlestown town
6480 4400925300	Exeter town
6480 4400948340	Narragansett town
6480 4400951580	North Kingstown town
6480 4400961160	Richmond town
6480 4400967460	South Kingstown town
6520	Provo-Orem, UT MSA
6520 49049	Utah County
6560	Pueblo, CO MSA
6560 08101	Pueblo County

6580	Punta Gorda, FL MSA
6580 12015	Charlotte County
6640	Raleigh-Durham-Chapel Hill, NC MSA
6640 37037	Chatham County
6640 37063	Durham County
6640 37069	Franklin County
6640 37101	Johnston County
6640 37135	Orange County
6640 37183	Wake County
6660	Rapid City, SD MSA
6660 46103	Pennington County
6680	Reading, PA MSA
6680 42011	Berks County
6690	Redding, CA MSA
6690 06089	Shasta County
6720	Reno, NV MSA
6720 32031	Washoe County
6740	Richland-Kennewick-Pasco, WA MSA
6740 53005	Benton County
6740 53021	Franklin County
6760	Richmond-Petersburg, VA MSA
6760 51036	Charles City County
6760 51041	Chesterfield County
6760 51053	Dinwiddie County
6760 51075	Goochland County
6760 51085	Hanover County
6760 51087	Henrico County
6760 51127	New Kent County
6760 51145	Powhatan County
6760 51149	Prince George County
6760 51570	Colonial Heights city
6760 51670	Hopewell city
6760 51730	Petersburg city
6760 51760	Richmond city

	6800	Roanoke, VA MSA
	6800 51023	Botetourt County
	6800 51161	Roanoke County
	6800 51770	Roanoke city
	6800 51775	Salem city
	6820	Rochester, MN MSA
	6820 27109	Olmsted County
	6840	Rochester, NY MSA
	6840 36037	Genesee County
	6840 36051	Livingston County
	6840 36055	Monroe County
	6840 36069	Ontario County
	6840 36073	Orleans County
	6840 36117	Wayne County
	6880	Rockford, IL MSA
	6880 17007	Boone County
	6880 17141	Ogle County
	6880 17201	Winnebago County
	6895	Rocky Mount, NC MSA
	6895 37065	Edgecombe County
	6895 37127	Nash County
82		Sacramento-Yolo, CA CMSA
82	6920	Sacramento, CA PMSA
82	6920 06017	El Dorado County
82	6920 06061	Placer County
82	6920 06067	Sacramento County
82	9270	Yolo, CA PMSA
82	9270 06113	Yolo County
	6960	Saginaw-Bay City-Midland, MI MSA
	6960 26017	Bay County
	6960 26111	Midland County
	6960 26145	Saginaw County
	6980	St. Cloud, MN MSA
	6980 27009	Benton County
	6980 27145	Stearns County
	7000	St. Joseph, MO MSA
	7000 29003	Andrew County
	7000 29021	Buchanan County

	7040	St. Louis, MO-IL MSA
	7040 17027	Clinton County, IL
	7040 17083	Jersey County, IL
	7040 17119	Madison County, IL
	7040 17133	Monroe County, IL
	7040 17163	St. Clair County, IL
	7040 29071	Franklin County, MO
	7040 29099	Jefferson County, MO
	7040 29113	Lincoln County, MO
	7040 29183	St. Charles County, MO
	7040 29189	St. Louis County, MO
	7040 29219	Warren County, MO
	7040 29510	St. Louis city, MO
	7120	Salinas, CA MSA
	7120 06053	Monterey County
	7160	Salt Lake City-Ogden, UT MSA
	7160 49011	Davis County
	7160 49035	Salt Lake County
	7160 49057	Weber County
	7200	San Angelo, TX MSA
	7200 48451	Tom Green County
	7240	San Antonio, TX MSA
	7240 48029	Bexar County
	7240 48091	Comal County
	7240 48187	Guadalupe County
	7240 48493	Wilson County
	7320	San Diego, CA MSA
	7320 06073	San Diego County
84		San Francisco-Oakland-San Jose, CA CMSA
84	5775	Oakland, CA PMSA
84	5775 06001	Alameda County
84	5775 06013	Contra Costa County
84	7360	San Francisco, CA PMSA
84	7360 06041	Marin County
84	7360 06075	San Francisco County
84	7360 06081	San Mateo County
84	7400	San Jose, CA PMSA
84	7400 06085	Santa Clara County
84	7485	Santa Cruz-Watsonville, CA PMSA
84	7485 06087	Santa Cruz County

84	7500	Santa Rosa, CA PMSA
84	7500 06097	Sonoma County
84	8720	Vallejo-Fairfield-Napa, CA PMSA
84	8720 06055	Napa County
84	8720 06095	Solano County

87	San Juan-Caguas-Arecibo, PR CMSA
87 0470	Arecibo, PR PMSA
87 0470 72013	Arecibo Municipio
87 0470 72027	Camuy Municipio
87 0470 72065	Hatillo Municipio
87 1310	Caguas, PR PMSA
87 1310 72025	Caguas Municipio
87 1310 72035	Cayey Municipio
87 1310 72041	Cidra Municipio
87 1310 72063	Gurabo Municipio
87 1310 72129	San Lorenzo Municipio
87 7440	San Juan-Bayamon, PR PMSA
87 7440 72007	Aguas Buenas Municipio
87 7440 72017	Barceloneta Municipio
87 7440 72021	Bayamon Municipio
87 7440 72029	Canovanas Municipio
87 7440 72031	Carolina Municipio
87 7440 72033	Catano Municipio
87 7440 72037	Ceiba Municipio
87 7440 72045	Comerio Municipio
87 7440 72047	Corozal Municipio
87 7440 72051	Dorado Municipio
87 7440 72053	Fajardo Municipio
87 7440 72054	Florida Municipio
87 7440 72061	Guaynabo Municipio
87 7440 72069	Humacao Municipio
87 7440 72077	Juncos Municipio
87 7440 72085	Las Piedras Municipio
87 7440 72087	Loiza Municipio
87 7440 72089	Luquillo Municipio
87 7440 72091	Manati Municipio
87 7440 72101	Morovis Municipio
87 7440 72103	Naguabo Municipio
87 7440 72105	Naranjito Municipio
87 7440 72119	Rio Grande Municipio
87 7440 72127	San Juan Municipio
87 7440 72135	Toa Alta Municipio
87 7440 72137	Toa Baja Municipio
87 7440 72139	Trujillo Alto Municipio
87 7440 72143	Vega Alta Municipio

	87 7440 72145	Vega Baja Municipio
	87 7440 72151	Yabucoa Municipio
	7460	San Luis Obispo-Atascadero-Paso Robles, CA MSA
	7460 06079	San Luis Obispo County
	7480	Santa Barbara-Santa Maria-Lompoc, CA MSA
	7480 06083	Santa Barbara County
	7490	Santa Fe, NM MSA
	7490 35028	Los Alamos County
	7490 35049	Santa Fe County
	7510	Sarasota-Bradenton, FL MSA
	7510 12081	Manatee County
	7510 12115	Sarasota County
	7520	Savannah, GA MSA
	7520 13029	Bryan County
	7520 13051	Chatham County
	7520 13103	Effingham County
	7560	Scranton--Wilkes-Barre--Hazleton, PA MSA
	7560 42037	Columbia County
	7560 42069	Lackawanna County
	7560 42079	Luzerne County
	7560 42131	Wyoming County
91		Seattle-Tacoma-Bremerton, WA CMSA
91	1150	Bremerton, WA PMSA
91	1150 53035	Kitsap County
91	5910	Olympia, WA PMSA
91	5910 53067	Thurston County
91	7600	Seattle-Bellevue-Everett, WA PMSA
91	7600 53029	Island County
91	7600 53033	King County
91	7600 53061	Snohomish County
91	8200	Tacoma, WA PMSA
91	8200 53053	Pierce County
	7610	Sharon, PA MSA
	7610 42085	Mercer County
	7620	Sheboygan, WI MSA
	7620 55117	Sheboygan County

7640	Sherman-Denison, TX MSA
7640 48181	Grayson County
7680	Shreveport-Bossier City, LA MSA
7680 22015	Bossier Parish
7680 22017	Caddo Parish
7680 22119	Webster Parish
7720	Sioux City, IA-NE MSA
7720 19193	Woodbury County, IA
7720 31043	Dakota County, NE
7760	Sioux Falls, SD MSA
7760 46083	Lincoln County
7760 46099	Minnehaha County
7800	South Bend, IN MSA
7800 18141	St. Joseph County
7840	Spokane, WA MSA
7840 53063	Spokane County
7880	Springfield, IL MSA
7880 17129	Menard County
7880 17167	Sangamon County
7920	Springfield, MO MSA
7920 29043	Christian County
7920 29077	Greene County
7920 29225	Webster County
8000	Springfield, MA MSA
8000 25011	Franklin County (pt.)
8000 2501168400	Sunderland town
8000 25013	Hampden County (pt.)
8000 2501300800	Agawam town
8000 2501313660	Chicopee city
8000 2501319645	East Longmeadow town
8000 2501328075	Hampden town
8000 2501330840	Holyoke city
8000 2501336300	Longmeadow town
8000 2501337175	Ludlow town
8000 2501342145	Monson town
8000 2501342530	Montgomery town
8000 2501352105	Palmer town
8000 2501358650	Russell town

8000 2501365825	Southwick town
8000 2501367000	Springfield city
8000 2501376030	Westfield city
8000 2501377850	West Springfield town
8000 2501379740	Wilbraham town
8000 25015	Hampshire County (pt.)
8000 2501501325	Amherst town
8000 2501504825	Belchertown town
8000 2501519330	Easthampton town
8000 2501526535	Granby town
8000 2501527690	Hadley town
8000 2501529265	Hatfield town
8000 2501531785	Huntington town
8000 2501546330	Northampton city
8000 2501562745	Southampton town
8000 2501564145	South Hadley town
8000 2501572880	Ware town
8000 2501579915	Williamsburg town
8050	State College, PA MSA
8050 42027	Centre County
8080	Steubenville-Weirton, OH-WV MSA
8080 39081	Jefferson County, OH
8080 54009	Brooke County, WV
8080 54029	Hancock County, WV
8120	Stockton-Lodi, CA MSA
8120 06077	San Joaquin County
8140	Sumter, SC MSA
8140 45085	Sumter County
8160	Syracuse, NY MSA
8160 36011	Cayuga County
8160 36053	Madison County
8160 36067	Onondaga County
8160 36075	Oswego County
8240	Tallahassee, FL MSA
8240 12039	Gadsden County
8240 12073	Leon County
8280	Tampa-St. Petersburg-Clearwater, FL MSA
8280 12053	Hernando County
8280 12057	Hillsborough County

8280 12101	Pasco County
8280 12103	Pinellas County
8320	Terre Haute, IN MSA
8320 18021	Clay County
8320 18165	Vermillion County
8320 18167	Vigo County
8360	Texarkana, TX-Texarkana, AR MSA
8360 05091	Miller County, AR
8360 48037	Bowie County, TX
8400	Toledo, OH MSA
8400 39051	Fulton County
8400 39095	Lucas County
8400 39173	Wood County
8440	Topeka, KS MSA
8440 20177	Shawnee County
8520	Tucson, AZ MSA
8520 04019	Pima County
8560	Tulsa, OK MSA
8560 40037	Creek County
8560 40113	Osage County
8560 40131	Rogers County
8560 40143	Tulsa County
8560 40145	Wagoner County
8600	Tuscaloosa, AL MSA
8600 01125	Tuscaloosa County
8640	Tyler, TX MSA
8640 48423	Smith County
8680	Utica-Rome, NY MSA
8680 36043	Herkimer County
8680 36065	Oneida County
8750	Victoria, TX MSA
8750 48469	Victoria County
8780	Visalia-Tulare-Porterville, CA MSA
8780 06107	Tulare County

	8800	Waco, TX MSA
	8800 48309	McLennan County
97		Washington-Baltimore, DC-MD-VA-WV CMSA
97	0720	Baltimore, MD PMSA
97	0720 24003	Anne Arundel County
97	0720 24005	Baltimore County
97	0720 24013	Carroll County
97	0720 24025	Harford County
97	0720 24027	Howard County
97	0720 24035	Queen Anne's County
97	0720 24510	Baltimore city
97	3180	Hagerstown, MD PMSA
97	3180 24043	Washington County
97	8840	Washington, DC-MD-VA-WV PMSA
97	8840 11001	District of Columbia
97	8840 24009	Calvert County, MD
97	8840 24017	Charles County, MD
97	8840 24021	Frederick County, MD
97	8840 24031	Montgomery County, MD
97	8840 24033	Prince George's County, MD
97	8840 51013	Arlington County, VA
97	8840 51043	Clarke County, VA
97	8840 51047	Culpeper County, VA
97	8840 51059	Fairfax County, VA
97	8840 51061	Fauquier County, VA
97	8840 51099	King George County, VA
97	8840 51107	Loudoun County, VA
97	8840 51153	Prince William County, VA
97	8840 51177	Spotsylvania County, VA
97	8840 51179	Stafford County, VA
97	8840 51187	Warren County, VA
97	8840 51510	Alexandria city, VA
97	8840 51600	Fairfax city, VA
97	8840 51610	Falls Church city, VA
97	8840 51630	Fredericksburg city, VA
97	8840 51683	Manassas city, VA
97	8840 51685	Manassas Park city, VA
97	8840 54003	Berkeley County, WV
97	8840 54037	Jefferson County, WV
	8920	Waterloo-Cedar Falls, IA MSA
	8920 19013	Black Hawk County
	8940	Wausau, WI MSA
	8940 55073	Marathon County

8960	West Palm Beach-Boca Raton, FL MSA
8960 12099	Palm Beach County
9000	Wheeling, WV-OH MSA
9000 39013	Belmont County, OH
9000 54051	Marshall County, WV
9000 54069	Ohio County, WV
9040	Wichita, KS MSA
9040 20015	Butler County
9040 20079	Harvey County
9040 20173	Sedgwick County
9080	Wichita Falls, TX MSA
9080 48009	Archer County
9080 48485	Wichita County
9140	Williamsport, PA MSA
9140 42081	Lycoming County
9200	Wilmington, NC MSA
9200 37019	Brunswick County
9200 37129	New Hanover County
9260	Yakima, WA MSA
9260 53077	Yakima County
9280	York, PA MSA
9280 42133	York County
9320	Youngstown-Warren, OH MSA
9320 39029	Columbiana County
9320 39099	Mahoning County
9320 39155	Trumbull County
9340	Yuba City, CA MSA
9340 06101	Sutter County
9340 06115	Yuba County
9360	Yuma, AZ MSA
9360 04027	Yuma County

NEW ENGLAND COUNTY METROPOLITAN AREAS AND COMPONENTS, 1993, WITH FIPS CODES

(Metropolitan areas defined by Office of Management and Budget, 6/30/93)

Source: US Census Bureau
Release date: Sept. 1996

GUIDE TO FIPS CODES:

NECMA= New England County Metropolitan Statistical Area
SS= State
CCC= County

NECMA SSCCC New England County Metropolitan Area and Components

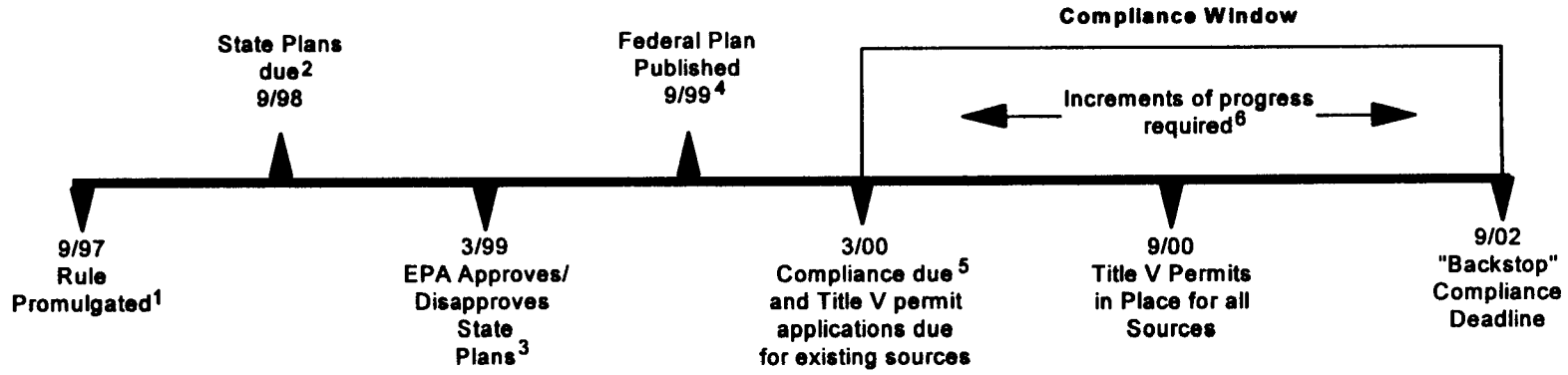
0733	Bangor, ME NECMA
0733 23019	Penobscot County
0743	Barnstable-Yarmouth, MA NECMA
0743 25001	Barnstable County
1123	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH NECMA
1123 25005	Bristol County, MA
1123 25009	Essex County, MA
1123 25017	Middlesex County, MA
1123 25021	Norfolk County, MA
1123 25023	Plymouth County, MA
1123 25025	Suffolk County, MA
1123 25027	Worcester County, MA
1123 33011	Hillsborough County, NH
1123 33015	Rockingham County, NH
1123 33017	Strafford County, NH
1303	Burlington, VT NECMA
1303 50007	Chittenden County
1303 50011	Franklin County
1303 50013	Grand Isle County
3283	Hartford, CT NECMA
3283 09003	Hartford County
3283 09007	Middlesex County
3283 09013	Tolland County
4243	Lewiston-Auburn, ME NECMA
4243 23001	Androscoggin County

5483	New Haven-Bridgeport-Stamford-Waterbury-Danbury, CT NECMA
5483 09001	Fairfield County
5483 09009	New Haven County
5523	New London-Norwich, CT NECMA
5523 09011	New London County
6323	Pittsfield, MA NECMA
6323 25003	Berkshire County
6403	Portland, ME NECMA
6403 23005	Cumberland County
6483	Providence-Warwick-Pawtucket, RI NECMA
6483 44001	Bristol County
6483 44003	Kent County
6483 44007	Providence County
6483 44009	Washington County
8003	Springfield, MA NECMA
8003 25013	Hampden County
8003 25015	Hampshire County

Appendix E

HMIWI Implementation Timeline

HMIWI Implementation Timeline



[1] 62 FR 48347.

[2] Sec. 129(b)(2) requires State Plans be submitted not later than one year after promulgation of the rule.

[3] Sec. 129(b)(2) requires EPA to approve or disapprove a State Plan within 180 days of submission.

[4] Sec.129(b)(3) requires EPA to develop a Federal Plan within 2 years of rule promulgation (if necessary).

[5] Due 12 months after EPA approval of State Plan under sec. 60.39e of subpart Ce unless the State has granted an extension to a source (up to 3 years after approval of State Plan but not less than 5 years after promulgation).

[6] Sec. 60.24(e)(1) of subpart B requires legally enforceable increments of progress for any compliance schedule extending beyond 12 months from State Plan approval. Sec. 60.39e(c)(1)-(9) of subpart Ce and Sec. 60.21 of subpart B list suggested increments of progress and Sec. 60.21 of Subpart B contains five required increments of progress.

[7] Both new and existing sources have 36 months from promulgation to get a complete permit application into the permitting agency.

Notes

Subpart B------ General requirements for all 111(d) State Plans. Amended 12/19/95 to allow subsequent subparts (Ce and Ec) to supersede subpart B.

Subpart Ce-----EG for HMIWI's.

Subpart Ec-----NSPS for HMIWI's.

Subpart Cb-----EG for MWC's.

Subpart Eb-----NSPS for MWC's.

