

or that exceed applicable limits, are to be submitted on a semi-annual basis. If no exceedances occur during a semi-annual period, the owner of the designated facility is to submit an annual report stating that no exceedances occurred. All reports are to be signed by the facilities manager. (See 40 CFR 60.38e and 60.58c.)

Whom can you contact for additional information?

For more information on this regulation, please call your state or local air pollution control agency or the EPA Regional Office covering your state. EPA Regional contact information can be found on the Internet, at the following address:

<http://www.epa.gov/aboutepa/index.html#regional>

Information related to this regulation and the status of State Plans is also available on the Internet, at the following address:

<http://www.epa.gov/ttn/atw/129/hmiwi/rihmiwi.html>

The information in this pamphlet is intended for general reference only; it is not a full and complete statement for the technical or legal requirements associated with the regulation. Consult the *Federal Register* for a full text of the regulation.

**Office of Air Quality Planning and Standards**

**EPA Amended Regulation  
Controlling Emissions  
From Existing Hospital/  
Medical/Infectious  
Waste Incinerators**



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**BACKGROUND**

In September 1997, the U.S. Environmental Protection Agency (EPA) issued Emission Guidelines (EG), subpart Ce of 40 CFR part 60, to control emissions of air pollutants from existing hospital/medical/infectious waste incinerators (HMIWI). The HMIWI regulations were remanded by the Court in March 1999 for further explanation by EPA regarding the approach and methodology that EPA used to develop the regulations. In the meantime, the HMIWI regulations remained in effect and were fully implemented by September 2002.

In October 2009, EPA issued amended EG that respond to the Court's remand [74 FR 51368]. The amended subpart Ce promulgates EG and compliance schedules for use by states in developing state regulations to control emissions from existing HMIWI built on or before December 1, 2008. Hospital/medical/infectious waste incinerators built after December 1, 2008 are not subject to the amended subpart Ce Guidelines; they are considered new sources and are subject to the amended subpart Ec New Source Performance Standards (NSPS). This pamphlet discusses the provisions of the EG for existing HMIWI.

Why is EPA regulating HMIWI?

Sections 111 and 129 of the Clean Air Act (CAA), as amended in 1990, direct EPA to develop EG for units combusting hospital, medical, and infectious waste. The EPA is regulating HMIWI to meet the requirements of the CAA. Consistent with Section 129, the EG establish numerical emission limits for the following nine pollutants plus opacity:

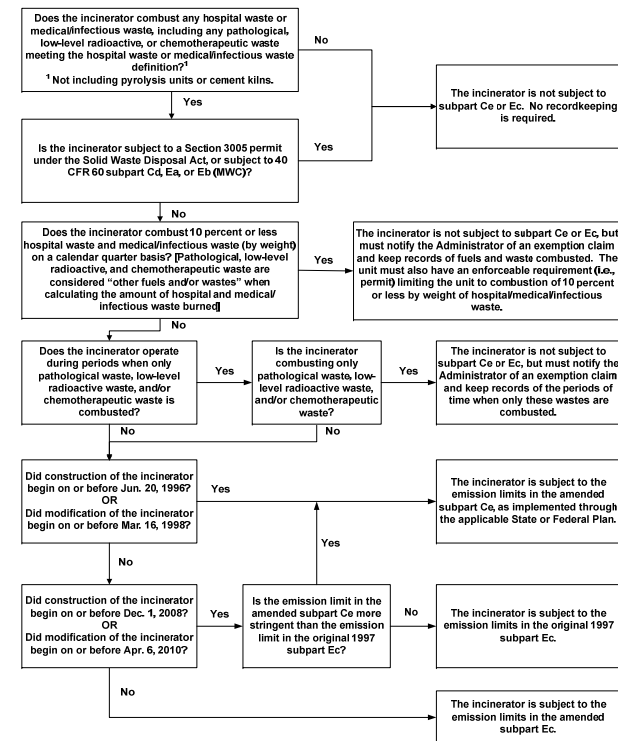
- Particulate matter (PM)
- Carbon monoxide (CO)
- Dioxins/furans (CDD/CDF)
- Hydrogen chloride (HCl)
- Sulfur dioxide (SO<sub>2</sub>)
- Nitrogen oxides (NO<sub>x</sub>)
- Lead (Pb)
- Cadmium (Cd)
- Mercury (Hg)

These pollutants can have an adverse affect on both public health and welfare.