Appendix F

EPA Regional and State/Local Agency Contacts

F1 EPA Regional HMIWI Rule Contacts
F2 State Contacts

Appendix F1

EPA Regional HMIWI Rule Contacts

EPA REGIONAL HMIWI RULE CONTACTS

Regional Contact	Phone #	Fax #
Susan Lancey U.S. EPA Region I (Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont) John F. Kennedy Federal Building Boston, MA 02203-0001	(617) 565-3587	(617) 565-4940
Christine DeRosa Ted Gardella U.S. EPA Region II (New York, New Jersey, Puerto Rico, Virgin Islands) 290 Broadway New York, NY 10007-1866	(212) 637-4022 (212) 637-3892	(212) 637-3901
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Ryan Bahr (Indiana) Charles Hatten (Wisconsin) Mark Palermo (Illinois) Scott Hamilton (Ohio) Rick Tonielli (Michigan) Doug Aburano (Minnesota) U.S. EPA/AR-18J Region V (Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio) 77 W. Jackson Blvd. Chicago, IL 60604	(312) 353-4366 (312) 886-6031 (312) 886-6082 (312) 353-4775 (312) 886-6068 (312) 353-6960	(312) 886-0617

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Wayne Kaiser U.S. EPA Region VII (Iowa, Kansas, Missouri, Nebraska) 726 Minnesota Avenue Kansas City, KS 66101	(913) 551-7603	(913) 551-7065
Meredith Bond U.S. EPA Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming) 999-18th Street, Suite 500 Denver, CO 80202-2466 E-mail: bond.meredith@epamail.epa.gov	(303) 312-6438	(303) 312-6064
Patrica Bowlin U.S. EPA Region IX (Arizona, California, Hawaii, Nevada) 75 Hawthorne Street San Francisco, CA 94105	(415) 744-1188	(415) 744-1076
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Appendix F2

State Contacts

STATE CONTACTS

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City of Huntsville Department of Natural Resources and Environmental Management 305 Church Street Huntsville, AL 35801 Contact: Danny Shea	(205) 535-4206	(205) 535-4212
Bureau of Environmental Health Jefferson County Department of Health P.O. Box 2648 1400 Sixth Avenue South Birmingham, AL 35202-2648 Contact: Henry Burnett	(205) 930-1207	(205) 930-3019
Alaska Department of Environmental Conservation Air Compliance Assurance 410 Willoughby Avenue Suite 105 Juneau, AK 99801-1795 Contact: Bill Walker	(907) 465-5100	(907) 465-5129
Arizona Department of Environmental Quality Air Quality Division 3033 North Central Avenue 5th Floor Phoenix, AZ 85012 Director: Nancy C. Wrona	(602) 207-2308	(602) 207-2366
California Air Resources Board P.O. Box 2815 Sacramento, CA 95812 Executive Officer: James D. Boyd	(916) 445-4383	(916) 322-6003

STATE CONTACTS (Continued)

State Contact	Phone #	Fax #
Colorado Department of Public Health and Environment Air Pollution Control Division 4300 Cherry Creek Drive South Denver, CO 80222-1530 Contact: Kristen King E-mail: kristen.king@state.co.us	(303) 692-3100	(303) 782-5493 (303) 782-0278
Connecticut Department of Environmental Protection Bureau of Air Management 79 Elm Street, 5th floor Hartford, CT 06106-5127 Contact: Ellen Morris E-mail: ellen.morris@po.state.ct.us	(860) 424-3412	(860) 424-4063
Delaware Division of Air & Waste Management 715 Grantham Lane New Castle, DE 19702 Contact: Robert Taggert	(302) 739-4791	(302) 739-3106
District of Columbia Department of Consumer and Regulatory Affairs Environmental Regulation Administration Air Resources Management Division 2100 MLK Avenue, SE, Suite 203 Washington, DC 20020-5732 Contact: William Gillespie	(202) 645-6093	(202) 645-6102
Florida Department of Environmental Protection Air Resources Management Division Twin Towers Office Building 2600 Blair Stone Road Tallahassee, FL 32399-2400 Contact: Michael Hewett	(850) 488-0114	(850) 922-6979

STATE CONTACTS (Continued)

State Contact	Phone #	Fax #
Georgia Department of Natural Resources Environmental Protection Division Air Protection Branch 4244 International Parkway Suite 120 Atlanta, GA 30354 Contact: Frank Nitterhand	(404) 362-4848	(404) 363-7100
Hawaii Department of Health Clean Air Branch P.O. Box 3378 Honolulu, HI 96801 Chief: Wilfred Nagamine	(808) 586-4200	(808) 586-4359
Idaho Division of Environmental Quality 1410 North Hilton Boise, ID 83706-1290 Contact: Tim Teater E-mail: TeaterT{DEQ/POENV/TeaterT}@dhw.state.id.us	(208) 373-0457	(208) 373-0417
Illinois Environmental Protection Agency Division of Air Pollution Control P.O. Box 19276 Springfield, IL 62794-9276 Contacts: Henry Naour and Dennis Lawler E-mail: epa2211@wpogw.admop.epa.state.il.us and epa2279@wpogw.admop.epa.state.il.us	(217) 785-1716 (217) 785-1892	(217) 782-2465
Indiana Department of Environmental Management Office of Air Management 100 North Senate Avenue P.O. Box 6015 Indianapolis, IN 46206-6015 Contacts: Susan Bem and Mike Brooks E-mail: sbem@dem.state.in.us	(317) 233-5697	(317) 233-5967

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Iowa Department of Natural Resources Air Quality Bureau Henry Wallace Building 900 East Grand Des Moines, IA 50319 Chief: Pete Hamlin	(515) 281-8852	(515) 281-8895
Kansas Department of Health and Environment Bureau of Air and Radiation Forbes Field, Building 740 Topeka, KS 66620 Director: John C. Irwin	(913) 296-1593	(913) 296-1545
Kentucky Natural Resources & Environmental Protection Cabinet Division for Air Quality 803 Schenkel Lane Frankfort, KY 40601 Contact: Ken Hines	(502) 573-3787	(502) 573-3787
Air Pollution Control District of Jefferson County 850 Barrett Avenue, Suite 200 Louisville, KY 40204-1745 Contact: Dick Everhart	(502) 574-6000	(502) 574-5306
Louisiana Department of Environmental Quality Office of Air Quality and Radiation Protection P.O. Box 82135 Baton Rouge, LA 70884-2135 Assistant Secretary: Gustave Von Bodungen	(504) 765-0219	(504) 765-0222
Maine Department of Environmental Protection Bureau of Air Quality 17 State House Station Augusta, ME 04333-0017 Contact: Stephanie Carver E-mail: stephanie.carver@state.me.us	(207) 287-2437	(207) 287-7641

STATE CONTACTS (Continued)

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Maryland Department of the Environment Air and Radiation Management Administration Regulation Development Division 2500 Broening Highway Baltimore, MD 21224 Contact: Carl York E-mail: mdearma@charm.net	(410) 631-3255	(410) 631-3391
Massachusetts Department of Environmental Protection Division of Air Quality Control One Winter Street, 7th Floor Boston, MA 02108 Contact: Mike Castro E-mail: mcastro@state.ma.us	(617) 556-1053	(617) 292-5778
Michigan Department of Environmental Quality Air Quality Division P.O. Box 30260 Lansing, MI 48909 Contact: Amy Vankolken E-mail: vankolka@state.mi.us	(517) 373-7023	(517) 335-6993
Minnesota Minnesota Pollution Control Agency Division of Air Quality 520 Lafayette Road St. Paul, MN 55155 Contact: Anne Jackson E-mail: anne.jackson@pca.state.mn.us	(612) 297-7949	(612) 297-8701
Mississippi Department of Environmental Quality Air Division P.O. Box 10385 Jackson, MS 39289-0385 Contact: Connie Simmons	(601) 961-5165	(601) 961-5742

STATE CONTACTS (Continued)

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Montana Department of Environmental Quality Medcalf Building 1520 East Sixth Avenue P.O. Box 200901 Helena, MT 59620-0901 Contacts: Mark Lambrecht and David Klemp E-mail: malambrecht@mt.gov and dklemp@mt.gov	(800) 433-8773 (406) 444-0286	(406) 444-5275
Nebraska Department of Environmental Quality Air and Waste Management Division 1200 N Street, Suite 400 Box 98922 Lincoln, NE 68509-8922 Assistant Director: Joe Francis	(402) 471-0001	(402) 471-2909
Nevada Division of Environmental Protection Bureau of Air Quality 333 West Nye Lane Carson City, NV 89710 Bureau Chief: Jolaine Johnson	(702) 687-4670	(702) 687-6396
New Hampshire Department of Environmental Services Air Resources Division 64 North Main Street P.O. Box 2033 Concord, NH 03302-2033 Contact: Craig Wright E-mail: permit@des.state.nh.us	(603) 271-6791	(603) 271-1381

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New Mexico Environment Department Environmental Protection Division Air Quality Bureau Harold Runnels Building Room S2100 P.O. Box 26110 Santa Fe, NM 87502 Chief: Cecilia Williams	(505) 827-0031	(505) 827-0045
New York Department of Environmental Conservation Division of Air Resources 50 Wolf Road (Room 108) Albany, NY 12233-3254 Contact: Ajay Shroff	(518) 457-7688	(518) 485-8427

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Forsyth County Environmental Affairs Department 537 North Spruce Street Winston-Salem, NC 27101 Contact: Mary Schwenn	(910) 727-8060	(910) 727-2777
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Western NC Regional Air Pollution Control Agency 49 Mt. Carmel Road, Asheville, NC 28806 Contact: Jim Cody	(704) 255-5655	(704) 255-5226
North Dakota Department of Health and Consolidated Laboratories Division of Environmental Engineering P.O. Box 5520 Bismarck, ND 58506-5520 Contact: Tom Bachman E-mail: ccmail.tbachman@ranch.state.nd.us	(701) 328-5188	(701) 328-5200
Ohio Environmental Protection Agency Division of Air Pollution Control 1800 WaterMark Dr. P.O. Box 1049 Columbus, OH 43216-1049 Contact: Dana Thompson E-mail: dana.thompson@epa.state.oh.us	(614) 644-3698	(614) 644-3681

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Oregon Department of Environmental Quality Air Quality Division 811 Southwest Sixth Avenue Portland, OR 97204-1390 Contact: Kathleen Craig E-mail: kathleen.craig@state.or.us	(503) 229-6833	(503) 229-5675
Pennsylvania Department of Environmental Protection Commonwealth of Pennsylvania Administration Rachael Carson Office Building, 12 Fir. 400 Market Street Harrisburg, PA 17105-8468 Contact: Krish Ramanmurthy E-mail: ramamurthy.krishnan@al.dep.state.pa.us Air Management Services Department of Public Health Spelman Building 321 University Avenue Philadelphia, PA 19104 Contact: Norm Glazer Allegheny Count Health Department Bureau of Environmental Quality 310 39th Street Pittsburgh, PA 15201-1891 Contact: Roger Westman	(717) 787-9702	(717) 772-2303
Puerto Rico Environmental Quality Board Air Programs Area P.O. Box 11488 Santurce, Puerto Rico 00910 Director: Elizabeth Munoz	(787) 767-8025	(787) 756-5906

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South Carolina Department of Health and Environmental Control Bureau of Air Quality Control 2600 Bull Street Columbia, SC 29201 Contact: Renee Shealy	(803) 734-6471	(803) 734-4556
South Dakota Department of Natural Resources Division of Environmental Regulation Joe Foss Building 523 East Capitol Avenue Pierre, SD 57501-3181 Contact: Jackie Flowers E-mail: JACKIEF@denr.state.sd.us	(605) 773-3351	(605) 773-5286

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Chattanooga-Hamilton County Air Pollution Control Bureau 3511 Rossville Boulevard Chattanooga, TN 37407 Contact: Errol Reksten	(423) 867-4321	(423) 867-4348
Knox County Department of Air Pollution Control 400 Main Street City/County Building, Room 437 Knoxville, TN 37902-2405 Contact: Will Schod	(423) 215-2488	(423) 215-4242
Pollution Control Section Memphis-Shelby County Health Department 814 Jefferson Avenue, Room 437 Memphis, TN 38105 Contact: Bob Rogers	(901) 576-7728	(901) 576-7832
Air Pollution Control Division Nashville-Davidson County 311 23rd Avenue, North Nashville, TN 37203 Contact: Rob Raney	(615) 340-5653	(615) 340-2142
Texas Texas Natural Resource Conservation Commission Office of Policy and Regulatory Development P.O. Box 13087 Austin, TX 78711-3087 Deputy Director: Beverly Hartsock	(512) 239-5818	(512) 239-4808

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Vermont Department of Environmental Conservation Air Pollution Control Division 103 South Main Street Building 3 South Waterbury, VT 05671-0402 Contact: Brian Fitzgerald E-mail: Brianf@qtm.anr.state.vt.us	(802) 241-3848	(802) 241-2590
Virginia Department of Environmental Air Quality Commonwealth of Virginia P.O. Box 10009 Richmond, VA 23240-0009 Contact: Karen Sabasteanski kgsabastea@deq.state.va.us	(804) 698-4311	(804) 698-4510
Virgin Islands Department of Environmental Protection Department of Planning and Natural Resources Wheatley Center II St. Thomas, USVI 00802 Contact: Winston Williams	(809) 777-4577	(809) 774-5416
Washington Department of Ecology Engineering and Technical Services P.O. Box 47600 Olympia, WA 98504-7600 Contact: Dan Clarkson E-mail: DACL461@ecy.wa.gov	(360) 407-6867	(360) 407-6802

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West Virginia Division of Environmental Protection Office of Air Quality 1558 Washington Street, East Charleston, WV 25311-2599 Contact: John Johnson	(304) 558-3286	(304) 558-3287
Wisconsin Department of Natural Resources P.O. Box 7921 101 South Webster Street Madison, WI 53707-7921 Contacts: Bill Baumann and Roger Fritz fritzr@dnr.state.wi.us	(608) 266-1201 (608) 266-7542	(608) 267-0560
Wyoming Department of Environmental Quality Air Quality Division 122 West 25th Street-Herschler Building Cheyenne, WY 82002 Contacts: Bernie Dailey, Charles Raffleson and Brian Bohlman E-Mail: bdaile@missc.state.wy.us, craffe@missc.state.wy.us and bbohlm@missc.state.wy.us	(307) 777-7391	(307) 777-5616

Appendix G

HMIWI Emission Inventory

APPENDIX G--HMIWI EMISSION INVENTORY

The pollutants emitted from hospital/medical/infectious waste incinerators (HMIWI) include the following:

- metals (cadmium, lead, and mercury),
- particulate matter (PM),
- acid gases (hydrogen chloride, HCl, and sulfur dioxide, SO_2),
- organic compounds (dioxins and furans),
- carbon monoxide (CO), and
- nitrogen oxides (NO_x).

Emission factors for each of these pollutants are included in Table G-1. The emission factors presented in Table G-1 were generated based on test data used for development of the Emission Guidelines for HMIWI. For the most part, the emission factors presented in Table G-1 are similar to those presented in AP-42.[1] The test data used to develop the emission factors in Table G-1 was thoroughly reviewed for accuracy and reliability prior to use for the Emission Guidelines. Therefore, the emission factors presented in Table G-1 are appropriate emission factors for use in developing the emission inventory to be submitted in Section 111(d)/129 State Plans. The AP-42 emission factors may be used as well.

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[1]U.S. Environmental Protection Agency. *Compilation of Air Pollutant Emission Factors*, 5th ed. (AP-42), Vol. I: Stationary Point and Area Sources, Section 2.3: "Medical Waste Incineration," Research Triangle Park, North Carolina: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, January 1995.

TABLE G-1. EMISSION FACTORS FOR HMIWI

	Emission factors, lb emitted per lb waste charged					
	Combustion Control					
Pollutant	1/4-second	1-second	2-second	Wet Scrubbers	Dry scrubber w/o carbon	Dry scrubber w/ carbon
CDD/CDF	1.94×10^{-7}	4.45×10^{-8}	3.65×10^{-9}	4.26×10^{-10}	3.65×10^{-9}	7.04×10^{-11}
CDD/CDF TEQ	3.96×10^{-9}	9.09×10^{-10}	7.44×10^{-11}	1.01×10^{-11}	7.44×10^{-11}	1.68×10^{-12}
CO	8.12×10^{-3}	3.46×10^{-3}	1.52×10^{-4}	1.52×10^{-4}	1.52×10^{-4}	1.52×10^{-4}
PM	6.87×10^{-3}	3.66×10^{-3}	2.29×10^{-3}	a	2.29×10^{-5}	2.29×10^{-5}
HCl	2.24×10^{-2}	2.24×10^{-2}	2.24×10^{-2}	3.54×10^{-5}	4.37×10^{-4}	4.37×10^{-4}
Pb	3.80×10^{-5}	3.80×10^{-5}	3.80×10^{-5}	3.32×10^{-6}	1.31×10^{-7}	1.31×10^{-7}
SO_2	3.20×10^{-4}	3.20×10^{-4}	3.20×10^{-4}	3.20×10^{-4}	3.20×10^{-4}	3.20×10^{-4}
Hg[b]	3.70×10^{-5}	3.70×10^{-5}	3.70×10^{-5}	1.31×10^{-6}	3.70×10^{-5}	1.66×10^{-6}
Cd	4.10×10^{-6}	4.10×10^{-6}	4.10×10^{-6}	4.60×10^{-7}	2.60×10^{-8}	2.60×10^{-8}
NO_x	1.51×10^{-3}	1.51×10^{-3}	1.51×10^{-3}	1.51×10^{-3}	1.51×10^{-3}	1.51×10^{-3}

[a]low efficiency: 8.70×10^{-4}
moderate efficiency: 3.20×10^{-4}
high efficiency: 1.60×10^{-4}
[b]With waste reduction, the Hg emission factor for combustion control and dry scrubber w/o carbon would be 1.10×10^{-5}.

When estimating emissions from emission factors, the amount of waste burned per year at a facility is simply multiplied by the pollutant emission factor. For example, to estimate the annual Pb emissions (lb/yr) for an HMIWI which burns 424,000 lb of medical/infectious waste per year and is equipped with a wet scrubber, the following calculation is performed:

(424,000 lb waste/yr) x (3.32E-06 lb Pb/lb waste) = 1.41 lb Pb/yr

When using the HMIWI emission factors to estimate emissions, keep in mind that they are average values, and that emissions from HMIWI are greatly affected by the composition of the waste and may vary from facility to facility. Actual and reliable facility-specific stack sampling results should be used in place of emission factors where available. The preferred heirarchy for estimating emissions is as follows: (1) continuous emissions monitoring system (CEMs) data, (2) stack sampling results, and (3) emission factors.

The following pages contain a sample inventory questionnaire which States may modify as needed and have sources to complete. The inventory questionnaire requests information that States may use in the development of their source inventories and emission inventories.

SAMPLE INVENTORY QUESTIONNAIRE

A. FACILITY INFORMATION

A1. Facility name? _____

A2. Facility address? _____
_____
_____
_____

A3. Contact person? Name: _____
Phone: _____
Fax: _____

A4. Type of facility?
- ☐ Hospital
- ☐ Medical Office
- ☐ Dentist Office
- ☐ Veterinary Clinic
- ☐ Nursing Home
- ☐ Academic Institution
- ☐ Laboratory
- ☐ Commercial Waste Disposal Company
- ☐ Funeral Home
- ☐ Pharmaceutical company
- ☐ Other (please specify) _____

A5. In what county is the facility located? _____

B. INCINERATOR INFORMATION

B1. Is there, or has there ever been an incinerator or device located at the facility which combusts hospital waste or medical/infectious waste as defined in the attached definitions?
- ☐ Yes
- ☐ No
- ☐ Not sure

☞If you answered "yes" to question B1, please continue with question B2 below.
☞If you answered "no," your survey is complete - please return it to **********.
☞If you answered "not sure" to question B1, please describe the device in question and discuss what types of waste or fuel is being combusted below. Then proceed with question B2.

_____
_____
_____
_____
_____
_____

B2. When did the facility purchase and install the incinerator? _____

B3. Is the incinerator a cement kiln? ☐ Yes ☐ No

B4. Is the incinerator a pyrolysis unit (if unsure see attached definition of pyrolysis)? ☐ Yes ☐ No

B5. Is the incinerator required to have a permit under section 3005 of the Solid Waste Disposal Act? ☐ Yes ☐ No

B6. Is the incinerator subject to part 60 subpart Cb, Ea, or Eb (air emission standards and guidelines for certain municipal waste combustors)? ☐ Yes ☐ No

B7. Please provide a rough estimate of the percentage (by weight) of the types of fuels and/or wastes combusted in the incinerator each quarter (i.e., every 3 months):

___% Hospital waste and medical/infectious waste (excluding wastes marked with a * below)
___% Pathological waste, low-level radioactive waste, and chemotherapeutic waste*
___% Other (please indicate waste/fuel[2] type) _____

B8. Does the incinerator accept waste from off-site? ☐Yes ☐ No
If you answered "yes," please indicate the source of waste below.

_____

_____

B9. Is the incinerator a batch, continuous, or intermittent incinerator according to the attached definitions of batch incinerator, continuous incinerator, and intermittent incinerator?
☐ Batch ☐ Continuous ☐ Intermittent

☞If you answered "batch" to question B9, skip to question B15 below.
☞If you answered either "continuous" or "intermittent" to question B9, continue with question B10 below.

B10. How many hours do you charge waste/fuel[3] into the incinerator per day? _____hr/day

B11. How many pounds of waste/fuel* do you typically charge per hour? _____lb/hr

B12. On average, how many days per week is the incinerator operated? _____days/week

---

[2]Excluding fuels such a propane or natural gas used to maintain combustion chamber temperatures

[3]Excluding fuels such as propane or natural gas used to maintain combustion chamber temperatures

B13. On average, how many days per year is the incinerator operated? _____days/year

B14. Approximately, how many pounds of waste/fuel* is burned per year in the incinerator? _____lb/yr

☞ Skip to question B19 below.

B15. How many pounds of waste/fuel* do you charge into the incinerator per batch? _____lb/batch

B16. How many batches of waste/fuel* do you burn per week? _____batch/week

B17. How many batches of waste/fuel* do you burn per year? _____batch/year

B18. How many pounds of waste/fuel* do you burn per year? _____lb/yr

☞ Continue with question B19 below.

B19. What is the gas residence time in the secondary combustion chamber? ____ seconds

B20. What is the volume of the primary chamber of the incinerator in cubic feet? _____ft^3

C. AIR POLLUTION CONTROL INFORMATION

C1. Does the incinerator have any air pollution controls such as a wet scrubber, dry scrubber, or other control system, etc? If so. Please identify the type of control along with the manufacturer and model of the control system.

_____

_____

_____

_____

C2. If the incinerator is equipped with a dry scrubber, please indicate which of the type of sorbent used (if any). ☐ Lime ☐ Activated carbon

☐ Other (please specify) _____

D. EMISSIONS TESTING INFORMATION

D1. Has emissions testing been conducted at the incinerator for any of the following pollutants? If so, please indicate the results of the emissions test(s) and the year(s) conducted below. (If available, please present test results in the units provided below for each pollutant; if not, please indicate the units used to express each test result)

Pollutant	Year tested	Test result
PM (gr/dscf)		
CO (ppmv)		
Hcl (ppmv)		
Dioxin/furan (ng/dscm)		
No_x (ppmv)		
SO_2 (ppmv)		
Pb (mg/dscm)		
Cd (mg/dscm)		
Hg (mg/dscm)		

D2. Has opacity testing been conducted at the incinerator? ☐ Yes ☐ No
If so, please indicate the results of the opacity test(s) and the year(s) conducted.

Year tested	Test result (percent)

E. MONITORING INFORMATION

E1. Please indicate which of the following (if any) incinerator operating parameters are monitored and method of monitoring (e.g., strip chart, flow meter, thermocouple, scale, etc.)

Parameter	Monitoring method
☐ Primary chamber temperature	_____
☐ Secondary chamber temperature	_____
☐ Waste/fuel charge rate	_____
☐ Flue gas temperature	_____
☐ Other _____	_____
☐ Other _____	_____
☐ Other _____	_____
☐ Other _____	_____

E2. If the incinerator is equipped with a dry scrubber, please indicate which of the following scrubber operating parameters are monitored (if any). If not equipped with a dry scrubber, skip to the next question.

Parameter	Monitoring method
☐ Fabric filter inlet temperature	_____
☐ Lime flow rate	_____
☐ Activated carbon flow rate	_____
☐ Other sorbent flow rate (sorbent type _____)	_____
☐ Other _____	_____
☐ Other _____	_____
☐ Other _____	_____
☐ Other _____	_____

E3. If the incinerator is equipped with a wet scrubber, please indicate which of the following scrubber operating parameters are monitored (if any). If not equipped with a wet scrubber, skip to the next question.

Parameter	Monitoring method
☐ Scrubber liquor flow rate	_____
☐ Scrubber liquor pH	_____
☐ Scrubber outlet temperature	_____
☐ Pressure drop across scrubber	_____
☐ Scrubber energy input (horsepower or amperage)	_____
☐ Other _____	_____
☐ Other _____	_____
☐ Other _____	_____
☐ Other _____	_____

F. FACILITY INTENTIONS

F1. The EPA's hospital/medical/infectious waste incinerator regulations promulgated on September 15, 1997 require the State to develop a State Plan to regulate air emissions from HMIWI. In most cases, HMIWI will need an air pollution control device to meet the emission limits in the State Plan. The State Plan is to be approved or disapproved by EPA around March 15, 1999. If approved by this date, HMIWI would be required to comply with the State Plan by March 15, 2000. In light of the forthcoming State Plan, what are the facilities plans with regard to continued HMIWI operation?

____ Comply with the regulations and continue HMIWI operation
____ Discontinue HMIWI operation and seek other waste disposal methods
____ Decision yet to be made

DEFINITIONS

Listed below are some definitions that you may find to be useful when completing this survey. Definitions are listed in alphabetical order.

Batch HMIWI means an HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion.

Bypass stack means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Continuous emission monitoring system or CEMS means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

Continuous HMIWI means an HMIWI that is designed to allow waste charging and ash removal during combustion.

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gases in the HMIWI exhaust stream forming a dry powder material.

Hospital means any facility which has an organized medical staff, maintains at least six inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human inpatients who are not related and who stay on average in excess of 24 hours per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision.

Hospital/medical/infectious waste incinerator or HMIWI or HMIWI unit means any device that combusts any amount of hospital waste and/or medical/infectious waste.

Hospital waste means discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

Intermittent HMIWI means an HMIWI that is designed to allow waste charging, but not ash removal, during combustion.

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or by-product material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed below:

(1) Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.

(2) Human pathological waste, including tissues, organs, and body parts and body fluids

that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.

(3) Human blood and blood products including:

(i) Liquid waste human blood;

(ii) Products of blood;

(iii) Items saturated and/or dripping with human blood; or

(iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also include in this category.

(4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

(5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.

(6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

(7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in § 261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in § 261.4(a)(1) of this chapter.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Primary chamber means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.

Pyrolysis means the endothermic gasification of hospital waste and/or medical/infectious waste using external energy.

Secondary chamber means a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed.

Wet scrubber means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Appendix H

References On Health Effects

APPENDIX H -- REFERENCES ON HEALTH EFFECTS

Note: A Health Risk Assessment is not a required element of a valid State Plan submittal nor is it required for EPA approval of a State Plan. Because of general interest, the following is provided as background information only.

References

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10 International Agency for Research on Cancer (IARC). IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man: Cadmium, Nickel, Some Epoxides, Miscellaneous Industrial Chemicals and General Considerations on Volatile Anaesthetics. Volume 11. World Health Organization, Lyon. 1976.

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13. U.S. Environmental Protection Agency. Health Assessment Document for 2,3,7,8-Tetrachlorodibenzo-p-Dioxin and Related Compounds. External Review Draft, Office of Research and Development, Washington DC. 1994.

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16. U.S. Environmental Protection Agency. Air Quality Criteria for Particulate Matter. EPA/600/AP-95/001c. Office of Research and Development, Washington DC. 1995.

Appendix I

NSR Permit Requirements for HMIWI

I1 NSR Requirements
I2 Memo: Pollution Control Projects and New Source Review Applicability

Appendix I1

NSR Requirements

APPENDIX I1--NSR REQUIREMENTS

Note: A New Source Review (NSR) permit is not a required element of a valid State Plan submittal nor is it required for EPA approval of a State Plan. Because of general interest, the following is provided as background information only.

NSR - General Background

Owners of existing major emission sources that are altered in certain ways are subject to preconstruction permitting and other requirements of Parts C and D of Title I of the CAA. These permitting and review requirements are collectively called major New Source Review (NSR). Major NSR review includes both air quality impact analysis and emission control analysis.[1]

In 1994, EPA issued a policy memorandum which allowed, on a case-by-case basis, exclusion of pollution control projects at existing major sources from major NSR permit requirements. Under this policy the state performs a review and determines whether major NSR applies. Projects excluded from major NSR by states may still be subject to state minor NSR requirements and other state regulations.

NSR and Retrofits at HMIWI

Under the Subpart Ce Emission Guidelines many existing HMIWI will have to retrofit air pollution control systems to reduce emissions of various pollutants. In most cases the HMIWI undergoing retrofit are expected to install the types of air pollution control described in the medical waste incinerator Background Information Documents, September 15, 1997 Federal Register, and in the NSR policy memorandum for air pollution control projects.[2-4] For major NSR applicability, the EPA has concluded that HMIWI that undergo the types of control projects mentioned above and that maintain similar annual utilization rates (tons of hosptial/medical/infectious solid waste fired per year), meet the criteria for a pollution control project and meet the criteria for environmental safeguards as described in the NSR policy memo for air pollution control projects. The EPA has concluded that retrofit of these types of emissions control projects at HMIWI can, therefore, be exempt from major NSR by states. The EPA will rely on the state programs to ensure that the procedural and other safeguards in the NSR policy memo are satisfied.[2]

Nothing in this guidance precludes a state from conducting a major NSR of a HMIWI retrofit. The EPA encourages states to make NSR applicability determinations as early as possible so they can be incorporated into the Section 111(d)/129 State Plan submittal (plans are due September 15, 1998).

Notes:

1. See EPA's *New Source Review Workshop Manual, Prevention of Significant Deterioration and Non Attainment Area Permitting* October 1990 DRAFT for definition of key NSR terms.

2. See memorandum "Pollution Control Project and New Source Review (NSR) Applicability" July 1, 1994, from John Seitz, Director of Air Quality Planning and Standards.

3. Background Information Documents for proposed and promulgated HMIWI NSPS and Emission Guidelines:

   "Medical Waste Incinerators - Background Information for Proposed Standards and Guidelines: Industry Profile Report for New and Existing Facilitest," EPA-453/R-94-042a, July 1994;

   "Medical Waste Incinerators - Background Information for Proposed Standards and Guidelines: Control Technology Perforamnce Reprt for New and Existing Facilities," EPA-453/R-94-044a, July 1994;

   "Medical Waste Incinerators - Background Information for Proposed Standards and Guidelines: Model Plant Description and Cost Report for New and Existing Facilities," EPA-453/R-94-045a, July 1994;

   "Hospital/Medical/Infectious Waste Incinerators: Background Information for Promulgated Standards and Guidelines - Summary of Public Comments and Responses," EPA-453/R-97-006b, July 1997.

4. Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Hospital/Medical/Infectious Waste Incinerators; Final Rule. Federal Register Vol. 62, No. 178, Page 48347. September 17, 1997.

Appendix I2

Memo: Pollution Control Projects and New Source Review Applicability

APPENDIX I2--MEMO: POLLUTION CONTROL PROJECTS AND NEW SOURCE REVIEW APPLICABILITY

July 1, 1994

MEMORANDUM

SUBJECT: **Pollution Control Projects and New Source Review (NSR) Applicability**

FROM: **John S. Seitz, Director**
Office of Air Quality Planning and Standards (MD-10)

TO: Director, Air, Pesticides and Toxics Management Division, Regions I and IV
Director, Air and Waste Management Division, Region II
Director, Air, Radiation and Toxics Division, Region III
Director, Air and Radiation Division, Region V
Director, Air, Pesticides and Toxics Division, Region VI
Director, Air and Toxics Division, Regions VII, VIII, IX and X

This memorandum and attachment address issues involving the Environmental Protection Agency's (EPA's) NSR rules and guidance concerning the exclusion from major NSR of pollution control projects at existing sources. The attachment provides a full discussion of the issues and this policy, including illustrative examples.

For several years, EPA has had a policy of excluding certain pollution control projects from the NSR requirements of parts C and D of title I of the Clean Air Act (Act) on a case-by-case basis. In 1992, EPA adopted an explicit pollution control project exclusion for electric utility generating units [see 57 FR 32314 (the "WEPCO rule" or the "WEPCO rulemaking")]. At the time, EPA indicated that it would, in a subsequent rulemaking, consider adopting a formal pollution control project exclusion for other source categories [see 57 FR 32332]. In the interim, EPA stated that individual pollution control projects

involving source categories other than utilities could continue to be excluded from NSR by permitting authorities on a case-by-case basis [see 57 FR at 32320]. At this time, EPA expects to complete a rulemaking on a pollution control project exclusion for other source categories in early 1996. This memorandum and attachment provide interim guidance for permitting authorities on the approvability of these projects pending EPA's final action on a formal regulatory exclusion.

The attachment to this memorandum outlines in greater detail the type of projects that may qualify for a conditional exclusion from NSR as a pollution control project, the safeguards that are to be met, and the procedural steps that permitting authorities should follow in issuing an exclusion. Projects that do not meet these safeguards and procedural steps do not qualify for an exclusion from NSR under this policy. Pollution control projects potentially eligible for an exclusion (provided all applicable safeguards are met) include the installation of conventional or innovative emissions control equipment and projects undertaken to accommodate switching to an inherently less-polluting fuel, such as natural gas. Under this guidance, States may also exclude as pollution control projects some material and process changes (e.g., the switch to a less polluting coating, solvent, or refrigerant) and some other types of pollution prevention projects undertaken to reduce emissions of air pollutants subject to regulation under the Act.

The replacement of an existing emissions unit with a newer or different one (albeit more efficient and less polluting) or the reconstruction of an existing emissions unit does not qualify as a pollution control project. Furthermore, this guidance only applies to physical or operational changes whose primary function is the reduction of air pollutants subject to regulation under the Act at existing major sources. This policy does not apply to air pollution controls and emissions associated with a proposed new source. Similarly, the fabrication, manufacture or production of pollution control/prevention equipment and inherently less-polluting fuels or raw materials are not pollution control projects under this policy (e.g., a physical or operational change for the purpose of producing reformulated gasoline at a refinery is not a pollution control project).

It is EPA's experience that many bona fide pollution control projects are not subject to major NSR requirements for the simple reason that they result in a reduction in annual emissions at the source. In this way, these pollution control projects are outside major NSR coverage in accordance with the general rules for determining applicability of NSR to modifications at existing sources. However, some pollution control projects could result in significant potential or actual increases of some pollutants.
These latter projects comprise the subcategory of pollution control projects that can benefit from this guidance.

A pollution control project must be, on balance, "environmentally beneficial" to be eligible for an exclusion. Further, an environmentally-beneficial pollution control project may be excluded from otherwise applicable major NSR requirements only under conditions that ensure that the project will not cause or contribute to a violation of a national ambient air quality standard (NAAQS), prevention of significant deterioration (PSD) increment, or adversely affect visibility or other air quality related value (AQRV). In order to assure that air quality concerns with these projects are adequately addressed, there are two substantive and two procedural

safeguards which are to be followed by permitting authorities reviewing projects proposed for exclusion.

First, the permitting authority must determine that the proposed pollution control project, after consideration of the reduction in the targeted pollutant and any collateral effects, will be environmentally beneficial. Second, nothing in this guidance authorizes any pollution control project which would cause or contribute to a violation of a NAAQS, or PSD increment, or adversely impact an AQRV in a class I area. Consequently, in addition to this "environmentally-beneficial" standard, the permitting authority must ensure that adverse collateral environmental impacts from the project are identified, minimized, and, where appropriate, mitigated. For example, the source or the State must secure offsetting reductions in the case of a project which will result in a significant increase in a nonattainment pollutant. Where a significant collateral increase in actual emissions is expected to result from a pollution control project, the permitting authority must also assess whether the increase could adversely affect any national ambient air quality standard, PSD increment, or class I AQRV.

In addition to these substantive safeguards, EPA is specifying two procedural safeguards which are to be followed. First, since the exclusion under this interim guidance is only available on a case-by-case basis, sources seeking exclusion from major NSR requirements prior to the forthcoming EPA rulemaking on a pollution control project exclusion must, before beginning construction, obtain a determination by the permitting authority that a proposed project qualifies for an exclusion from major NSR requirements as a pollution control project. Second, in considering this request, the permitting authority must afford the public an opportunity to review and comment on the source's application for this exclusion. It is also important to note that any project excluded from major new source review as a pollution control project must still comply with all otherwise applicable requirements under the Act and the State implementation plan (SIP), including minor source permitting.

This guidance document does not supersede existing Federal or State regulations or approved SIP's. The policies set out in this memorandum and attachment are intended as guidance to be applied only prospectively (including those projects currently under evaluation for an exclusion) during the interim period until EPA takes action to revise its NSR rules, and do not represent final Agency action. This policy statement is not ripe for judicial review. Moreover, it is not intended, nor can it be relied upon, to create any rights enforceable by any party in litigation with the United States. Agency officials may decide to follow the guidance provided in this memorandum, or to act at variance with the guidance, based on an analysis of specific circumstances. The EPA also may change this guidance at any time without public notice. The EPA presently intends to address the matters discussed in this document in a forthcoming NSR rulemaking regarding proposed changes to the program resulting from the NSR Reform process and will take comment on these matters as part of that rulemaking.

As noted above, a detailed discussion of the types of projects potentially eligible for an exclusion from major NSR as a pollution control project, as well as the safeguards such projects must meet to qualify for the exclusion, is contained in the attachment to this memorandum. The Regional Offices should send this memorandum with the attachment to States within their jurisdiction. Questions concerning specific issues and cases should be directed to the appropriate

EPA Regional Office. Regional Office staff may contact David Solomon, Chief, New Source Review Section, at (919) 541-5375, if they have any questions.

Attachment

cc: Air Branch Chief, Regions I-X
NSR Reform Subcommittee Members

Attachment

GUIDANCE ON EXCLUDING POLLUTION CONTROL PROJECTS FROM MAJOR NEW SOURCE REVIEW (NSR)

I. Purpose

The Environmental Protection Agency (EPA) presently expects to complete a rulemaking on an exclusion from major NSR for pollution control projects by early 1996. In the interim, certain types of projects (involving source categories other than utilities) may qualify on a case-by-case basis for an exclusion from major NSR as pollution control projects. Prior to EPA's final action on a regulatory exclusion, this attachment provides interim guidance for permitting authorities on the types of projects that may qualify on a case-by-case basis from major NSR as pollution control projects, including the substantive and procedural safeguards which apply.

II. Background

The NSR provisions of part C [prevention of significant deterioration (PSD)] and part D (nonattainment requirements) of title I of the Clean Air Act (Act) apply to both the construction of major new sources and the modification of existing major sources.[1] The modification provisions of the NSR programs in parts C and D are based on the broad definition of modification in section 111(a)(4) of the Act. That section contemplates a two-step test for determining whether activities at an existing major facility constitute a modification subject to new source requirements. In the first step, the reviewing authority determines whether a physical or operational change will occur. In the second step, the question is whether the physical or operational change will result in any increase in emissions of any regulated pollutant.

The definition of physical or operational change in section 111(a)(4) could, standing alone, encompass the most mundane activities at an industrial facility (even the repair or replacement of a single leaky pipe, or a insignificant change in the way that pipe is utilized). However, EPA has recognized that Congress did not intend to make every activity at a source subject to new source requirements under parts C and D. As a result, EPA has by regulation limited the reach of the modification provisions of parts C and D to only major modifications. Under NSR, a "major modification" is generally a physical change or change in the method of operation of a major stationary source which would result in a significant net emissions increase in the emissions of any regulated pollutant [see, e.g., 40 CFR 52.21(b)(2)(i)]. A "net emissions increase" is defined as the increase in "actual emissions" from the particular physical or operational change together with any other contemporaneous increases or decreases in actual emissions [see, e.g., 40 CFR 52.21(b)(3)(i)]. In order to trigger major new source review, the net emissions increase must exceed specified "significance" levels [see, e.g., 40 CFR 52.21(b)(2)(i) and 40 CFR 52.21(b)(23)]. The EPA has also adopted common-sense exclusions from the "physical or operational change" component of the definition of "major modification."

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[1]The EPA's NSR regulations for nonattainment areas are set forth at 40 CFR 51.165, 52.24 and part 51, Appendix S. The PSD program is set forth in 40 CFR 52.21 and 51.166.

For example, EPA's regulations contain exclusions for routine maintenance, repair, and replacement; for certain increases in the hours of operation or in the production rate; and for certain types of fuel switches [see, e.g., 40 CFR 52.21(b)(2)(iii)].

In the 1992 "WEPCO" rulemaking [57 FR 32314], EPA amended its PSD and nonattainment NSR regulations as they pertain to utilities by adding certain pollution control projects to the list of activities excluded from the definition of physical or operational changes. In taking that action, EPA stated it was largely formalizing an existing policy under which it had been excluding individual pollution control projects where it was found that the project "would be environmentally beneficial, taking into account ambient air quality" [57 FR at 32320; see also id., n. 15].[2]

The EPA has provided exclusions for pollution control projects in the form of "no action assurances" prior to
November 15, 1990 and nonapplicability determinations based on Act changes as of November 15, 1990 (1990 Amendments). Generally, these exclusions addressed clean coal technology projects and fuel switches at electric utilities.

Because the WEPCO rulemaking was directed at the utility industry which faced "massive industry-wide undertakings of pollution control projects" to comply with the acid rain provisions of the Act [57 FR 32314], EPA limited the types of projects eligible for the exclusion to add-on controls and fuel switches at utilities. Thus, pollution control projects under the WEPCO rule are defined as:

> any activity or project undertaken at an existing electric utility steam generating unit for purposes of reducing emissions from such unit. Such activities or projects are limited to:
>
> (A) The installation of conventional or innovative pollution control technology, including but not limited to advanced flue gas desulfurization, sorbent injection for sulfur dioxide (SO_2) and nitrogen oxides (NO_x) controls and electrostatic precipitators;
>
> (B) An activity or project to accommodate switching to a fuel which is less polluting than the fuel in use prior to the activity or project . . .

[40 CFR 51.165(a)(1)(xxv) (emphasis added)].
The definition also includes certain clean coal technology demonstration projects. Id.

The EPA built two safeguards into the exclusion in the rulemaking. First, a project that meets the definition of pollution control project will not qualify for the exclusion where the

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[2]This guidance pertains only to source categories other than electric utilities, and EPA does not intend for this guidance to affect the WEPCO rulemaking in any way.

"reviewing authority determines that (the proposed project) renders the unit less environmentally beneficial . . ." [see, e.g., 51.165(a)(1)(v)(C)(8)]. In the WEPCO rule, EPA did not provide any specific definition of the environmentally- beneficial standard, although it did indicate that the pollution control project provision "provides for a case-by-case assessment of the pollution control project's net emissions and overall impact on the environment" [57 FR 32321]. This provision is buttressed by a second safeguard that directs permitting authorities to evaluate the air quality impacts of pollution control projects that could--through collateral emissions increases or changes in utilization patterns--adversely impact local air quality [see 57 FR 32322]. This provision generally authorizes, as appropriate, a permitting authority to require modelling of emissions increases associated with a pollution control project. Id. More fundamentally, it explicitly states that no pollution control project under any circumstances may cause or contribute to violation of a national ambient air quality standard (NAAQS), PSD increment, or air quality related value (AQRV) in a class I area. Id.[3]

As noted, the WEPCO rulemaking was expressly limited to existing electric utility steam generating units [see, e.g., 40 CFR 51.165(a)(1)(v)(C)(8) and 51.165(a)(1)(xx)]. The EPA limited the rulemaking to utilities because of the impending acid rain requirements under title IV of the Act, EPA's extensive experience with new source applicability issues for electric utilities, the general similarity of equipment, and the public availability of utility operating projections. The EPA indicated it would consider adopting a formal NSR pollution control project exclusion for other source categories as part of a separate NSR rulemaking. The rulemaking in question is now expected to be finalized by early 1996. On the other hand, the WEPCO rulemaking also noted that EPA's existing policy was, and would continue to be, to allow permitting authorities to exclude pollution control projects in other source categories on a case-by-case basis.