The EG apply to units whose primary purpose is the combustion of hospital and/or medical/infectious waste. There are currently 54 existing HMIWI in the U.S. that are subject to the amended EG. The EPA estimates that full compliance with the amended EG will achieve nearly 200 tons per year of reductions in pollutant emissions.

What is an affected source?

Most sources that combust hospital waste and/or medical/infectious waste are affected sources, with the exceptions identified in the flowchart below. The specific subparts to which affected sources are subject are also identified.



How do the amended EG relate to state requirements?

If a state already has a rule for HMIWI, then that rule still applies, but it may need to be amended. States are to develop revised or new State Plans containing regulations at least as protective as the amended EG within 1 year after promulgation of the amended EG. State and local agencies may require more stringent emission limits.

How do the amended EG affect you?

The amended EG includes provisions for:

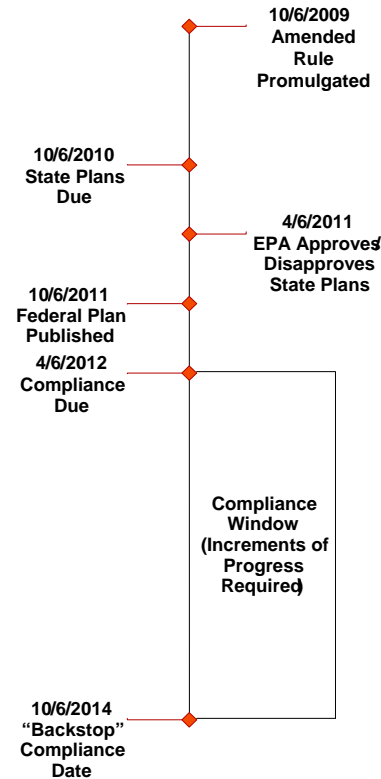
- Emission limits
- Performance testing
- Parameter monitoring
- Inspections
- Operator training
- Waste management plans
- Reporting/recordkeeping
- Title V permit

## REGULATION

**Compliance Schedule.** Revised/new State Plans implementing the provisions of the amended EG are to include one of the following two schedules:

- Full compliance with the State Plan within 1 year after EPA approval of the Plan; or
- Full compliance with the State Plan within 3 years after EPA approval of the Plan, provided the Plan includes measurable and enforceable incremental steps of progress that will be taken to comply with the Plan.

All existing HMIWI are to comply within 5 years after the promulgation date. (See 40 CFR 60.39e.) The timeline at the right illustrates the compliance schedule.



**Emission Limits.** The HMIWI source category is divided into three size subcategories based on waste burning capacity in pounds per hour (lb/hr):

- Small ( $\leq 200$  lb/hr)
- Medium ( $>200$  to  $500$  lb/hr)
- Large ( $>500$  lb/hr)

The small size subcategory is further divided into rural and non-rural subcategories. Small “rural” HMIWI are located more than 50 miles from the nearest Standard Metropolitan Statistical Area (SMSA) and burn less than 2,000 pounds of waste per week. (See 40 CFR 60.33e.)

Separate emission limits apply to each HMIWI subcategory. The table at the right presents the emission limits contained in the amended EG. The amended EG do not specify the use of any specific air pollution control device (APCD). The decision regarding how to comply with the emission limits is left to the facility owner/operator. In addition to the emission limits, the amended EG include a 6 percent opacity limit for all existing HMIWI. (See 40 CFR 60.33e, 60.52c.)

**Testing, Monitoring, and Inspections.** The amended EG direct all HMIWI to demonstrate initial compliance with the amended emission limits for the aforementioned nine pollutants and opacity. Compliance tests are to be performed using the following EPA Reference Methods:

- Method 5 (PM)
- Method 6/6C (SO<sub>2</sub>)
- Method 7/7E (NO<sub>x</sub>)
- Method 10/10B (CO)
- Method 23 (CDD/CDF)
- Method 26/26A (HCl)
- Method 29 (Pb, Cd, Hg)
- Method 9 (opacity)

(See 40 CFR 60.37e, 60.56c.)