III. Case-By-Case Pollution Control Project Determinations

The following sections describe the type of projects that may be considered by permitting authorities for exclusion from major NSR as pollution control projects and two safeguards that permitting authorities are to use in evaluating such projects--the environmentally-beneficial test and an air quality impact assessment. To a large extent, these requirements are drawn from the WEPCO rulemaking. However, because the WEPCO rule was designed for a single source

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[3]The WEPCO rule refers specifically to "visibility limitation" rather than "air quality related values." However, EPA clearly stated in the preamble to the final rule that permitting agencies have the authority to "solicit the views of others in taking any other appropriate remedial steps deemed necessary to protect class I areas. . .. The EPA emphasizes that all environmental impacts, including those on class I areas, can be considered. . .." [57 FR 32322]. Further, the statutory protections in section 165(d) plainly are intended to protect against any "adverse impact on the AQRV of such [class I] lands (including visibility)." Based on this statutory provision, EPA believes that the proper focus of any air quality assessment for a pollution control project should be on visibility and any other relevant AQRV's for any class I areas that may be affected by the proposed project. Permitting authorities should notify Federal Land Managers where appropriate concerning pollution control projects which may adversely affect AQRV's in class I areas.

category, electric utilities, it cannot and does not serve as a complete template for this guidance. Therefore, the following descriptions expand upon the WEPCO rule in the scope of qualifying projects and in the specific elements inherent in the safeguards. These changes reflect the far more complicated task of evaluating pollution control projects at a wide variety of sources facing a myriad of Federal, State, and local clean air requirements.

Since the safeguards are an integral component of the exclusion, States must have the authority to impose the safeguards in approving an exclusion from major NSR under this policy. Thus, State or local permitting authorities in order to use this policy should provide statements to EPA describing and affirming the basis for its authority to impose these safeguards absent major NSR. Sources that obtain exclusions from permitting authorities that have not provided this affirmation of authority are at risk in seeking to rely on the exclusion issued by the permitting agency, because EPA may subsequently determine that the project does not qualify as a pollution control project under this policy.

A. Types of Projects Covered

1. Add-On Controls and Fuel Switches

In the WEPCO rulemaking, EPA found that both add-on emissions control projects and fuel switches to less-polluting fuels could be considered to be pollution control projects. For the purposes of today's guidance, EPA affirms that these types of projects are appropriate candidates for a case-by-case exclusion as well. These types of projects include:

- the installation of conventional and advanced flue gas desulfurization and sorbent injection for SO_2;

- electrostatic precipitators, baghouses, high efficiency multiclones, and scrubbers for particulate or other pollutants;

- flue gas recirculation, low-NO_x burners, selective non-catalytic reduction and selective catalytic reduction for NO_x; and

- regenerative thermal oxidizers (RTO), catalytic oxidizers, condensers, thermal incinerators, flares and carbon adsorbers for volatile organic compounds (VOC) and toxi air pollutants.

Projects undertaken to accommodate switching to an inherently less-polluting fuel such : natural gas can also qualify for the exclusion. Any activity that is necessary to accommodate switching to a inherently less-polluting fuel is considered to be part of the pollution control project. In some instances, where the emissions unit's capability would otherwise be impaired a a result of the fuel switch, this may involve certain necessary changes to the pollution generatin equipment (e.g., boiler) in order to maintain the normal operating capability of the unit at the time of the project.

2. Pollution Prevention Projects

It is EPA's policy to promote pollution prevention approaches and to remove regulatory barriers to sources seeking to develop and implement pollution prevention solutions to the extent allowed under the Act. For this reason, permitting authorities may also apply this exclusion to switches to inherently less-polluting raw materials and processes and certain other types of "pollution prevention" projects.[4] For instance, many VOC users will be making switches to water-based or powder-paint application systems as a strategy for meeting reasonably available control technology (RACT) or switching to a non-toxic VOC to comply with maximum achievable control technology (MACT) requirements.

Accordingly, under today's guidance, permitting authorities may consider excluding raw material substitutions, process changes and other pollution prevention strategies where the pollution control aspects of the project are clearly evident and will result in substantial emissions reductions per unit of output for one or more pollutants. In judging whether a pollution prevention project can be considered for exclusion as a pollution control project, permitting authorities may also consider as a relevant factor whether a project is being undertaken to bring a source into compliance with a MACT, RACT, or other Act requirement.

Although EPA is supportive of pollution control and prevention projects and strategies, special care must be taken in classifying a project as a pollution control project and in evaluating a project under a pollution control project exclusion. Virtually every modernization or upgrade project at an existing industrial facility which reduces inputs and lowers unit costs has the concurrent effect of lowering an emissions rate per unit of fuel, raw material or output. Nevertheless, it is clear that these major capital investments in industrial equipment are the very types of projects that Congress intended to address in the new source modification provisions [see Wisconsin Electric Power Co. v. Reilly, 893 F.2d 901, 907-10 (7th Cir. 1990) (rejecting contention that utility life extension project was not a physical or operational change); Puerto Rican Cement Co., Inc. v. EPA, 889 F.2d 292, 296-98 (1st Cir. 1989) (NSR applies to modernization project that decreases emissions per unit of output, but increases economic efficiency such that utilization may increase and result in net increase in actual emissions)]. Likewise, the replacement of an existing emissions unit with a newer or different one (albeit more efficient and less polluting) or the reconstruction of an existing emissions unit would not qualify as a pollution control project. Adopting a policy that automatically excludes from NSR any project that, while lowering operating costs or improving performance, coincidentally lowers a unit's emissions rate, would improperly exclude almost all modifications to existing emissions

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[4]For purposes of this guidance, pollution prevention means any activity that through process changes, product reformulation or redesign, or substitution of less polluting raw materials, eliminates or reduces the release of air pollutants and other pollutants to the environment (including fugitive emissions) prior to recycling, treatment, or disposal; it does not mean recycling (other than certain "in-process recycling" practices), energy recovery, treatment, or disposal [see Pollution Prevention Act of 1990 section 6602(b) and section 6603(5)(A) and (B); see also "EPA Definition of 'Pollution Prevention,'" memorandum from F. Henry Habicht II, May 28, 1992].

units, including those that are likely to increase utilization and therefore result in overall higher levels of emissions.

In order to limit this exclusion to the subset of pollution prevention projects that will in fact lower annual emissions at a source, permitting authorities should not exclude as pollution control projects any pollution prevention project that can be reasonably expected to result in an increase in the utilization of the affected emissions unit(s). For example, projects which significantly increase capacity, decrease production costs, or improve product marketability can be expected to affect utilization patterns. With these changes, the environment may or may not see a reduction in overall source emissions; it depends on the source's operations after the change, which cannot be predicted with any certainty.[5] This is not to say that these types of projects are necessarily subject to major NSR requirements, only that they should not be excluded as pollution control projects under this guidance. The EPA may consider different approaches to excluding pollution prevention projects from major NSR requirements in the upcoming NSR rulemaking. Under this guidance, however, permitting authorities should carefully review proposed pollution prevention projects to evaluate whether utilization of the source will increase as a result of the project.

Furthermore, permitting authorities should have the authority to monitor utilization of a affected emissions unit or source for a reasonable period of time subsequent to the project to verify what effect, if any, the project has on utilization. In cases where the project has clearly caused an increase in utilization, the permitting authority may need to reevaluate the basis for t original exclusion to verify that an exclusion is still appropriate and to ensure that all applicabl safeguards are being met.

B. Safeguards

The following safeguards are necessary to assure that projects being considered for an exclusion qualify as environmentally beneficial pollution control projects and do not have air quality impacts which would preclude the exclusion. Consequently, a project that does not me these safeguards does not qualify for an exclusion under this policy.

1. Environmentally-Beneficial Test

Projects that meet the definition of a pollution control project outlined above may nonetheless cause collateral emissions increases or have other adverse impacts. For instance, large VOC incinerator, while substantially eliminating VOC emissions, may generate sizeable NO_x emissions well in excess of significance levels. To protect against these sorts of problem EPA in the WEPCO rule provided for an assessment of the overall environmental impact of a

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[5]This is in marked contrast to the addition of pollution control equipment which typic does not, in EPA's experience, result in any increase in the source's utilization of the emission unit in question. In the few instances where this presumption is not true, the safeguards discussed in the next section should provide adequate environmental protections for these additions of pollution control equipment.

project and the specific impact, if any, on air quality. The EPA believes that this safeguard is appropriate in this policy as well.

Unless information regarding a specific case indicates otherwise, the types of pollution control projects listed in III. A. 1. above can be presumed, by their nature, to be environmentally beneficial. This presumption arises from EPA's experience that historically these are the very types of pollution controls applied to new and modified emissions units. The presumption does not apply, however, where there is reason to believe that 1) the controls will not be designed, operated or maintained in a manner consistent with standard and reasonable practices; or 2) collateral emissions increases have not been adequately addressed as discussed below.

In making a determination as to whether a project is environmentally beneficial, the permitting authority must consider the types and quantity of air pollutants emitted before and after the project, as well as other relevant environmental factors. While because of the case-by-case nature of projects it is not possible to list all factors which should be considered in any particular case, several concerns can be noted.

First, pollution control projects which result in an increase in non-targeted pollutants should be reviewed to determine that the collateral increase has been minimized and will not result in environmental harm. Minimization here does not mean that the permitting agency should conduct a BACT-type review or necessarily prescribe add-on control equipment to treat the collateral increase. Rather, minimization means that, within the physical configuration and operational standards usually associated with such a control device or strategy, the source has taken reasonable measures to keep any collateral increase to a minimum. For instance, the permitting authority could require that a low-NO_x burner project be subject to temperature and other appropriate combustion standards so that carbon monoxide (CO) emissions are kept to a minimum, but would not review the project for a CO catalyst or other add-on type options. In addition, a State's RACT or MACT rule may have explicitly considered measures for minimizing a collateral increase for a class or category of pollution control projects and requires a standard of best practices to minimize such collateral increases. In such cases, the need to minimize collateral increase from the covered class or category of pollution control projects can be presumed to have been adequately addressed in the rule.

In addition, a project which would result in an unacceptable increased risk due to the release of air toxics should not be considered environmentally beneficial. It is EPA's experience, however, that most projects undertaken to reduce emissions, especially add-on controls and fuel switches, result in concurrent reductions in air toxics. The EPA expects that many pollution control projects seeking an exclusion under this guidance will be for the purpose of complying with MACT requirements for reductions in air toxics. Consequently, unless there is reason to believe otherwise, permitting agencies may presume that such projects by their nature will result in reduced risks from air toxics.

2. Additional Air Quality Impacts Assessments

(a) General

Nothing in the Act or EPA's implementing regulations would allow a permitting authorit to approve a pollution control project resulting in an emissions increase that would cause or contribute to a violation of a NAAQS or PSD increment, or adversely impact visibility or other AQRV in a class I area [see, e.g., Act sections 110(a)(2)(C), 165, 169A(b), 173]. Accordingly, this guidance is not intended to allow any project to violate any of these air quality standards.

As discussed above, it is possible that a pollution control project--either through an increase in an emissions rate of a collateral pollutant or through a change in utilization--will cause an increase in actual emissions, which in turn could cause or contribute to a violation of a NAAQS or increment or
adversely impact AQRV's. For this reason, in the WEPCO rule the EPA required sources to address whenever 1) the proposed change would result in a significant net increase in actual emissions of any criteria pollutant over levels used for that source in the most recent air quality impact analysis; and 2) the permitting authority has reason to believe that such an increase woul cause or contribute to a violation of a NAAQS, increment or visibility limitation. If an air quali impact analysis indicates that the increase in emissions will cause or contribute to a violation of any ambient standard, PSD increment, or AQRV, the pollution control exclusion does not apply

The EPA believes that this safeguard needs to be applied here as well. Thus, where a pollution control project will result in a significant increase in emissions and that increased leve has not been previously analyzed for its air quality impact and raises the possibility of a NAAQ increment, or AQRV violation, the permitting authority is to require the source to provide an ai quality analysis sufficient to demonstrate the impact of the project. The EPA will not necessari require that the increase be modeled, but the source must provide sufficient data to satisfy the permitting authority that the new levels of emissions will not cause a NAAQS or increment violation and will not adversely impact the AQRV's of nearby potentially affected class I areas.

In the case of nonattainment areas, the State or the source must provide offsetting emissions reductions for any significant increase in a nonattainment pollutant from the pollutio control project. In other words, if a significant collateral increase of a nonattainment pollutant resulting from a pollution control project is not offset on at least a one-to-one ratio then the pollution control project would not qualify as environmentally beneficial.[6] However, rather tha having to apply offsets on a case-by-case basis, States may consider adopting (as part of their attainment plans) specific control measures or strategies for the purpose of generating offsets tc mitigate the projected collateral emissions increases from a class or category of pollution contr projects.

(b) Determination of Increase in Emissions

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[6]Regardless of the severity of the classification of the nonattainment area, a one-to-one offset ratio will be considered sufficient under this policy to mitigate a collateral increase from pollution control project. States may, however, require offset ratios that are greater than one-tc one.

The question of whether a proposed project will result in an emissions increase over pre-modification levels of actual emissions is both complicated and contentious. It is a question that has been debated by the New Source Review Reform Subcommittee of the Clean Air Act Advisory Committee and is expected to be revisited by EPA in the same upcoming rulemaking that will consider adopting a pollution control project exclusion. In the interim, EPA is adopting a simplified approach to determining whether a pollution control project will result in increased emissions.

The approach in this policy is premised on the fact that EPA does not expect the vast majority of these pollution control projects to change established utilization patterns at the source. As discussed in the previous section, it is EPA's experience that add-on controls do not impact utilization, and pollution prevention projects that could increase utilization may not be excluded under this guidance. Therefore, in most cases it will be very easy to calculate the emissions after the change: the product of the new emissions rate times the existing utilization rate. In the case of a pollution control project that collaterally increases a non-targeted pollutant, the actual increase (calculated using the new emissions rate and current utilization pattern) would need to be analyzed to determine its air quality impact.

The permitting authority may presume that projects meeting the definition outlined in section III(A)(1) will not change utilization patterns. However, the permitting authority is to reject this presumption where there is reason to believe that the project will result in debottlenecking, loadshifting to take advantage of the control equipment, or other meaningful increase in the use of the unit above current levels. Where the project will increase utilization and emissions, the associated emissions increases are calculated based on the post-modification potential to emit of the unit considering the application of the proposed controls. In such cases the permitting agency should consider the projected increase in emissions as collateral to the project and determine whether, notwithstanding the emissions increases, the project is still environmentally beneficial and meets all applicable safeguards.

In certain limited circumstances, a permitting agency may take action to impose federally-enforceable limits on the magnitude of a projected collateral emissions increase to ensure that all safeguards are met. For example, where the data used to assess a projected collateral emissions increase is questionable and there is reason to believe that emissions in excess of the projected increase would violate an applicable air quality standard or significantly exceed the quantity of offsets provided, restrictions on the magnitude of the collateral increase may be necessary to ensure compliance with the applicable safeguards.

IV. Procedural Safeguards

Because EPA has not yet promulgated regulations governing a generally applicable pollution control project exclusion from major NSR (other than for electric utilities), permitting authorities must consider and approve requests for an exclusion on a case-by-case basis, and the exclusion is not self-executing. Instead, sources must receive case-by-case approval from the permitting authority pursuant to a minor NSR permitting process, State nonapplicability determination or similar process. [Nothing in this guidance voids or creates an exclusion from any applicable minor source preconstruction review requirement in any SIP that has been

approved pursuant to section 110(a)(2)(C) and 40 CFR 51.160-164.] This process should also provide that the application for the exclusion and the permitting agency's proposed decision thereon be subject to public notice and the opportunity for public and EPA written comment. In those limited cases where the applicable SIP already exempts a class or category of pollution controls project from the minor source permitting public notice and comment requirements, and where no collateral increases are expected (e.g., the installation of a baghouse) and all otherwise applicable environmental safeguards are complied with, public notice and comment need not be provided for such projects. However, even in such circumstances, the permitting agency should provide advance notice to EPA when it applies this policy to provide an exclusion. For standard-wide applications to groups of sources (e.g., RACT or MACT), the notice may be provided to EPA at the time the permitting authority intends to issue a pollution control exclusion for the class or category of sources and thereafter notice need not be given to EPA on an individual basis for sources within the noticed group.

V. Emission Reduction Credits

In general, certain pollution control projects which have been approved for an exclusion from major NSR may result in emission reductions which can serve as NSR offsets or netting credits. All or part of the emission reductions equal to the difference between the pre-modification actual and post-modification potential emissions for the decreased pollutant may serve as credits provided that 1) the project will not result in a significant collateral increase in actual emissions of any criteria pollutant, 2) the project is still considered environmentally beneficial, and 3) all otherwise applicable criteria for the crediting of such reductions are met (e.g., quantifiable, surplus, permanent, and enforceable). Where an excluded pollution control project results in a significant collateral increase of a criteria pollutant, emissions reduction credits from the pollution control project for the controlled pollutant may still be granted provided, in addition to 2) and 3) above, the actual collateral increase is reduced below the applicable significance level, either through contemporaneous reductions at the source or external offsets. However, neither the exclusion from major NSR nor any credit (full or partial) for emission reductions should be granted by the permitting authority where the type or amount of the emissions increase which would result from the use of such credits would lessen the environmental benefit associated with the pollution control project to the point where the project would not have initially qualified for an exclusion.

IV. Illustrative Examples

The following examples illustrate some of the guiding principles and safeguards discussed above in reviewing proposed pollution control projects for an exclusion from major NSR.

Example 1

PROJECT DESCRIPTION: A chemical manufacturing facility in an attainment area for all pollutants is proposing to install a RTO to reduce VOC emissions (including emissions of some hazardous pollutants) at the plant by about 3000 tons per year (tpy). The emissions reductions from the RTO are currently voluntary, but may be necessary in the future for title III MACT compliance. Although the RTO has been designed to minimize NO_x emissions, it will produce 200 tpy of new NO_x emissions due to the unique composition of the emissions stream. There is no information about the project to rebut a presumption that the project will not change utilization of the source. Aside from the NO_x increase there are no other environmental impacts known to be associated with the project.

EVALUATION: As a qualifying add-on control device, the project may be considered a pollution control project and may be considered for an exclusion. The permitting agency should: 1) verify that the NO_x increase has been minimized to the extent practicable, 2) confirm (through modeling or other appropriate means) that the actual significant increase in NO_x emissions does not violate the applicable NAAQS,[7] PSD increment, or adversely impact any Class I area AQRV, and 3) apply all otherwise applicable SIP and minor source permitting requirements, including opportunity for public notice and comment.

Example 2

PROJECT DESCRIPTION: A source proposes to replace an existing coal-fired boiler with a gas-fired turbine as part of a cogeneration project. The new turbine is an exact replacement for the energy needs supplied by the existing boiler and will emit less of each pollutant on an hourly basis than the boiler did.

EVALUATION: The replacement of an existing emissions unit with a new unit (albeit more efficient and less polluting) does not qualify for an exclusion as a pollution control project. The company can, however, use any otherwise applicable netting credits from the removal of the existing boiler to seek to net the new unit out of major NSR.

Example 3

PROJECT DESCRIPTION: A source plans to physically renovate and upgrade an existing process line by making certain changes to the existing process, including extensive modifications to emissions units. Following the changes, the source will expand production and manufacture and market a new product line. The project will cause an increase in the economic efficiency of the line. The renovated line will also be less polluting on a per-product basis than the original configuration.

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[7] If the source were located in an area in which nonattainment NSR applied to NO_x emissions increases, 200 tons of NOx offset credits would be required for the project to be eligible for an exclusion.

EVALUATION: The change is not eligible for an exclusion as a pollution control project. On balance, the project does not have clearly evident pollution control aspects, and the resultant decrease in the per-product emissions rate (or factor) is incidental to the project. The project is a physical change or change in the method of operation that will increase efficiency and productivity.

Example 4

PROJECT DESCRIPTION: In response to the phaseout of chlorofluorocarbons (CFC) under title VI of the Act, a major source is proposing to substitute a less ozone-depleting substance (e.g., HCFC-141b) for one it currently uses that has a greater ozone depleting potential (e.g., CFC-11). A larger amount of the less-ozone depleting substance will have to be used. No other changes are proposed.

EVALUATION: The project may be considered a pollution control project and may be considered for an exclusion. The permitting agency should verify that 1) actual annual emissions of HCFC-141b after the proposed switch will cause less stratospheric ozone depletion than current annual emissions of CFC-11; 2) the proposed switch will not change utilization patterns or increase emissions of any other pollutant which would impact a NAAQS, PSD increment, or AQRV and will not cause any cross-media harm, including any unacceptable increased risk associated with toxic air pollutants; and 3) apply all otherwise applicable SIP and minor source permitting requirements, including opportunity for public notice and comment.

Example 5

PROJECT DESCRIPTION: An existing landfill proposes to install either flares or energy recovery equipment [i.e., turbines or internal combustion (IC) engines]. The reductions from the project are estimated at over 1000 tpy of VOC and are currently not necessary to meet Act requirements, but may be necessary some time in the future. In case A the project is the replacement of an existing flare or energy system and no increase in NO_x emissions will occur. In case B, the equipment is a first time installation and will result in a 100 tpy increase in NO_x. In case C, the equipment is an addition to existing equipment which will accommodate additional landfill gas (resulting from increased gas generation and/or capture consistent with the current permitted limits for growth at the landfill) and will result in a 50 tpy increase in NO_x.

EVALUATION: Projects A, B, and C may be considered pollution control projects and may be considered for an exclusion; however, in cases B and C, if the landfill is located in an area required to satisfy nonattainment NSR for NO_x emissions, the source would be required to obtain NO_x offsets at a ratio of at least 1:1 for the project to be considered for an exclusion. [NOTE: VOC-NO_x netting and trading for NSR purposes may be discussed in the upcoming NSR rulemaking, but it is beyond the scope of this guidance.] Although neither turbines or IC engines are listed in section III.A.1 as add-on control devices and would normally not be considered pollution control projects, in this specific application they serve the same function as

a flare, namely to reduce VOC emissions at the landfill with the added incidental benefit of producing useful energy in the process.[8]

The permitting agency should: 1) verify that the NO_x increase has been minimized to the extent practicable; 2) confirm (through modeling or other appropriate means) that the actual significant increase in NO_x emissions will not violate the applicable NAAQS, PSD increment, or adversely impact any AQRV; and 3) apply all otherwise applicable SIP and minor source and, as noted above, in cases B and C ensures that NO_x offsets are provided in an area in which nonattainment review applies to NO_x emissions increases. permitting requirements, including opportunity for public notice and comment.

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[8]The production of energy here is incidental to the project and is not a factor in qualifying the project for an exclusion as a pollution control project. In addition, any supplemental or co-firing of non-landfill gas fuels (e.g., natural gas, oil) would disqualify the project from being considered a pollution control project. The fuels would be used to maximize any economic benefit from the project and not for the purpose of pollution control at the landfill. However, the use of an alternative fuel solely as a backup fuel to be used only during brief and infrequent start-up or emergency situations would not necessarily disqualify an energy recovery project from being considered a pollution control project.

Appendix J

Clean Air Act Section 111(d)

APPENDIX J--CLEAN AIR ACT SECTION 111(d)

Note: The State Plans for HMIWI must be developed to satisfy the requirements of both Section 111(d) and Section 129. Where conflicts arise, Section 129 takes precedent. Refer to Appendix K for the text of Section 129.

(d)(1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by Section 110 under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under Section 108(a) or 112(b)(1)(A) but (ii) to which a standard of performance under this section would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such standards of performance. Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies.

(2) The Administrator shall have the same authority--

(A) to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan as he would have under Section 110(c) in the case of failure to submit an implementation plan, and

(B) to enforce the provisions of such plan in cases where the State fails to enforce them as he would have under sections 113 and 114 with respect to an implementation plan. In promulgating a standard of performance under a plan prescribed under this paragraph, the Administrator shall take into consideration, among other factors, remaining useful lives of the sources in the category of sources to which such standard applies.

Appendix K

Clean Air Act Section 129

APPENDIX K--SECTION 129 STATUTORY LANGUAGE

Note: The State Plans for HMIWI must be developed to satisfy the requirements of both Section 111(d) and Section 129. Where conflicts arise, Section 129 takes precedent. Refer to Appendix J for the text of Section 111(d).

SEC. 129. SOLID WASTE COMBUSTION.

(a) NEW SOURCE PERFORMANCE STANDARDS.

(1) IN GENERAL. -- (A) The Administrator shall establish performance standards and other requirements pursuant to Section 111 and this section for each category of solid waste incineration units. Such standards shall include emissions limitations and other requirements applicable to new units and guidelines (under Section 111(d) and this section) and other requirements applicable to existing units.

(B) Standards under Section 111 and this section applicable to solid waste incineration units with capacity greater than 250 tons per day combusting municipal waste shall be promulgated not later than 12 months after the date of enactment of the Clean Air Act Amendments of 1990. Nothing in this subparagraph shall alter any schedule for the promulgation of standards applicable to such units under Section 111 pursuant to any settlement and consent decree entered by the Administrator before the date of enactment of the Clean Air Act Amendments of 1990, provided that, such standards are subsequently modified pursuant to the schedule established in this subparagraph to include each of the requirements of this section.

(C) Standards under Section 111 and this section applicable to solid waste incineration units with capacity equal to or less than 250 tons per day combusting municipal waste and units combusting hospital waste, medical waste and infectious waste shall be promulgated not later than 24 months after the date of enactment of the Clean Air Act Amendments of 1990.

(D) Standards under Section 111 and this section applicable to solid waste incineration units combusting commercial or industrial waste shall be proposed not later than 36 months after the date of enactment of the Clean Air Act Amendments of 1990 and promulgated not later than 48 months after such date of enactment.

(E) Not later than 18 months after the date of enactment of the Clean Air Act Amendments of 1990, the Administrator shall publish a schedule for the promulgation of standards under Section 111 and this section applicable to other categories of solid waste incineration units.

(2) EMISSIONS STANDARD. -- Standards applicable to solid waste incineration units promulgated under Section 111 and this section shall reflect the maximum degree of reduction in emissions of air pollutants listed under section (a)(4) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new or existing units in each category. The Administrator may distinguish among classes, types (including mass-burn, refuse-derived fuel, modular and other types of units), and sizes of units within a category in establishing such standards. The degree of reduction in emissions that is deemed achievable for new units in a category shall not be less stringent than the emissions control that is achieved in practice by the best controlled similar unit, as determined by the Administrator. Emissions standards for existing units in a category may be less stringent than standards for new units in the same category but shall not be less stringent than the average emissions limitation achieved by the best performing 12 percent of units in the category (excluding units which first

met lowest achievable emissions rates 18 months before the date such standards are proposed or 30 months before the date such standards are promulgated, whichever is later).

(3) CONTROL METHODS AND TECHNOLOGIES. -- Standards under Section 111 and this section applicable to solid waste incineration units shall be based on methods and technologies for removal or destruction of pollutants before, during, or after combustion, and shall incorporat for new units siting requirements that minimize, on a site specific basis, to the maximum extent practicable, potential risks to public health or the environment.

(4) NUMERICAL EMISSIONS LIMITATIONS. -- The performance standards promulgated under Section 111 and this section and applicable to solid waste incineration units shall specify numerical emission limitations for the following substances or mixtures: particulate matter (tot and fine), opacity (as appropriate), sulfur dioxide, hydrogen chloride, oxides of nitrogen, carbo monoxide, lead, cadmium, mercury, and dioxins and dibenzofurans. The Administrator may promulgate numerical emissions limitations or provide for the monitoring of postcombustion concentrations of surrogate substances, parameters or periods of residence time in excess of stated temperatures with respect to pollutants other than those listed in this paragraph.

(5) REVIEW AND REVISION. -- Not later than 5 years following the initial promulgation o any performance standards and other requirements under this section and Section 111 applicabl to a category of solid waste incineration units, and at 5 year intervals thereafter, the Administrator shall review, and in accordance with this section and Section 111, revise such standards and requirements.

(b) EXISTING UNITS.

(1) GUIDELINES. -- Performance standards under this section and Section 111 for solid wa incineration units shall include guidelines promulgated pursuant to Section 111(d) and this section applicable to existing units. Such guidelines shall include, as provided in this section, each of the elements required by subsection (a) (emissions limitations, notwithstanding any restriction in Section 111(d) regarding issuance of such limitations), subsection (c) (monitorin subsection (d) (operator training), subsection (e) (permits), and subsection (h)(4) (residual risk

(2) STATE PLANS. -- Not later than 1 year after the Administrator promulgates guidelines f a category of solid waste incineration units, each State in which units in the category are operating shall submit to the Administrator a plan to implement and enforce the guidelines wit respect to such units. The State plan shall be at least as protective as the guidelines promulgat by the Administrator and shall provide that each unit subject to the guidelines shall be in compliance with all requirements of this section not later than 3 years after the State plan is approved by the Administrator but not later than 5 years after the guidelines were promulgated The Administrator shall approve or disapprove any State plan within 180 days of the submissi and if a plan is disapproved, the Administrator shall state the reasons for disapproval in writin Any State may modify and resubmit a plan which has been disapproved by the Administrator.

(3) FEDERAL PLAN. -- The Administrator shall develop, implement and enforce a plan for existing solid waste incineration units within any category located in any State which has not submitted an approvable plan under this subsection with respect to units in such category with 2 years after the date on which the Administrator promulgated the relevant guidelines. Such p shall assure that each unit subject to the plan is in compliance with all provisions of the guidelines not later than 5 years after the date the relevant guidelines are promulgated.

(c) MONITORING. -- The Administrator shall, as part of each performance standard promulgated pursuant to subsection (a) and Section 111, promulgate regulations requiring the owner or operator of each solid waste incineration unit

(1) to monitor emissions from the unit at the point at which such emissions are emitted into the ambient air (or within the stack, combustion chamber or pollution control equipment, as appropriate) and at such other points as necessary to protect public health and the environment;

(2) to monitor such other parameters relating to the operation of the unit and its pollution control technology as the Administrator determines are appropriate; and

(3) to report the results of such monitoring. Such regulations shall contain provisions regarding the frequency of monitoring, test methods and procedures validated on solid waste incineration units, and the form and frequency of reports containing the results of monitoring and shall require that any monitoring reports or test results indicating an exceedance of any standard under this section shall be reported separately and in a manner that facilitates review for purposes of enforcement actions. Such regulations shall require that copies of the results of such monitoring be maintained on file at the facility concerned and that copies shall be made available for inspection and copying by interested members of the public during business hours.

(d) OPERATOR TRAINING. -- Not later than 24 months after the enactment of the Clean Air Act Amendments of 1990, the Administrator shall develop and promote a model State program for the training and certification of solid waste incineration unit operators and high-capacity fossil fuel fired plant operators. The Administrator may authorize any State to implement a model program for the training of solid waste incineration unit operators and high-capacity fossil fuel fired plant operators, if the State has adopted a program which is at least as effective as the model program developed by the Administrator. Beginning on the date 36 months after the date on which performance standards and guidelines are promulgated under subsection (a) and Section 111 for any category of solid waste incineration units it shall be unlawful to operate any unit in the category unless each person with control over processes affecting emissions from such unit has satisfactorily completed a training program meeting the requirements established by the Administrator under this subsection.

(e) PERMITS. -- Beginning (1) 36 months after the promulgation of a performance standard under subsection (a) and Section 111 applicable to a category of solid waste incineration units, or (2) the effective date of a permit program under title V in the State in which the unit is located, whichever is later, each unit in the category shall operate pursuant to a permit issued under this subsection and title V. Permits required by this subsection may be renewed according to the provisions of title V. Notwithstanding any other provision of this Act, each permit for a solid waste incineration unit combusting municipal waste issued under this Act shall be issued for a period of up to 12 years and shall be reviewed every 5 years after date of issuance or reissuance. Each permit shall continue in effect after the date of issuance until the date of termination, unless the Administrator or State determines that the unit is not in compliance with all standards and conditions contained in the permit. Such determination shall be made at regular intervals during the term of the permit, such intervals not to exceed 5 years, and only after public comment and public hearing. No permit for a solid waste incineration unit may be issued under this Act by an agency, instrumentality or person that is also responsible, in whole or part, for the design and construction or operation of the unit. Notwithstanding any other provision of this subsection, the Administrator or the State shall require the owner or operator of any unit to comply with emissions limitations or implement any other measures, if the Administrator or the State determines that emissions in the absence of such limitations or measures my reasonably be anticipated to endanger public health or the environment. The Administrator's determination under the preceding sentence is a discretionary decision.

(f) EFFECTIVE DATE AND ENFORCEMENT.

(1) NEW UNITS. -- Performance standards and other requirements promulgated pursuant to this section and Section 111 and applicable to new solid waste incineration units shall be effective as of the date 6 months after the date of promulgation.

(2) EXISTING UNITS. -- Performance standards and other requirements promulgated pursuant to this section and Section 111 and applicable to existing solid waste incineration units shall be effective as expeditiously as practicable after approval of a State plan under subsection (b)(2) (or promulgation of a plan by the Administrator under subsection (b)(3)) but in no event later than 3 years after the State plan is approved or 5 years after the date such standards or requirements are promulgated, whichever is earlier.

(3) PROHIBITION. -- After the effective date of any performance standard, emission limitation or other requirement promulgated pursuant to this section and Section 111, it shall be unlawful for any owner or operator of any solid waste incineration unit to which such standard, limitation or requirement applies to operate such unit in violation of such limitation, standard or requirement or for any other person to violate an applicable requirement of this section.

(4) COORDINATION WITH OTHER AUTHORITIES. -- For purposes of sections 111(e), 113, 114, 116, 120, 303, 304, 307 and other provisions for the enforcement of this Act, each performance standard, emission limitation or other requirement established pursuant to this section by the Administrator or a State or local government, shall be treated in the same manner as a standard of performance under Section 111 which is an emission limitation.

(g) DEFINITIONS. -- For purposes of Section 306 of the Clean Air Act Amendments of 1990 and this section only

(1) SOLID WASTE INCINERATION UNIT. -- The term 'solid waste incineration unit' means a distinct operating unit of any facility which combusts any solid waste material from commercial or industrial establishments or the general public (including single and multiple residences, hotels, and motels). Such term does not include incinerators or other units required to have a permit under Section 3005 of the Solid Waste Disposal Act. The term 'solid waste incineration unit' does not include (A) materials recovery facilities (including primary or secondary smelters) which combust waste for the primary purpose of recovering metals, (B) qualifying small power production facilities, as defined in Section 3(17)(C) of the Federal Power Act (16 U.S.C. 769(17)(C)), or qualifying cogeneration facilities, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), which burn homogeneous waste (such as units which burn tires or used oil, but not including refuse-derived fuel) for the production of electric energy or in the case of qualifying cogeneration facilities which burn homogeneous waste for the production of electric energy and steam or forms of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes, or (C) air curtain incinerators provided that such incinerators only burn wood wastes, yard wastes and clean lumber and that such air curtain incinerators comply with opacity limitations to be established by the Administrator by rule.

(2) NEW SOLID WASTE INCINERATION UNIT. -- The term 'new solid waste incineration unit' means a solid waste incineration unit the construction of which is commenced after the Administrator proposes requirements under this section establishing emissions standards or other requirements which would be applicable to such unit or a modified solid waste incineration unit.

(3) MODIFIED SOLID WASTE INCINERATION UNIT. -- The term 'modified solid waste incineration unit' means a solid waste incineration unit at which modifications have occurred after the effective date of a standard under subsection (a) if (A) the cumulative cost of the

modifications, over the life of the unit, exceed 50 per centum of the original cost of construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs, or (B) the modification is a physical change in or change in the method of operation of the unit which increases the amount of any air pollutant emitted by the unit for which standards have been established under this section or Section 111.

(4) EXISTING SOLID WASTE INCINERATION UNIT. -- The term 'existing solid waste incineration unit' means a solid waste unit which is not a new or modified solid waste incineration unit.

(5) MUNICIPAL WASTE. -- The term 'municipal waste' means refuse (and refuse-derived fuel) collected from the general public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials and non-combustible materials such as metal, glass and rock, provided that: (A) the term does not include industrial process wastes or medical wastes that are segregated from such other wastes; and (B) an incineration unit shall not be considered to be combusting municipal waste for purposes of Section 111 or this section if it combusts a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal waste.

(6) OTHER TERMS. -- The terms 'solid waste' and 'medical waste' shall have the meanings established by the Administrator pursuant to the Solid Waste Disposal Act.

(h) OTHER AUTHORITY.

(1) STATE AUTHORITY. -- Nothing in this section shall preclude or deny the right of any State or political subdivision thereof to adopt or enforce any regulation, requirement, limitation or standard relating to solid waste incineration units that is more stringent than a regulation, requirement, limitation or standard in effect under this section or under any other provision of this Act.

(2) OTHER AUTHORITY UNDER THIS ACT. -- Nothing in this section shall diminish the authority of the Administrator or a State to establish any other requirements applicable to solid waste incineration units under any other authority of law, including the authority to establish for any air pollutant a national ambient air quality standard, except that no solid waste incineration unit subject to performance standards under this section and Section 111 shall be subject to standards under Section 112(d) of this Act.

(3) RESIDUAL RISK. -- The Administrator shall promulgate standards under Section 112(f) for a category of solid waste incineration units, if promulgation of such standards is required under Section 112(f). For purposes of this preceding sentence only

(A) the performance standards under subsection (a) and Section 111 applicable to a category of solid waste incineration units shall be deemed standards under Section 112(d)(2), and

(B) the Administrator shall consider and regulate, if required, the pollutants listed under subsection (a)(4) and no others.

(4) ACID RAIN. -- A solid waste incineration unit shall not be utility unit as defined in title IV: provided, that, more than 80 per centum of its annual average fuel consumption measured on a Btu basis, during a period or periods to be determined by the Administrator, is from a fuel (including any waste burned as a fuel) other than a fossil fuel.

(5) REQUIREMENTS OF PARTS C AND D. -- No requirement of an applicable implementation plan under Section 165 (relating to construction of facilities in regions identified pursuant to Section 107(d)(1)(A)(ii) or (iii)) or under Section 172(c)(5) (relating to permits for

construction and operation in nonattainment areas) may be used to weaken the standards in effect under this section.

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(b) CONFORMING AMENDMENT. -- Section 169(1) of the Clean Air Act is amended by striking "two hundred and" after "municipal incinerators capable of charging more than".

(c) REVIEW OF ACID GAS SCRUBBING REQUIREMENTS. -- Prior to the promulgation of any performance standard for solid waste incineration units combusting municipal waste under Section 111 or Section 129 of the Clean Air Act, the Administrator shall review the availability of acid gas scrubbers as a pollution control technology for small new units and for existing units (as defined in 54 Federal Register 52190 (December 20, 1989), taking into account the provisions of subsection (a)(2) of Section 129 of the Clean Air Act.

Appendix L

40 CFR 60 Subpart B

APPENDIX L--40 CFR 60 SUBPART B WITH 12/19/95 INSERTS

Subpart B -- Adoption and Submittal of State Plans for Designated Facilities

60.20 Applicability.

The provisions of this subpart apply to States upon publication of a final guideline document under Section 60.22(a).

60.21 Definitions.

Terms used but not defined in this subpart shall have the meaning given them in the Act and in Subpart A:

(a) "Designated pollutant" means any air pollutant, emissions of which are subject to a standard of performance for new stationary sources but for which air quality criteria have not been issued, and which is not included on a list published under Section 108(a) or Section 112(b)(1)(A) of the Act.

(b) "Designated facility" means any existing facility (see Section 60.2(aa)) which emits a designated pollutant and which would be subject to a standard of performance for that pollutant if the existing facility were an affected facility (see Section 60.2).

(c) "Plan" means a plan under Section 111(d) of the Act which establishes emission standards for designated pollutants from designated facilities and provides for the implementation and enforcement of such emission standards.

(d) "Applicable plan" means the plan, or most recent revision thereof, which has been approved under Section 60.27(b) or promulgated under Section 60.27(d).

(e) "Emission guideline" means a guideline set forth in Subpart C of this part, or in a final guideline document published under 60.22(a), which reflects the degree of emission reduction achievable through the application of the best system of emission reduction which (taking into account the cost of such reduction) the Administrator has determined has been adequately demonstrated for designated facilities.

(f) "Emission standard" means a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, or prescribing equipment specifications for control of air pollution emissions.

(g) "Compliance schedule" means a legally enforceable schedule specifying a date or dates by which a source or category of sources must comply with specific emission standards contained in a plan or with any increments of progress to achieve such compliance.

(h) "Increments of progress" means steps to achieve compliance which must be taken by an owner or operator of a designated facility, including:

(1) Submittal of a final control plan for the designated facility to the appropriate air pollution control agency;

(2) Awarding of contracts for emission control systems or for process modifications, or issuance of orders for the purchase of component parts to accomplish emission control or process modification;

(3) Initiation of on-site construction or installation of emission control equipment or process change;

(4) Completion of on-site construction or installation of emission control equipment or process change; and

(5) Final compliance.

(i) "Region" means an air quality control region designated under Section 107 of the Act and described in Part 81 of this chapter.

(j) "Local agency" means any local governmental agency.

60.22 Publication of guideline documents, emission guidelines, and final compliance times.

(a) Concurrently upon or after proposal of standards of performance for the control of a designated pollutant from affected facilities, the Administrator will publish a draft guideline document containing information pertinent to control of the designated pollutant from designated facilities. Notice of the availability of the draft guideline document will be published in the FEDERAL REGISTER and public comments on its contents will be invited. After consideration of Public comments and upon or after promulgation of standards of performance for control of a designated pollutant from affected facilities, a final guideline document will be published and notice of its availability will be published in the FEDERAL REGISTER.

(b) Guideline documents published under this section will provide information for the development of State plans, such as:

(1) Information concerning known or suspected endangerment of public health or welfare caused, or contributed to, by the designated pollutant.

(2) A description of systems of emission reduction which, in the judgment of the Administrator, have been adequately demonstrated.

(3) Information on the degree of emission reduction which is achievable with each system, together with information on the costs and environmental effects of applying each system to designated facilities.