Facilities may use results of their previous emission tests to demonstrate initial compliance as long as they certify that the previous test results are representative of current operations (e.g., waste type, charge rate, operating parameters). (See 40 CFR 60.37e.)

The amended EG direct all facilities to demonstrate annual compliance with the amended PM, CO, and HCl emission limits by conducting an annual stack test. However, if an HMIWI passes all three annual compliance tests in a 3-year period, then the HMIWI may forego 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. (See 40 CFR 60.37e, 60.56c.)

The amended EG also direct all facilities to conduct a Method 22 visible emissions test of the incinerator ash handling operations during their next performance test.

The amended EG direct facilities to monitor their HMIWI and APCD operating parameters (e.g., charge rate, temperature, sorbent flow rate, pressure drop, pH), the limits for which are established during the initial performance test. As alternatives to parameter monitoring, the amended EG also allow continuous emissions monitoring systems (CEMS) for CO, PM, HCl, and metals and continuous sampling of Hg and CDD/CDF with periodic sample analysis. (See 40 CFR 60.37e, 60.57c.)

The amended EG also direct facilities to conduct initial and annual HMIWI and APCD inspections. Initial HMIWI and APCD inspections are to be conducted within 1 year following EPA approval of the revised/new State Plan, and annual inspections are to be conducted after that point. Facilities are directed to complete any necessary repairs within 10 operating days following an inspection, unless written permission has been obtained from the state. (See 40 CFR 60.36e, 60.57c.)

**Operator Training.** Like the original 1997 EG, the amended EG specify training and qualification of HMIWI operators. Each HMIWI operator is to pass an HMIWI operator training course which is either state-approved or meets the provisions specified in the EG. Also, each facility is to develop and annually update site-specific information regarding HMIWI operation. Each employee involved with the operation of the HMIWI is to review

the operating information developed for the HMIWI. (See 40 CFR 60.34e, 60.53c.)

**Waste Management Plan.** The original 1997 EG directed facilities to develop a waste management plan that identified the feasibility and approach to separate certain components of the waste stream for recycling/reuse. The amended EG includes some new provisions (e.g., having commercial HMIWI conduct training/education programs in waste segregation for their waste generator clients and ensure that their clients prepare waste management plans). Each owner of an existing HMIWI is to submit a revised waste management plan no later than 60 days after the initial performance test. (See 40 CFR 60.35e, 60.55c.)

**Reporting and Recordkeeping.** Like the original 1997 EG, the amended EG direct owners of existing HMIWI to maintain thorough records documenting the results of the performance tests, continuous monitoring of operating parameters, inspections, compliance with the operator training and qualification requirements, and the waste management plan. These records are to be kept on file for at least 5 years. (See 40 CFR 60.38e, 60.58c.)

The amended EG also direct owners or operators to submit the results of initial and subsequent performance tests and inspections. Additionally, reports on emission rates or operating parameters that have not been obtained,

### Emission Limits for Existing HMIWI (corrected to 7 percent O<sub>2</sub>)

Pollutant	Small rural	Small	Medium	Large
PM, gr/dscf	0.038	0.029	0.020 0.015 <sup>a</sup>	0.011
CO, ppm <sub>dv</sub>	20	20	5.5	11
CDD/CDF, ng/dscm	240 total 5.1 TEQ <sup>b</sup>	16 total 0.013 TEQ <sup>b</sup>	0.85 total 0.020 TEQ <sup>b</sup>	9.3 total 0.054 TEQ <sup>b</sup>
HCl, ppm <sub>dv</sub>	810	44 15 <sup>a</sup>	7.7	6.6
SO <sub>2</sub> , ppm <sub>dv</sub>	55	4.2	4.2	9.0
NO <sub>x</sub> , ppm <sub>dv</sub>	130	190	190	140
Pb, mg/dscm	0.50	0.31	0.018	0.036
Cd, mg/dscm	0.11	0.017	0.013	0.0092
Hg, mg/dscm	0.0051	0.014	0.025	0.018

<sup>a</sup> Emission limits for those HMIWI previously subject to the original 1997 NSPS and now subject to the amended EG.

<sup>b</sup> TEQ is the 2,3,7,8-TCDD toxic equivalent determined using international toxic equivalency factors.