(4) Incremental periods of time normally expected to be necessary for the design, installation, and startup of identified control systems

(5) An emission guideline that reflects the application of the best system of emission reductior (considering the cost of such reduction) that has been adequately demonstrated for designated facilities, and the time within which compliance with emission standards of equivalent stringenc can be achieved. The Administrator will specify different emission guidelines or compliance times or both for different sizes, types, and classes of designated facilities when costs of control physical limitations, geographical location, or similar factors make subcategorization appropriat

(6) Such other available information as the Administrator determines may contribute to the formulation of State plans.

(c) Except as provided in paragraph (d)(1) of this section, the emission guidelines and compliance times referred to in paragraph (b)(5) of this section will be proposed for comment upon publication of the draft guideline document, and after consideration of comments will be promulgated in Subpart C of this part with such modifications as may be appropriate.

(d)(1) If the Administrator determines that a designated pollutant may cause or contribute to endangerment of public welfare, but that adverse effects on public health have not been demonstrated, he will include the determination in the draft guideline document and in the

FEDERAL REGISTER notice of its availability. Except as provided in paragraph (d)(2) of this section, paragraph (c) of this section shall be inapplicable in such cases.

(2) If the Administrator determines at any time on the basis of new information that a prior determination under paragraph (d)(1) of this section is incorrect or no longer correct, he will publish notice of the determination in the FEDERAL REGISTER, revise the guideline document as necessary under paragraph (a) of this section, and propose and promulgate emission guidelines and compliance times under paragraph (c) of this section.

60.23 Adoption and submittal of State plans; public hearings.

(a)(1) Unless otherwise specified in the applicable subpart, within 9 months after notice of the availability of a final guideline document is published under Section 60.22a), each State shall adopt and submit to the Administrator, in accordance with Section 60.4 of Subpart A of this part, a plan for the control of the designated pollutant to which the guideline document applies.

(2) Within nine months after notice of the availability of a final revised guideline document is published as provided in Section 60.22(d)(2), each State shall adopt and submit to the Administrator any plan revision necessary to meet the requirements of this subpart.

(b) If no designated facility is located within a State, the State shall submit a letter of certification to that effect to the Administrator within the time specified in paragraph (a) of this section. Such certification shall exempt the State from the requirements of this subpart for that designated pollutant.

(c)(1) Except as provided in paragraphs (c)(2) and (c)(3) of this section, the State shall, prior to the adoption of any plan or revision thereof, conduct one or more public hearings within the State on such plan or plan revision.

(2) No hearing shall be required for any change to an increment of progress in an approved compliance schedule unless the change is likely to cause the facility to be unable to comply with the final compliance date in the schedule.

(3) No hearing shall be required on an emission standard in effect prior to the effective date of this subpart if it was adopted after a public hearing and is at least as stringent as the corresponding emission guideline specified in the applicable guideline document published under Section 60.22(a).

(d) Any hearing required by paragraph (c) of this section shall be held only after reasonable notice. Notice shall be given at least 30 days prior to the date of such hearing and shall include:

(1) Notification to the public by prominently advertising the date, time, and place of such hearing in each region affected;

(2) Availability, at the time of public announcement, of each proposed plan or revision thereof for public inspection in at least one location in each region to which it will apply;

(3) Notification to the Administrator;

(4) Notification to each local air pollution control agency in each region to which the plan or revision will apply; and

(5) In the case of an interstate region, notification to any other State included in the region.

(e) The State shall prepare and retain, for a minimum of 2 years, a record of each hearing for inspection by any interested party. The record shall contain, as a minimum, a list of witnesses together with the text of each presentation.

(f) The State shall submit with the plan or revision:

(1) Certification that each hearing required by paragraph (c) of this section was held in accordance with the notice required by paragraph (d) of this section; and

(2) A list of witnesses and their organizational affiliations, if any, appearing at the hearing and a brief written summary of each presentation or written submission.

(g) Upon written application by a State agency (through the appropriate Regional Office), the Administrator may approve State procedures designed to insure public participation in the matters for which hearings are required and public notification of the opportunity to participate if, in the judgment of the Administrator, the procedures, although different from the requirements of this subpart, in fact provide for adequate notice to and participation of the public. The Administrator may impose such conditions on his approval as he deems necessary. Procedures approved under this section shall be deemed to satisfy the requirements of this subpart regarding procedures for public hearings.

60.24 Emission standards and compliance schedules.

(a) Each plan shall include emission standards and compliance schedules.

(b)(1) Emission standards shall prescribe allowable rates of emissions except when it is clearly impracticable. Such cases will be identified in the guideline documents issued under Section 60.22. Where emission standards prescribing equipment specifications are established, the plan shall, to the degree possible, set forth the emission reductions achievable by implementation of such specifications, and may permit compliance by the use of equipment determined by the State to be equivalent to that prescribed.

(2) Test methods and procedures for determining compliance with the emission standards shall be specified in the plan. Methods other than those specified in Appendix A to this part may be specified in the plan if shown to be equivalent or alternative methods as defined in Section 60.2(t) and (u).

(3) Emission standards shall apply to all designated facilities within the State. A plan may contain emission standards adopted by local jurisdictions provided that the standards are enforceable by the State.

(c) Except as provided in paragraph (f) of this section, where the Administrator has determined that a designated pollutant may cause or contribute to endangerment of public health, emission standards shall be no less stringent than the corresponding emission guideline(s) specified in Subpart C of this part, and final compliance shall be required as expeditiously as practicable but no later than the compliance times specified in Subpart C of this part.

(d) Where the Administrator has determined that a designated that a designated pollutant may cause or contribute to endangerment of public welfare but that adverse effects on public health have not been demonstrated, States may balance the emission guidelines, compliance times, and other information provided in the applicable guideline document against other factors of public concern in establishing emission standards, compliance schedules, and variances. Appropriate consideration shall be given to the factors specified in Section 60.22(b) and to information presented at the public hearing(s) conducted under Section 60.23(c).

(e)(1) Any compliance schedule extending more than 12 months from the date required for submittal of the plan shall include legally enforceable increments of progress to achieve compliance for each designated facility or category of facilities. Increments of progress shall include, where practicable, each increment of progress specified in Section 60.21(h) and shall

include such additional increments of progress as may be necessary to permit close and effective supervision of progress toward final compliance.

(2) A plan may provide that compliance schedules for individual sources or categories of sources will be formulated after plan submittal. Any such schedule shall be the subject of a public hearing held according to Section 60.23 and shall be submitted to the Administrator within 60 days after the date of adoption of the schedule but in no case later than the date prescribed for submittal of the first semiannual report required by Section 60.25(e).

(f) Unless otherwise specified in the applicable subpart on a case-by-case basis for particular designated facilities or classes of facilities, States may provide for the application of less stringent emissions standards or longer compliance schedules than those otherwise required by paragraph (c) of this section, provided that the State demonstrates with respect to each such facility (or class of facilities):

(1) Unreasonable cost of control resulting from plant age, location, or basic process design;

(2) Physical impossibility of installing necessary control equipment; or

(3) Other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable.

(g) Nothing in this subpart shall be construed to preclude any State or political subdivision thereof from adopting or enforcing

(1) emission standards more stringent than emission guidelines specified in Subpart C of this part or in applicable guideline documents or

(2) compliance schedules requiring final compliance at earlier times than those specified in Subpart C or in applicable guideline documents.

60.25 Emission inventories, source surveillance, reports.

(a) Each plan shall include an inventory of all designated facilities, including emission data for the designated pollutants and information related to emissions as specified in Appendix D to this part. Such data shall be summarized in the plan, and emission rates of designated pollutants from designated facilities shall be correlated with applicable emission standards. As used in this subpart, "correlated" means presented in such a manner as to show the relationship between measured or estimated amounts of emissions and the amounts of such emissions allowable under applicable emission standards.

(b) Each plan shall provide for monitoring the status of compliance with applicable emission standards. Each plan shall, as a minimum, provide for:

(1) Legally enforceable procedures for requiring owners or operators of designated facilities to maintain records and periodically report to the State information on the nature and amount of emissions from such facilities, and/or such other information as may be necessary to enable the State to determine whether such facilities are in compliance with applicable portions of the plan.

(2) Periodic inspection and, when applicable, testing of designated facilities.

(c) Each plan shall provide that information obtained by the State under paragraph (b) of this section shall be correlated with applicable emission standards (see Section 60.25(a)) and made available to the general public.

(d) The provisions referred to in paragraphs (b) and (c) of this section shall be specifically identified. Copies of such provisions shall be submitted with the plan unless:

(1) They have been approved as portions of a preceding plan submitted under this subpart or portions of an implementation plan submitted under Section 110 of the Act, and

(2) The State demonstrates:

(i) That the provisions are applicable to the designated pollutant(s) for which the plan is submitted, and

(ii) That the requirements of Section 60.26 are met.

(e) The State shall submit reports on progress in plan enforcement to the Administrator on ar annual (calendar year) basis, commencing with the first full report period after approval of a pl or after promulgation of a plan by the Administrator. Information required under this paragrap must be included in the annual report required by Section 51.321 of this chapter.

(f) Each progress report shall include:

(1) Enforcement actions initiated against designated facilities during the reporting period, un any emission standard or compliance schedule of the plan.

(2) Identification of the achievement of any increment of progress required by the applicable plan during the reporting period.

(3) Identification of designated facilities that have ceased operation during the reporting peri

(4) Submission of emission inventory data as described in paragraph (a) of this section for designated facilities that were not in operation at the time of plan development but began operation during the reporting period.

(5) Submission of additional data as necessary to update the information submitted under paragraph (a) of this section or in previous progress reports.

(6) Submission of copies of technical reports on all performance testing on designated facili conducted under paragraph (b)(2) of this section, complete with concurrently recorded proces data.

60.26 Legal authority.

(a) Each plan shall show that the State has legal authority to carry out the plan, including authority to:

(1) Adopt emission standards and compliance schedules applicable to designated facilities

(2) Enforce applicable laws, regulations, standards, and compliance schedules, and seek injunctive relief.

(3) Obtain information necessary to determine whether designated facilities are in complian with applicable laws, regulations, standards, and compliance schedules, including authority tc require recordkeeping and to make inspections and conduct tests of designated facilities.

(4) Require owners or operators of designated facilities to install, maintain, and use emissio monitoring devices and to make periodic reports to the State on the nature and amounts of emissions from such facilities; also authority for the State to make such data available to the public as reported and as correlated with applicable emission standards.

(b) The provisions of law or regulations which the State determines provide the authorities required by this section shall be specifically identified. Copies of such laws or regulations sh be submitted with the plan unless:

(1) They have been approved as portions of a preceding plan submitted under this subpart o portions of an implementation plan submitted under Section 110 of the Act, and

(2) The State demonstrates that the laws or regulations are applicable to the designated pollutant(s) for which the plan is submitted.

(c) The plan shall show that the legal authorities specified in this section are available to the State at the time of submission of the plan. Legal authority adequate to meet the requirements of paragraphs (a)(3) and (4) of this section may be delegated to the State under Section 114 of the Act.

(d) A State governmental agency other than the State air pollution control agency may be assigned responsibility for carrying out a portion of a plan if the plan demonstrates to the Administrator's satisfaction that the State governmental agency has the legal authority necessary to carry out that portion of the plan.

(e) The State may authorize a local agency to carry out a plan, or portion thereof, within the local agency's jurisdiction if the plan demonstrates to the Administrator's satisfaction that the local agency has the legal authority necessary to implement the plan or portion thereof, and that the authorization does not relieve the State of responsibility under the Act for carrying out the plan or portion thereof.

60.27 Actions by the Administrator.

(a) The Administrator may, whenever he determines necessary, extend the period for submission of any plan or plan revision or portion thereof.

(b) After receipt of a plan or plan revision, the Administrator will propose the plan or revision for approval or disapproval. The Administrator will, within four months after the date required for submission of a plan or plan revision, approve or disapprove such plan or revision or each portion thereof.

(c) The Administrator will, after consideration of any State hearing record, promptly prepare and publish proposed regulations setting forth a plan, or portion thereof, for a State if:

(1) The State fails to submit a plan within the time prescribed.

(2) The State fails to submit a plan revision required by Section 60.23(a)(2) within the time prescribed; or

(3) The Administrator disapproves the State plan or plan revision or any portion thereof, as unsatisfactory because the requirements of this subpart have not been met.

(d) The Administrator will, within six months after the date required for submission of a plan or plan revision, promulgate the regulations proposed under paragraph (c) of this section with such modifications as may be appropriate unless, prior to such promulgation, the State has adopted and submitted a plan or plan revision which the Administrator determines to be approvable.

(e)(1) Except as provided in paragraph (e)(2) of this section, regulations proposed and promulgated by the Administrator under this section will prescribe emission standards of the same stringency as the corresponding emission guideline(s) specified in the final guideline document published under Section 60.22(a) and will require final compliance with such standards as expeditiously as practicable but no later than the times specified in the guideline document.

(2) Upon application by the owner or operator of a designated facility to which regulations proposed and promulgated under this section will apply, the Administrator may provide for the

application of less stringent emission standards or longer compliance schedules than those otherwise required by this section in accordance with the criteria specified in Section 60.24(f).

(f) If a State failed to hold a public hearing as required by Section 60.23(c), the Administrator will provide opportunity for a hearing within the State prior to promulgation of a plan under paragraph (d) of this section.

60.28 Plan revisions by the State.

(a) Plan revisions which have the effect of delaying compliance with applicable emission standards or increments of progress or of establishing less stringent emission standards shall be submitted to the Administrator within 60 days after adoption in accordance with the procedures and requirements applicable to development and submission of the original plan.

(b) More stringent emission standards, or orders which have the effect of accelerating compliance, may be submitted to the Administrator as plan revisions in accordance with the procedures and requirements applicable to development and submission of the original plan.

(c) A revision of a plan, or any portion thereof, shall not be considered part of an applicable plan until approved by the Administrator in accordance with this subpart.

60.29 Plan revisions by the Administrator.

After notice and opportunity for public hearing in each affected State, the Administrator may revise any provision of an applicable plan if:

(a) The provision was promulgated by the Administrator, and

(b) The plan, as revised, will be consistent with the Act and with the requirements of this subpart.

Appendix M

40 CFR 60 Subparts Ce (EG) and Ec (NSPS)

M1 40 CFR 60 Subpart Ce
M2 40 CFR 60 Subpart Ec

Appendix M1

40 CFR 60 Subpart Ce

APPENDIX M1--40 CFR 60 SUBPART Ce

Part 60, chapter I, title 40 of the Code of Federal Regulations is amended as follows:
PART 60 - STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401, 7411, 7414, 7416, 7429, and 7601.

2. Section 60.17 of Subpart A of part 60 is amended by adding new paragraphs (i) and (j) to read as follows:

§ 60.17 Incorporation by reference.

*****

(i) The following material is incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This material is available for purchase from the American Hospital Association (AHA) Service, Inc., Post Office Box 92683, Chicago, Illinois 60675-2683. You may inspect a copy at EPA's Air and Radiation Docket and Information Center (Docket A-91-61, Item IV-J-124), Room M-1500, 401 M Street SW, Washington, DC or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

(1) An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities. American Society for Health Care Environmental Services of the American Hospital Association. Chicago, Illinois. 1993. AHA Catalog No. 057007. ISBN 0-87258-673-5. IBR approved for § 60.35e and § 60.55c.

(j) The following material is incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This material is available for purchase from the National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22161. You may inspect a copy at EPA's Air and Radiation Docket and Information Center (Docket A-91-61, Item IV-J-125), Room M-1500, 401 M Street SW, Washington, DC or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

(1) OMB Bulletin No. 93-17: Revised Statistical Definitions for Metropolitan Areas. Office of Management and Budget, June 30, 1993. NTIS No. PB 93-192-664. IBR approved for § 60.31e.

*****

3 Section 60.30 of Subpart C of part 60 is amended by adding a new paragraph (e) to read as follows:

§ 60.30 Scope.

*****

(e) Subpart Ce--Hospital/Medical/Infectious Waste Incinerators

*****

4. Part 60 is amended by adding a new subpart Ce to read as follows:

Subpart Ce--Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators

Sec.

60.30e Scope.

60.31e Definitions.

60.32e Designated facilities.

60.33e Emission guidelines.
60.34e Operator training and qualification guidelines.
60.35e Waste management guidelines.
60.36e Inspection guidelines.
60.37e Compliance, performance testing, and monitoring guidelines.
60.38e Reporting and recordkeeping guidelines.
60.39e Compliance times.

Subpart Ce--Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Wa Incinerators

§ 60.30e Scope.

This subpart contains emission guidelines and compliance times for the control of cert designated pollutants from hospital/medical/infectious waste incinerator(s) (HMIWI) in accordance with sections 111 and 129 of the Clean Air Act and Subpart B of this part. The provisions in these emission guidelines supersede the provisions of § 60.24(f) of Subpart B of this part.

§ 60.31e Definitions.

Terms used but not defined in this subpart have the meaning given them in the Clean Act and in subparts A, B, and Ec of this part.

Standard Metropolitan Statistical Area or SMSA means any areas listed in OMB Bull No. 93-17 entitled "Revised Statistical Definitions for Metropolitan Areas" dated June 30, 19 (incorporated by reference, see § 60.17).

§ 60.32e Designated facilities.

(a) Except as provided in paragraphs (b) through (h) of this section, the designated facility to which the guidelines apply is each individual HMIWI for which construction was commenced on or before June 20, 1996.

(b) A combustor is not subject to this subpart during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in § 60.51c) i burned, provided the owner or operator of the combustor:

(1) Notifies the Administrator of an exemption claim; and

(2) Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is burned

(c) Any co-fired combustor (defined in § 60.51c) is not subject to this subpart if the owner or operator of the co-fired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels and/or wastes to be combusted; and

(3) Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted the co-fired combustor.

(d) Any combustor required to have a permit under Section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(e) Any combustor which meets the applicability requirements under Subpart Cb, Ea Eb of this part (standards or guidelines for certain municipal waste combustors) is not subjec this subpart.

(f) Any pyrolysis unit (defined in § 60.51c) is not subject to this subpart.

(g) Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this subpart.

(h) Physical or operational changes made to an existing HMIWI unit solely for the purpose of complying with emission guidelines under this subpart are not considered a modification and do not result in an existing HMIWI unit becoming subject to the provisions of Subpart Ec (see § 60.50c).

(i) Beginning 36 months after the date of promulgation of this subpart, or on the effective date of an EPA approved operating permit program under Clean Air Act title V and the implementing regulations under 40 CFR part 70 in the State in which the unit is located, whichever date is later, designated facilities subject to this subpart shall operate pursuant to a permit issued under the EPA-approved operating permit program.

§ 60.33e Emission guidelines.

(a) For approval, a State plan shall include the requirements for emission limits at least as protective as those requirements listed in Table 1 of this subpart, except as provided for in paragraph (b) of this section.

(b) For approval, a State plan shall include the requirements for emission limits at least as protective as those requirements listed in Table 2 of this subpart for any small HMIWI which is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area (defined in § 60.31e) and which burns less than 2,000 pounds per week of hospital waste and medical/infectious waste. The 2,000 lb/week limitation does not apply during performance tests.

(c) For approval, a State plan shall include the requirements for stack opacity at least as protective as § 60.52c(b) of Subpart Ec of this part.

§ 60.34e Operator training and qualification guidelines.

For approval, a State plan shall include the requirements for operator training and qualification at least as protective as those requirements listed in § 60.53c of Subpart Ec of this part. The State plan shall require compliance with these requirements according to the schedule specified in § 60.39e(e).

§ 60.35e Waste management guidelines.

For approval, a State plan shall include the requirements for a waste management plan at least as protective as those requirements listed in § 60.55c of Subpart Ec of this part.

§ 60 36e Inspection guidelines.

(a) For approval, a State plan shall require that each small HMIWI subject to the emission limits under § 60.33e(b) undergo an initial equipment inspection that is at least as protective as the following within 1 year following approval of the State plan:

(1) At a minimum, an inspection shall include the following:

(i) Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation; clean pilot flame sensor, as necessary;

(ii) Ensure proper adjustment of primary and secondary chamber combustion air, and adjust as necessary;

(iii) Inspect hinges and door latches, and lubricate as necessary;

(iv) Inspect dampers, fans, and blowers for proper operation;

(v) Inspect HMIWI door and door gaskets for proper sealing;

(vi) Inspect motors for proper operation;

(vii) Inspect primary chamber refractory lining; clean and repair/replace lining as necessary;

(viii) Inspect incinerator shell for corrosion and/or hot spots;

(ix) Inspect secondary/tertiary chamber and stack, clean as necessary;

(x) Inspect mechanical loader, including limit switches, for proper operation, if applicable;

(xi) Visually inspect waste bed (grates), and repair/seal, as appropriate;

(xii) For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments;

(xiii) Inspect air pollution control device(s) for proper operation, if applicable;

(xiv) Inspect waste heat boiler systems to ensure proper operation, if applicable;

(xv) Inspect bypass stack components;

(xvi) Ensure proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment; and

(xvii) Generally observe that the equipment is maintained in good operating condition.

(2) Within 10 operating days following an equipment inspection all necessary repairs shall be completed unless the owner or operator obtains written approval from the State agency establishing a date whereby all necessary repairs of the designated facility shall be completed.

(b) For approval, a State plan shall require that each small HMIWI subject to the emission limits under § 60.33e(b) undergo an equipment inspection annually (no more than 12 months following the previous annual equipment inspection), as outlined in paragraphs (a)(1) and (a)(2) of this section.

§ 60.37e Compliance, performance testing, and monitoring guidelines.

(a) Except as provided in paragraph (b) of this section, for approval, a State plan shall include the requirements for compliance and performance testing listed in § 60.56c of Subpart Ec of this part, excluding the fugitive emissions testing requirements under § 60.56c(b)(12) and § 60.56c(c)(3).

(b) For approval, a State plan shall require any small HMIWI subject to the emission limits under § 60.33e(b) to meet the following compliance and performance testing requirements

(1) Conduct the performance testing requirements in § 60.56c(a), (b)(1) through (b)(9), (b)(11) (Hg only), and (c)(1) of Subpart Ec of this part. The 2,000 lb/week limitation under § 60.33e(b) does not apply during performance tests.

(2) Establish maximum charge rate and minimum secondary chamber temperature as site-specific operating parameters during the initial performance test to determine compliance with applicable emission limits.

(3) Following the date on which the initial performance test is completed or is required t be completed under § 60.8, whichever date comes first, ensure that the designated facility does not operate above the maximum charge rate or below the minimum secondary chamber temperature measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times except during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during performance tests. Operation above the maximum charge rate or below the minimum secondary chamber temperature shall constitute a violation of the established operating parameter(s).

(4) Except as provided in paragraph (b)(5) of this section, operation of the designated facility above the maximum charge rate and below the minimum secondary chamber temperatur

(each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the PM, CO, and dioxin/furan emission limits.

(5) The owner or operator of a designated facility may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s) to demonstrate that the designated facility is not in violation of the applicable emission limit(s). Repeat performance tests conducted pursuant to this paragraph must be conducted using the identical operating parameters that indicated a violation under paragraph (b)(4) of this section.

(c) For approval, a State plan shall include the requirements for monitoring listed in § 60.57c of Subpart Ec of this part, except as provided for under paragraph (d) of this section.

(d) For approval, a State plan shall include requirements for any small HMIWI subject to the emission limits under § 60.33e(b) to meet the following monitoring requirements:

(1) Install, calibrate (to manufacturers' specifications), maintain, and operate a device for measuring and recording the temperature of the secondary chamber on a continuous basis, the output of which shall be recorded, at a minimum, once every minute throughout operation.

(2) Install, calibrate (to manufacturers' specifications), maintain, and operate a device which automatically measures and records the date, time, and weight of each charge fed into the HMIWI.

(3) The owner or operator of a designated facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day and for 90 percent of the operating hours per calendar quarter that the designated facility is combusting hospital waste and/or medical/infectious waste.

§ 60.38e Reporting and recordkeeping guidelines.

(a) For approval, a State plan shall include the reporting and recordkeeping requirements listed in § 60.58c(b), (c), (d), (e), and (f) of Subpart Ec of this part, excluding § 60.58c(b)(2)(ii) (fugitive emissions) § 60.58c(b)(7) (siting).

(b) For approval, a State plan shall require the owner or operator of each small HMIWI subject to the emission limits under § 60.33e(b) to:

(1) Maintain records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the State regulatory agency; and

(2) Submit an annual report containing information recorded under paragraph (b)(1) of this section no later than 60 days following the year in which data were collected. Subsequent reports shall be sent no later than 12 calendar months following the previous report (once the unit is subject to permitting requirements under Title V of the Act, the owner or operator must submit these reports semiannually). The report shall be signed by the facilities manager.

§ 60.39e Compliance times.

(a) Not later than September 15, 1998, each State in which a designated facility is operating shall submit to the Administrator a plan to implement and enforce the emission guidelines.

(b) Except as provided in paragraphs (c) and (d) of this section, State plans shall provide that designated facilities comply with all requirements of the State plan on or before the date 1 year after EPA approval of the State plan, regardless of whether a designated facility is identified in the State plan inventory required by § 60.25(a) of Subpart B of this part.

(c) State plans that specify measurable and enforceable incremental steps of progress towards compliance for designated facilities planning to install the necessary air pollution control

equipment may allow compliance on or before the date 3 years after EPA approval of the State plan (but not later than the date 5 years after the date of promulgation of this subpart). Suggested measurable and enforceable activities to be included in State plans are:

(1) Date for submitting a petition for site specific operating parameters under § 60.56c(i) of Subpart Ec of this part.

(2) Date for obtaining services of an architectural and engineering firm regarding the air pollution control device(s);

(3) Date for obtaining design drawings of the air pollution control device(s);

(4) Date for ordering the air pollution control device(s);

(5) Date for obtaining the major components of the air pollution control device(s);

(6) Date for initiation of site preparation for installation of the air pollution control device(s);

(7) Date for initiation of installation of the air pollution control device(s);

(8) Date for initial startup of the air pollution control device(s); and

(9) Date for initial compliance test(s) of the air pollution control device(s).

(d) State plans that include provisions allowing designated facilities to petition the State for extensions beyond the compliance times required in paragraph (b) of this section shall:

(1) Require that the designated facility requesting an extension submit the following information in time to allow the State adequate time to grant or deny the extension within 1 year after EPA approval of the State plan:

(i) Documentation of the analyses undertaken to support the need for an extension, including an explanation of why up to 3 years after EPA approval of the State plan is sufficient time to comply with the State plan while 1 year after EPA approval of the State plan is not sufficient. The documentation shall also include an evaluation of the option to transport the waste offsite to a commercial medical waste treatment and disposal facility on a temporary or permanent basis; and

(ii) Documentation of measurable and enforceable incremental steps of progress to be taken towards compliance with the emission guidelines.

(2) Include procedures for granting or denying the extension; and

(3) If an extension is granted, require compliance with the emission guidelines on or before the date 3 years after EPA approval of the State plan (but not later than the date 5 years after the date of promulgation of this subpart).

(e) For approval, a State plan shall require compliance with §60.34e--Operator training and qualification guidelines and §60.36e--Inspection guidelines by the date 1 year after EPA approval of a State plan.

(f) The Administrator shall develop, implement, and enforce a plan for existing HMIWI located in any State that has not submitted an approvable plan within 2 years after the date of promulgation of this subpart. Such plans shall ensure that each designated facility is in compliance with the provisions of this subpart no later than 5 years after the date of promulgatio of this subpart.

Appendix M2

40 CFR 60 Subpart Ec

5. Part 60 is amended by adding a new Subpart Ec to read as follows:

Subpart Ec--Standards of Performance for Hospital/Medical/ Infectious Waste Incinerators for which construction is commenced after June 20, 1996.

Subpart Ec--Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for which construction is commenced after June 20, 1996.

§ 60.50c Applicability and delegation of authority.

(a) Except as provided in paragraphs (b) through (h) of this section, the affected facility to which this subpart applies is each individual hospital/medical/infectious waste incinerator (HMIWI) for which construction is commenced after June 20, 1996 or for which modification is commenced after March 16, 1998.

(b) A combustor is not subject to this subpart during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in § 60.51c) is burned, provided the owner or operator of the combustor:

(1) Notifies the Administrator of an exemption claim; and

(2) Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactivewaste and/or chemotherapeutic waste is burned.

(c) Any co-fired combustor (defined in § 60.51c) is not subject to this subpart if the owner or operator of the co-fired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides an estimate of the relative amounts of hospital waste, medical/infectious waste, and other fuels and wastes to be combusted, and

(3) Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

(d) Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(e) Any combustor which meets the applicability requirements under Subpart Cb, Ea, or Eb of this part (standards or guidelines for certain municipal waste combustors) is not subject to this subpart.

(f) Any pyrolysis unit (defined in § 60.51c) is not subject to this subpart.

(g) Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this subpart.

(h) Physical or operational changes made to an existing HMIWI solely for the purpose of complying with emission guidelines under Subpart Ce are not considered a modification and do not result in an existing HMIWI becoming subject to this subpart.

(i) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State:

(1) The requirements of § 60.56c(i) establishing operating parameters when using controls other than those listed in § 60.56c(d).

(2) Alternative methods of demonstrating compliance under § 60.8.

(j) Affected facilities subject to this subpart are not subject to the requirements of 40 CFR part 64.

(k) The requirements of this subpart shall become effective March 16, 1998.

(l) Beginning 36 months after the date of promulgation of this subpart, or on the effectiv date of an EPA-approved operating permit program under Clean Air Act title V and the implementing regulations under 40 CFR part 70 in the State in which the unit is located, whichever date is later, affected facilities subject to this subpart shall operate pursuant to a permi issued under the EPA approved State operating permit program.

§ 60.51c Definitions.

Batch HMIWI means an HMIWI that is designed such that neither waste charging nor as removal can occur during combustion.

Biologicals means preparations made from living organisms and their products, includin vaccines, cultures, etc., intended for use in diagnosing, immunizing, or treating humans or animals or in research pertaining thereto.

Blood Products means any product derived from human blood, including but not limited to blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon, etc.

Body Fluids means liquid emanating or derived from humans and limited to blood; dialysate; amniotic, cerebrospinal, synovial, pleural, peritoneal and pericardial fluids; and seme and vaginal secretions.

Bypass stack means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cell

Co-fired combustor means a unit combusting hospital waste and/or medical/infectious waste with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceabl requirement limiting the unit to combusting a fuel feed stream, 10 percent or less of the weight which is comprised, in aggregate, of hospital waste and medical/infectious waste as measured o a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered "other" wastes when calculating the percentage of hospital waste and medical/infectious waste combusted.

Continuous emission monitoring system or CEMS means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

Continuous HMIWI means an HMIWI that is designed to allow waste charging and ash removal during combustion.

Dioxins/furans means the combined emissions of tetra- through octa-chlorinated dibenz para-dioxins and dibenzofurans, as measured by EPA Reference Method 23.

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize a gases in the HMIWI exhaust stream forming a dry powder material.

Fabric filter or baghouse means an add-on air pollution control system that removes particulate matter (PM) and nonvaporous metals emissions by passing flue gas through filter bags.

Facilities manager means the individual in charge of purchasing, maintaining, and operating the HMIWI or the owner's or operator's representative responsible for the management of the HMIWI. Alternative titles may include director of facilities or vice president of support services.

High-air phase means the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures.

Hospital means any facility which has an organized medical staff, maintains at least six inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human inpatients who are not related and who stay on average in excess of 24 hours per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision.

Hospital/medical/infectious waste incinerator or HMIWI or HMIWI unit means any device that combusts any amount of hospital waste and/or medical/infectious waste.

Hospital/medical/infectious waste incinerator operator or HMIWI operator means any person who operates, controls or supervises the day-to-day operation of an HMIWI.

Hospital waste means discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

Infectious agent means any organism (such as a virus or bacteria) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans.

Intermittent HMIWI means an HMIWI that is designed to allow waste charging, but not ash removal, during combustion.

Large HMIWI means:

(1) Except as provided in (2),

(i) An HMIWI whose maximum design waste burning capacity is more than 500 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is more than 500 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day.

(2) The following are not large HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 500 pounds per hour; or

(ii) A batch HMIWI whose maximum charge rate is less than or equal to 4,000 pounds per day.

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or by-product material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions. During periods of malfunction the operator shall operate within established parameters as much as possible, and monitoring of all applicable operating parameters shall continue until all waste has been combusted or until the malfunction ceases, whichever comes first.

Maximum charge rate means:

(1) For continuous and intermittent HMIWI, 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(2) For batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

Maximum design waste burning capacity means:

(1) For intermittent and continuous HMIWI,

$$C = P_V \times 15{,}000/8{,}500$$

where:

C = HMIWI capacity, lb/hr
P_V = primary chamber volume, ft^3
15,000 = primary chamber heat release rate factor, $Btu/ft^3/hr$
8,500 = standard waste heating value, Btu/lb;

(2) For batch HMIWI,

$$C = P_V \times 4.5/8$$

where:

C = HMIWI capacity, lb/hr
P_V = primary chamber volume, ft^3
4.5 = waste density, lb/ft^3
8 = typical hours of operation of a batch HMIWI, hours.

Maximum fabric filter inlet temperature means 110 percent of the lowest 3-hour average temperature at the inlet to the fabric filter (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit.

Maximum flue gas temperature means 110 percent of the lowest 3-hour average temperature at the outlet from the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the mercury (Hg) emission limit.

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed below:

(1) Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.

(2) Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.

(3) Human blood and blood products including:

(i) Liquid waste human blood;

(ii) Products of blood;

(iii) Items saturated and/or dripping with human blood; or

(iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also include in this category.

(4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

(5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.

(6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

(7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in § 261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in § 261.4(a)(1) of this chapter.

Medium HMIWI means:

(1) Except as provided in (2).

(i) An HMIWI whose maximum design waste burning capacity is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day but less than or equal to 4,000 pounds per day.

(2) The following are not medium HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour or more than 500 pounds per hour; or

(ii) A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day or less than or equal to 1,600 pounds per day.

Minimum dioxin/furan sorbent flow rate means 90 percent of the highest 3-hour average dioxin/furan sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit.

Minimum Hg sorbent flow rate means 90 percent of the highest 3-hour average Hg sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the Hg emission limit.

Minimum hydrogen chloride (HCl) sorbent flow rate means 90 percent of the highest 3-hour average HCl sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the HCl emission limit.

Minimum horsepower or amperage means 90 percent of the highest 3-hour average horsepower or amperage to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the applicable emission limits.

Minimum pressure drop across the wet scrubber means 90 percent of the highest 3-hour average pressure drop across the wet scrubber PM control device (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM emission limit.

Minimum scrubber liquor flow rate means 90 percent of the highest 3-hour average liquor flow rate at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with all applicable emission limits.

Minimum scrubber liquor pH means 90 percent of the highest 3-hour average liquor pH at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the HCl emission limit.

Minimum secondary chamber temperature means 90 percent of the highest 3-hour average secondary chamber temperature (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM, CO, or dioxin/furan emission limits.

Modification or Modified HMIWI means any change to an HMIWI unit after the effective date of these standards such that:

(1) The cumulative costs of the modifications, over the life of the unit, exceed 50 per centum of the original cost of the construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs, or

(2) The change involves a physical change in or change in the method of operation of the unit which increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111.

Operating day means a 24-hour period between 12:00 midnight and the following midnight during which any amount of hospital waste or medical/infectious waste is combusted at any time in the HMIWI.

Operation means the period during which waste is combusted in the incinerator excluding periods of startup or shutdown.

Particulate matter or PM means the total particulate matter emitted from an HMIWI as measured by EPA Reference Method 5 or EPA Reference Method 29.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Primary chamber means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.

Pyrolysis means the endothermic gasification of hospital waste and/or medical/infectious waste using external energy.

Secondary chamber means a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed.

Shutdown means the period of time after all waste has been combusted in the primary chamber. For continuous HMIWI, shutdown shall commence no less than 2 hours after the last charge to the incinerator. For intermittent HMIWI, shutdown shall commence no less than 4 hours after the last charge to the incinerator. For batch HMIWI, shutdown shall commence no less than 5 hours after the high-air phase of combustion has been completed.

Small HMIWI means:

(1) Except as provided in (2),

(i) An HMIWI whose maximum design waste burning capacity is less than or equal to 200 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is less than or equal to 1,600 pounds per day.

(2) The following are not small HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour;

(ii) A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day.

Standard conditions means a temperature of 20°C and a pressure of 101.3 kilopascals.

Startup means the period of time between the activation of the system and the first charge to the unit. For batch HMIWI, startup means the period of time between activation of the system and ignition of the waste.

Wet scrubber means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

§ 60.52c Emission limits.

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain stack emissions in excess of the limits presented in Table 1.

(b) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from the stack of that affected facility any gases that exhibit greater than 10 percent opacity (6-minute block average).

(c) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility utilizing a large HMIWI shall cause to be discharged into the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9 minutes per 3-hour period), as determined by EPA Reference Method 22, except as provided in paragraphs (d) and (e) of this section.

(d) The emission limit specified in paragraph (c) of this section does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the

TABLE 1. EMISSION LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits		
		HMIWI size		
		Small	Medium	Large
Particulate matter	milligrams per dry standard cubic meter (grains per dry standard cubic foot)	69 (0.03)	34 (0.015)	34 (0.015)
Carbon monoxide	parts per million by volume	40	40	40
Dioxins/furans	nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter total dioxins/furans TEQ (grains per billion dry standard cubic feet)	125 (55) or 2.3 (1.0)	25 (11) or 0.6 (0.26)	25 (11) or 0.6 (0.26)
Hydrogen chloride	parts per million by volume or percent reduction	15 or 99%	15 or 99%	15 or 99%
Sulfur dioxide	parts per million by volume	55	55	55
Nitrogen oxides	parts per million by volume	250	250	250
Lead	milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	1.2 (0.52) or 70%	0.07 (0.03) or 98%	0.07 (0.03) or 98%
Cadmium	milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	0.16 (0.07) or 65%	0.04 (0.02) or 90%	0.04 (0.02) or 90%
Mercury	milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	0.55 (0.24) or 85%	0.55 (0.24) or 85%	0.55 (0.24) or 85%

emission limit does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.

(e) The provisions specified in paragraph (c) of this section do not apply during maintenance and repair of ash conveying systems. Maintenance and/or repair shall not exceed operating days per calendar quarter unless the owner or operator obtains written approval from the State agency establishing a date whereby all necessary maintenance and repairs of ash conveying systems shall be completed.

§ 60.53c Operator training and qualification requirements.

(a) No owner or operator of an affected facility shall allow the affected facility to opera at any time unless a fully trained and qualified HMIWI operator is accessible, either at the facili or available within 1 hour. The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.

(b) Operator training and qualification shall be obtained through a State-approved program or by completing the requirements included in paragraphs (c) through (g) of this sectic

(c) Training shall be obtained by completing an HMIWI operator training course that includes, at a minimum, the following provisions:

(1) 24 hours of training on the following subjects:

(i) Environmental concerns, including pathogen destruction and types of emissions;

(ii) Basic combustion principles, including products of combustion;

(iii) Operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;

(iv) Combustion controls and monitoring;

(v) Operation of air pollution control equipment and factors affecting performance (if applicable);

(vi) Methods to monitor pollutants (continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration procedures (where applicable);

(vii) Inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems;

(viii) Actions to correct malfunctions or conditions that may lead to malfunction;

(ix) Bottom and fly ash characteristics and handling procedures;

(x) Applicable Federal, State, and local regulations;

(xi) Work safety procedures;

(xii) Pre-startup inspections; and

(xiii) Recordkeeping requirements.

(2) An examination designed and administered by the instructor.

(3) Reference material distributed to the attendees covering the course topics.

(d) Qualification shall be obtained by:

(1) Completion of a training course that satisfies the criteria under paragraph (c) of this section; and

(2) Either 6 months experience as an HMIWI operator, 6 months experience as a direct supervisor of an HMIWI operator, or completion of at least two burn cycles under the observation of two qualified HMIWI operators.

(e) Qualification is valid from the date on which the examination is passed or the completion of the required experience, whichever is later.

(f) To maintain qualification, the trained and qualified HMIWI operator shall complete and pass an annual review or refresher course of at least 4 hours covering, at a minimum, the following:

(1) Update of regulations;

(2) Incinerator operation, including startup and shutdown procedures;

(3) Inspection and maintenance;

(4) Responses to malfunctions or conditions that may lead to malfunction; and

(5) Discussion of operating problems encountered by attendees.

(g) A lapsed qualification shall be renewed by one of the following methods:

(1) For a lapse of less than 3 years, the HMIWI operator shall complete and pass a standard annual refresher course described in paragraph (f) of this section.

(2) For a lapse of 3 years or more, the HMIWI operator shall complete and pass a training course with the minimum criteria described in paragraph (c) of this section.

(h) The owner or operator of an affected facility shall maintain documentation at the facility that address the following:

(1) Summary of the applicable standards under this subpart;

(2) Description of basic combustion theory applicable to an HMIWI;

(3) Procedures for receiving, handling, and charging waste;

(4) HMIWI startup, shutdown, and malfunction procedures;

(5) Procedures for maintaining proper combustion air supply levels;

(6) Procedures for operating the HMIWI and associated air pollution control systems within the standards established under this subpart;

(7) Procedures for responding to periodic malfunction or conditions that may lead to malfunction;

(8) Procedures for monitoring HMIWI emissions;

(9) Reporting and recordkeeping procedures; and

(10) Procedures for handling ash.

(i) The owner or operator of an affected facility shall establish a program for reviewing the information listed in paragraph (h) of this section annually with each HMIWI operator (defined in § 60.51c).

(1) The initial review of the information listed in paragraph (h) of this section shall be conducted within 6 months after the effective date of this subpart or prior to assumption of responsibilities affecting HMIWI operation, whichever date is later.

(2) Subsequent reviews of the information listed in paragraph (h) of this section shall be conducted annually.

(j) The information listed in paragraph (h) of this section shall be kept in a readily accessible location for all HMIWI operators. This information, along with records of training shall be available for inspection by the EPA or its delegated enforcement agent upon request.

§ 60.54c Siting requirements.

(a) The owner or operator of an affected facility for which construction is commenced after September 15, 1997 shall prepare an analysis of the impacts of the affected facility. The analysis shall consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, the analysis may consider costs, energy impacts, non-air environmental impacts, or any other factors related to the practicability of the alternatives.

(b) Analyses of facility impacts prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, as long as they include the consideration of air pollution control alternatives specified in paragraph (a) of this section

(c) The owner or operator of the affected facility shall complete and submit the siting requirements of this section as required under § 60.58c(a)(1)(iii).

§ 60.55c Waste management plan.

The owner or operator of an affected facility shall prepare a waste management plan. The waste management plan shall identify both the feasibility and the approach to separate certain components of solid waste from the health care waste stream in order to reduce the amount of toxic emissions from incinerated waste. A waste management plan may include, but is not limited to, elements such as paper, cardboard, plastics, glass, battery, or metal recycling; or purchasing recycled or recyclable products. A waste management plan may include different goals or approaches for different areas or departments of the facility and need not include new waste management goals for every waste stream. It should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emission reductions expected to be achieved, and any other environmental or energy impacts they might have. The American Hospital Association publication entitled "An Ounce of Prevention: Waste Reduction

Strategies for Health Care Facilities" (incorporated by reference, see § 60.17) shall be considered in the development of the waste management plan.

§ 60.56c Compliance and performance testing.

(a) The emission limits under this subpart apply at all times except during periods of startup, shutdown, or malfunction, provided that no hospital waste or medical/infectious waste is charged to the affected facility during startup, shutdown, or malfunction.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8 to determine compliance with the emission limits using the procedures and test methods listed in paragraphs (b)(1) through (b)(12) of this section. The use of the bypass stack during a performance test shall invalidate the performance test.

(1) All performance tests shall consist of a minimum of three test runs conducted under representative operating conditions.

(2) The minimum sample time shall be 1 hour per test run unless otherwise indicated.

(3) EPA Reference Method 1 of appendix A of this part shall be used to select the sampling location and number of traverse points.

(4) EPA Reference Method 3 or 3A of appendix A of this part shall be used for gas composition analysis, including measurement of oxygen concentration. EPA Reference Method 3 or 3A of appendix A of this part shall be used simultaneously with each reference method.

(5) The pollutant concentrations shall be adjusted to 7 percent oxygen using the following equation:

$$C_{adj} = C_{meas}\,(20.9-7)/(20.9-\%O_2)$$

where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen;
C_{meas} = pollutant concentration measured on a dry basis
(20.9-7) = 20.9 percent oxygen - 7 percent oxygen (defined oxygen correction basis);
20.9 = oxygen concentration in air, percent; and
$\%O_2$ = oxygen concentration measured on a dry basis, percent.

(6) EPA Reference Method 5 or 29 of appendix A of this part shall be used to measure the particulate matter emissions.

(7) EPA Reference Method 9 of appendix A of this part shall be used to measure stack opacity

(8) EPA Reference Method 10 or 10B of appendix A of this part shall be used to measure the CO emissions.

(9) EPA Reference Method 23 of appendix A of this part shall be used to measure total dioxin/furan emissions. The minimum sample time shall be 4 hours per test run. If the affected facility has selected the toxic equivalency standards for dioxin/furans, under § 60.52c, the following procedures shall be used to determine compliance:

(i) Measure the concentration of each dioxin/furan tetra- through octa-congener emitted using EPA Reference Method 23.

(ii) For each dioxin/furan congener measured in accordance with paragraph (b)(9)(i) of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in Table 2 of this subpart.

(iii) Sum the products calculated in accordance with paragraph (b)(9)(ii) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

TABLE 2. TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.001

(10) EPA Reference Method 26 of appendix A of this part shall be used to measure HCl emissions. If the affected facility has selected the percentage reduction standards for HCl under § 60.52c, the percentage reduction in HCl emissions ($\%R_{HCl}$) is computed using the following formula

$$(\%R_{HCl}) = \left(\frac{E_i - E_o}{E_i} \right) \times 100$$

where:

$\%R_{HCl}$ = percentage reduction of HCl emissions achieved;

E_i = HCl emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis); and

E_o = HCl emission concentration measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

(11) EPA Reference Method 29 of appendix A of this part shall be used to measure Pb, Cd, and Hg emissions. If the affected facility has selected the percentage reduction standards for metals under § 60.52c, the percentage reduction in emissions ($\%R_{metal}$) is computed using the following formula:

$$(\%R_{metal}) = \left(\frac{E_i - E_o}{E_i} \right) \times 100$$

where:

$\%R_{metal}$ = percentage reduction of metal emission (Pb, Cd, or Hg) achieved;

E_i = metal emission concentration (Pb, Cd, or Hg) measured at the control device inlet, corrected to 7 percent oxygen (dry basis); and

E_o = metal emission concentration (Pb, Cd, or Hg) measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

(12) The EPA Reference Method 22 of appendix A of this part shall be used to determine compliance with the fugitive ash emission limit under § 60.52c(c). The minimum observation time shall be a series of three 1-hour observations.

(c) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility shall:

(1) Determine compliance with the opacity limit by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in paragraph (b) of this section.

(2) Determine compliance with the PM, CO, and HCl emission limits by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in paragraph (b) of this section. If all three performance tests over a 3-year period indicate compliance with the emission limit for a pollutant (PM, CO, or HCl), the owner or operator may forego a performance test for that pollutant for the subsequent 2 years. At a minimum, a performance test for PM, CO, and HCl shall be conducted every third year (no more than 36 months following the previous performance test). If a performance test conducted every third year indicates compliance with the emission limit for a pollutant (PM, CO, or HCl), the owner or operator may forego a performance test for that pollutant for an additional 2 years. If any performance test indicates noncompliance with the respective emission limit, a performance test for that pollutant shall be conducted annually until all annual performance tests over a 3-year period indicate compliance with the emission limit. The use of the bypass stack during a performance test shall invalidate the performance test.

(3) For large HMIWI, determine compliance with the visible emission limits for fugitive emissions from flyash/bottom ash storage and handling by conducting a performance test using EPA Reference Method 22 on an annual basis (no more than 12 months following the previous performance test).

(4) Facilities using a CEMS to demonstrate compliance with any of the emission limits under § 60.52c shall:

(i) Determine compliance with the appropriate emission limit(s) using a 12-hour rolling average, calculated each hour as the average of the previous 12 operating hours (not including startup, shutdown, or malfunction).

(ii) Operate all CEMS in accordance with the applicable procedures under appendices B and F of this part.

(d) The owner or operator of an affected facility equipped with a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and wet scrubber shall:

(1) Establish the appropriate maximum and minimum operating parameters, indicated in Table 3 for each control system, as site specific operating parameters during the initial performance test to determine compliance with the emission limits; and

(2) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, ensure that the affected facility does not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in Table 3 and measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times except during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during performance tests. Operation above the established maximum or below the established minimum operating parameter(s) shall constitute a violation of established operating parameter(s).

(e) Except as provided in paragraph (h) of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter:

(1) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(2) Operation of the affected facility above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

(3) Operation of the affected facility above the maximum charge rate and below the minimum HCl sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(4) Operation of the affected facility above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shal constitute a violation of the Hg emission limit.

(5) Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

(f) Except as provided in paragraph (h) of this section, for affected facilities equipped with a wet scrubber:

(1) Operation of the affected facility above the maximum charge rate and below the minimum pressure drop across the wet scrubber or below the minimum horsepower or amperage to the system (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the PM emission limit.

(2) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(3) Operation of the affected facility above the maximum charge rate, below the minimum secondary chamber temperature, and below the minimum scrubber liquor flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

TABLE 3. OPERATING PARAMETERS TO BE MONITORED AND MINIMUM MEASUREMENT AND RECORDING FREQUENCIES

Operating parameters to be monitored	Minimum frequency		Control system		
	Data measurement	Data recording	Dry scrubber followed by fabric filter	Wet scrubber	Dry scrubber followed by fabric filter and wet scrubber
Maximum operating parameters					
Maximum charge rate	continuous	1 x hour	✓	✓	✓
Maximum fabric filter inlet temperature	continuous	1 x minute	✓		✓
Maximum flue gas temperature	continuous	1 x minute		✓	✓
Minimum operating parameters					
Minimum secondary chamber temperature	continuous	1 x minute	✓	✓	✓
Minimum dioxin/furan sorbent flow rate	hourly	1 x hour	✓		✓
Minimum HCl sorbent flow rate	hourly	1 x hour	✓		✓
Minimum mercury (Hg) sorbent flow rate	hourly	1 x hour	✓		✓
Minimum pressure drop across the wet scrubber or minimum horsepower or amperage to wet scrubber	continuous	1 x minute		✓	✓
Minimum scrubber liquor flow rate	continuous	1 x minute		✓	✓
Minimum scrubber liquor pH	continuous	1 x minute		✓	✓

(4) Operation of the affected facility above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(5) Operation of the affected facility above the maximum flue gas temperature and abov the maximum charge rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the Hg emission limit.

(6) Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

(g) Except as provided in paragraph (h) of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter and a wet scrubber:

(1) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(2) Operation of the affected facility above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

(3) Operation of the affected facility above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(4) Operation of the affected facility above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) simultaneously sha constitute a violation of the Hg emission limit.

(5) Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

(h) The owner or operator of an affected facility may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s) to demonstrate that the affectec facility is not in violation of the applicable emission limit(s). Repeat performance tests conducted pursuant to this paragraph shall be conducted using the identical operating paramete that indicated a violation under paragraph (e), (f), or (g) of this section.

(i) The owner or operator of an affected facility using an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed a fabric filter and a wet scrubber to comply with the emission limits under § 60.52c shall petitic the Administrator for other site-specific operating parameters to be established during the initia performance test and continuously monitored thereafter. The owner or operator shall not condu the initial performance test until after the petition has been approved by the Administrator.

(j) The owner or operator of an affected facility may conduct a repeat performance test any time to establish new values for the operating parameters. The Administrator may request repeat performance test at any time.

§ 60.57c Monitoring requirements.

(a) The owner or operator of an affected facility shall install, calibrate (to manufacturer specifications), maintain, and operate devices (or establish methods) for monitoring the applicable maximum and minimum operating parameters listed in Table 3 such that these devic (or methods) measure and record values for these operating parameters at the frequencies indicated in Table 3 at all times except during periods of startup and shutdown.

(b) The owner or operator of an affected facility shall install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack including date, time, and duration.

(c) The owner or operator of an affected facility using something other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber to comply with the emission limits under § 60.52c shall install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor the site-specific operating parameters developed pursuant to § 60.56c(i).

(d) The owner or operator of an affected facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day and for 90 percent of the operating days per calendar quarter that the affected facility is combusting hospital waste and/or medical/infectious waste.

§ 60.58c Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility shall submit notifications, as provided by § 60.7. In addition, the owner or operator shall submit the following information:

(1) Prior to commencement of construction,

(i) A statement of intent to construct,

(ii) The anticipated date of commencement of construction, and

(iii) All documentation produced as a result of the siting requirements of § 60.54c.

(2) Prior to initial startup,

(i) The type(s) of waste to be combusted,

(ii) The maximum design waste burning capacity,

(iii) The anticipated maximum charge rate, and

(iv) If applicable, the petition for site-specific operating parameters under § 60.56c(i).

(b) The owner or operator of an affected facility shall maintain the following information (as applicable) for a period of at least 5 years:

(1) Calendar date of each record;

(2) Records of the following data:

(i) Concentrations of any pollutant listed in § 60.52c or measurements of opacity as determined by the continuous emission monitoring system (if applicable);

(ii) Results of fugitive emissions (by EPA Reference Method 22) tests, if applicable;

(iii) HMIWI charge dates, times, and weights and hourly charge rates;

(iv) Fabric filter inlet temperatures during each minute of operation, as applicable;

(v) Amount and type of dioxin/furan sorbent used during each hour of operation, as applicable;

(vi) Amount and type of Hg sorbent used during each hour of operation, as applicable;

(vii) Amount and type of HCl sorbent used during each hour of operation, as applicable;

(viii) Secondary chamber temperatures recorded during each minute of operation;

(ix) Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable;

(x) Horsepower or amperage to the wet scrubber during each minute of operation, as applicable;

(xi) Pressure drop across the wet scrubber system during each minute of operation, as applicable,

(xii) Temperature at the outlet from the wet scrubber during each minute of operation, as applicable;

(xiii) pH at the inlet to the wet scrubber during each minute of operation, as applicable,

(xiv) Records indicating use of the bypass stack, including dates, times, and durations, and

(xv) For affected facilities complying with § 60.56c(i) and § 60.57c(c), the owner or operator shall maintain all operating parameter data collected.

(3) Identification of calendar days for which data on emission rates or operating parameters specified under paragraph (b)(2) of this section have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken.

(4) Identification of calendar days, times and durations of malfunctions, a description of the malfunction and the corrective action taken.

(5) Identification of calendar days for which data on emission rates or operating parameters specified under paragraph (b)(2) of this section exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.

(6) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating parameters, as applicable.

(7) All documentation produced as a result of the siting requirements of § 60.54c;

(8) Records showing the names of HMIWI operators who have completed review of the information in § 60.53c(h) as required by § 60.53c(i), including the date of the initial review and all subsequent annual reviews;

(9) Records showing the names of the HMIWI operators who have completed the operator training requirements, including documentation of training and the dates of the training

(10) Records showing the names of the HMIWI operators who have met the criteria for qualification under § 60.53c and the dates of their qualification; and

(11) Records of calibration of any monitoring devices as required under § 60.57c(a), (b) and (c).

(c) The owner or operator of an affected facility shall submit the information specified in paragraphs (c)(1) through (c)(3) of this section no later than 60 days following the initial performance test. All reports shall be signed by the facilities manager.

(1) The initial performance test data as recorded under § 60.56c(b)(1) through (b)(12), as applicable.

(2) The values for the site-specific operating parameters established pursuant to § 60.56c(d) or (i), as applicable.

(3) The waste management plan as specified in § 60.55c.

(d) An annual report shall be submitted 1 year following the submission of the information in paragraph (c) of this section and subsequent reports shall be submitted no more than 12 months following the previous report (once the unit is subject to permitting requirement under Title V of the Clean Air Act, the owner or operator of an affected facility must submit these reports semiannually). The annual report shall include the information specified in paragraphs (d)(1) through (d)(8) of this section. All reports shall be signed by the facilities manager.

(1) The values for the site-specific operating parameters established pursuant to § 60.56c(d) or (i), as applicable.

(2) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year being reported, pursuant to § 60.56c(d) or (i), as applicable.

(3) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable for each operating parameter recorded pursuant to § 60.56c(d) or (i) for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(4) Any information recorded under paragraphs (b)(3) through (b)(5) of this section for the calendar year being reported.

(5) Any information recorded under paragraphs (b)(3) through (b)(5) of this section for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(6) If a performance test was conducted during the reporting period, the results of that test.

(7) If no exceedances or malfunctions were reported under paragraphs (b)(3) through (b)(5) of this section for the calendar year being reported, a statement that no exceedances occurred during the reporting period.

(8) Any use of the bypass stack, the duration, reason for malfunction, and corrective action taken.

(e) The owner or operator of an affected facility shall submit semiannual reports containing any information recorded under paragraphs (b)(3) through (b)(5) of this section no later than 60 days following the reporting period. The first semiannual reporting period ends 6 months following the submission of information in paragraph (c) of this section. Subsequent reports shall be submitted no later than 6 calendar months following the previous report. All reports shall be signed by the facilities manager.

(f) All records specified under paragraph (b) of this section shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the Administrator

Appendix N

Exemption Claim Forms

N1 Exemption Claim Form for Co-fired Combustors

N2 Exemption Claim Form for Incinerators Burning Only Pathological, Low-level Radioactive, and Chemotherapeutic Waste

Appendix N1

Exemption Claim Form for Co-fired Combustors

APPENDIX N1--EXEMPTION CLAIM FORM FOR COFIRED COMBUSTORS

Date*

Address*

Subject: Exemption claim form for cofired combustors.

Dear *:

This exemption claim form applies to incinerators that cofire 10 percent or less hospital waste and/or medical/infectious waste with other waste types. Facilities that burn only pathological, low-level radioactive and/or chemotherapeutic waste must complete the appropriate exemption claim form. In addition to the requirements of submitting an exemption claim, facilities must maintain records of the amounts and types of wastes combusted on a calendar quarter basis. If you choose to claim an exemption, please submit this form no later than * ,insert date 1 year after EPA approval of the State Plan>. Return this form to * <*insert head of State Air Pollution Control Agency> with a copy to * <appropriate EPA Regional office>. If you have any questions please contact x* at y*.

Sincerely,

*

*

Attachment 1 (Exemption Claim Form)
Attachment 2 (Definitions)

**

Attachment 1

EXEMPTION CLAIM
(Cofired combustors)

FACILITY INFORMATION

Facility name_____

Facility address_____
_____
_____
_____

Contact person Name: _____
Phone: _____
Fax: _____

Type of facility _____

WASTE INFORMATION

Please provide the distribution of types of wastes combusted in the incinerator each quarter (i.e., every 3 months):

___% Hospital waste and medical/infectious waste (excluding wastes marked with a * below)
___% Pathological waste, low-level radioactive waste, and chemotherapeutic waste*
___% Other waste/fuel[1]

Does the incinerator accept waste from off-site? ☐Yes ☐ No

How many pounds of waste/fuel[1] do you typically charge per hour? _____lb/hr

How many hours do you charge waste/fuel[1] into the incinerator per day? _____hr/day

How many pounds of waste/fuel[1] is burned on a quarterly basis? _____lb/quarter

Please attach an explanation of the methodology that will be used on an ongoing basis to estimate the percentages of waste types discussed above.

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[1]excluding fuels such as propane or natural gas used to maintain combustion chamber temperatures

CERTIFICATION

I am authorized to make this submission on behalf of the owners and operators of _____ and I hereby certify under penalty of law that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including possible fines and imprisonment. In addition, it is my understanding that I am not subject to a title V permit based solely on the requirements of Subpart Ce (Emission Guidelines).[2]

_____

(signature of facilities manager)

[2]Incinerators located at major sources should have already submitted a title V permit to the permitting authority.

Attachment 2

DEFINITIONS

Listed below are some definitions that you may find to be useful when completing this exemption claim form. Definitions are listed in alphabetical order.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Facilities manager means the individual in charge of purchasing, maintaining, and operating the HMIWI or the owner's or operator's representative responsible for the management of the HMIWI. Alternative titles may include director of facilities or vice president of support services.

Hospital means any facility which has an organized medical staff, maintains at least six inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human inpatients who are not related and who stay on average in excess of 24 hours per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision.

Hospital/medical/infectious waste incinerator or HMIWI or HMIWI unit means any device that combusts any amount of hospital waste and/or medical/infectious waste.

Hospital waste means discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or by-product material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed below:

(1) Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.

(2) Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.

(3) Human blood and blood products including:

(I) Liquid waste human blood;

(ii) Products of blood;

(iii) Items saturated and/or dripping with human blood; or

(iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers,

which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also include in this category.

(4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

(5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.

(6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

(7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in § 261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in § 261.4(a)(1) of this chapter.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Appendix N2

Exemption Claim Form for Incinerators Burning Only Pathological, Low-level Radioactive, and Chemotherapeutic Waste

APPENDIX N2--EXEMPTION CLAIM FORM FOR INCINERATORS BURNING ONLY PATHOLOGICAL, LOW-LEVEL RADIOACTIVE, AND CHEMOTHERAPEUTIC WASTE

Date*

*

Subject: Exemption claim form for facilities combusting only pathological, low-level radioactive chemotherapeutic waste.

Dear *:

This exemption claim form applies to incinerators that combust only pathological, low-level radioactive, and/or chemotherapeutic waste or incinerators, which during periods of operation, only combust pathological, low-level radioactive and/or chemotherapeutic waste. Facilities that burn other wastes, including but not limit to hospital waste, medical/infectious waste, or municipal waste, and requesting exemption claim must complete the exemption claim form for cofired combustors. In addition to the requirements of submitting an exemption claim, facilities must maintain records of the amounts and types of wastes combusted on a calendar quarter basis. If you choose to claim an exemption, please submit this form no later than * ,insert date 1 year after EPA approval of the State Plan>. Return this form to * <*insert head of State Air Pollution Control Agency> with a copy to * <appropriate EPA Regional office>. If you have any questions please contact x* at y*.

Sincerely,

*
*

Attachment 1 (Exemption Claim Form)
Attachment 2 (Definitions)

**

Attachment 1

EXEMPTION CLAIM

(Incinerators burning pathological waste, low-level radioactive, and chemotherapeutic waste)

FACILITY INFORMATION

Facility name _____

Facility address _____
_____
_____
_____

Contact person Name: _____
Phone: _____
Fax: _____

Type of facility _____

WASTE INFORMATION

For periods when only pathological, low-level and/or chemotherapeutic waste(s) are combusted provide the distribution of waste types combusted in the incinerator each quarter (i.e., every 3 months):

___% Pathological waste
___% Low-level radioactive waste
___% Chemotherapeutic waste

Does the incinerator accept waste from off-site? ☐Yes ☐ No

Percentage of time when only pathological, low-level, and/or chemotherapeutic waste(s) are combusted _____%

During periods when only pathological, low-level radioactive and/or chemotherapeutic waste is combusted how much do you typically charge per hour? _____lb/hr

During periods when only pathological, low-level radioactive and/or chemotherapeutic waste is combusted how many hours do you charge to the incinerator per day? _____hr/day

During periods when only pathological, low-level radioactive and/or chemotherapeutic waste is combusted how many pounds are burned on a quarterly basis? _____lb/quarter

Please attach an explanation of the methodology that will be used on an ongoing basis to determine the time periods when only pathological, low-level radioactive, and/or chemotherapeutic waste are burned.

CERTIFICATION

I am authorized to make this submission on behalf of the owners and operators of _____ and I hereby certify under penalty of law that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including possible fines and imprisonment. In addition, it is my understanding that I am not subject to a title V permit based solely on the requirements of Subpart Ce (Emission Guidelines).[2]

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(signature of facilities manager)

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