

## NOTICES OF FINAL RULEMAKING

The Administrative Procedure Act requires the publication of the final rules of the state's agencies. Final rules are those which have appeared in the *Register* 1st as proposed rules and have been through the formal rulemaking process including approval by the Governor's Regulatory Review Council. The Secretary of State shall publish the notice along with the Preamble and the full text in the next available issue of the *Arizona Administrative Register* after the final rules have been submitted for filing and publication.

### NOTICE OF FINAL RULEMAKING

#### TITLE 18. ENVIRONMENTAL QUALITY

#### CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY AIR POLLUTION CONTROL

#### PREAMBLE

1. **Sections Affected**

R18-2-732 R18-2-901	<b><u>Rulemaking Action</u></b> New Section Amend
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2. **The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**

Authorizing and implementing statutes: A.R.S. §§ 49-424, 49-425, and 49-426.
  
3. **The effective date of the rules:**

August 10, 1999.
  
4. **A list of all previous notices appearing in the register addressing the final rule:**

Notice of Rulemaking Docket Opening: 4 A.A.R. 1137, May 15, 1998.  
Notice of Rulemaking Docket Opening: 4 A.A.R. 1349, June 12, 1998.  
Notice of Public Information: 4 A.A.R. 4187, December 18, 1998.  
Notice of Proposed Rulemaking: 5 A.A.R. 1097, April 16, 1999.
  
5. **The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

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6. **An explanation of the rule, including the agency's reasons for initiating the rule:**
  - A. **Background for these rules**

This rule is the result of federal requirements imposed on the states by the Clean Air Act Amendments of 1990 (CAAA). Section 129 of the CAAA directed the Environmental Protection Agency (EPA) to promulgate rules regulating various categories of waste incinerators, including hospital/medical/infectious waste incinerators (HMIWI).

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In the September 15, 1997, *Federal Register*, EPA published new source performance standards (NSPS) and emission guidelines (EG) to reduce air emissions from HMIWI (62 FR 48348). These standards and guidelines are based on the CAAA requirements, EPA research, and public comment. Specifically, EPA added subpart Ec, NSPS for new HMIWI (40 CFR 60.50c, et al.), and subpart Ce, EG for existing HMIWI (40 CFR 60.30e, et al.), to 40 CFR 60. The standards and guidelines apply to units whose primary purpose is the incineration of hospital/medical/infectious waste.

The NSPS are federal requirements that apply to all new HMIWI that commence construction after June 20, 1996, or to existing HMIWI units that commence modification after March 16, 1998. States are required to adopt the standards contained in 40 CFR 60.50c, et al., for new HMIWI in their entirety (62 FR 48351). The EG are unique in that, unlike the NSPS, the guidelines are not direct federal requirements, although they require states to develop CAAA Section 111(d)/129 state plans to regulate existing HMIWI built on or before June 20, 1996. These state plans must be submitted to EPA for approval and must be at least as protective as the standards and emission limitations found in 40 CFR 60.30e, et al. The state's rule will be the legal instrument to enforce the EG and the NSPS, as described in the draft section 111(d)/129 State Plan, currently under development. The Plan will be submitted to EPA for approval before September 15, 1999.

To carry out the federal mandates, the rulemaking incorporates by reference in R18-2-901 the federal NSPS for HMIWI built after June 20, 1996, or to existing HMIWI that commence modification after March 16, 1998. R18-2-901 incorporates by reference standards specifying emission limitations, operator training and qualification, siting requirements, waste management, compliance, performance testing and monitoring, and reporting and recordkeeping. The rulemaking also implements the EG for existing HMIWI built before June 20, 1996, by creating a new section, R18-2-732. The standards and emission limitations set forth in R18-2-732 are no less stringent nor more stringent than those contained in 40 CFR 60.30e et al. R18-2-732 sets forth requirements for operator training and qualification, waste management, inspections, compliance, performance testing and monitoring, and reporting and recordkeeping.

Incorporating by reference the NSPS for new HMIWI assures the continued delegation of authority from EPA to ADEQ to enforce the federal standards. The EG requirements for existing HMIWI creates an enforceable mechanism for carrying out the federal regulations and for completing the required element of the state Plan that ADEQ will be submitting to EPA.

This rulemaking is authorized by A.R.S. § 49-425, which requires the director of ADEQ to adopt rules that are necessary and feasible to reduce the release into the atmosphere of air contaminants originating within the territorial limits of the state or any portion thereof and to adopt, modify, and amend reasonable standards for the quality of, and emissions determined to be necessary and feasible for the prevention, control and abatement of air pollution.

Because the rule is based on federal standards and guidelines, a brief description of these standards and guidelines and how they were derived is provided as follows.

The federal standards and guidelines contain numerical limitations for HMIWI for certain designated pollutants. The designated pollutants are: particulate matter (PM), opacity, sulfur dioxide (SO<sub>2</sub>), hydrogen chloride (HCl), oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), lead (Pb), cadmium (Cd), mercury (Hg), and dioxins and dibenzofurans (dioxins/furans). EPA determined that some of the pollutants being regulated are considered carcinogens and at sufficient concentrations can cause toxic effects following exposure. The CAAA required that the standards and guidelines reflect the maximum degree of reduction in emissions of air pollutants, taking into consideration the cost of achieving the emission reductions, any nonair-quality health and environmental impacts, and energy requirements that the EPA Administrator determines are achievable for a particular category of sources. This control level is referred to as the "maximum achievable control technology" or "MACT."

The CAAA also requires that standards for new sources may not be less stringent than the emissions control achieved in practice by the best controlled similar unit. This is referred to as the "MACT floor" for new HMIWI. Additionally, the CAAA provides that the emission limitations in the guidelines for existing HMIWI may not be less stringent than the average emission limitation achieved by the best performing 12% of units in the category (the "MACT floor" for existing HMIWI). Thus, 88% of the existing HMIWI in the United States must be modified to comply with the federal standards.

In formulating the regulatory options for HMIWI, EPA divided the HMIWI source category into 3 subcategories based on waste burning capacity: small ( $\leq 200$  lb/hr), medium ( $>200 \leq 500$  lb/hr) and large ( $>500$  lb/hr). A number of regulatory options were considered for each size classification. The regulatory options for the 3 selected size classifications did not specify a particular control technology; rather, they specified emission limits that facilities would be required to meet. For the most part, the final federal standards and guidelines reflect the MACT floor. In 2 instances (medium new units and small existing units), EPA set MACT at a level more stringent than the MACT floor.

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The ADEQ has identified approximately 10 HMIWI under its jurisdiction that are affected by the EG and NSPS.

**B. Specific Section-by-Section Explanation:**

R18-2-732. Standards of Performance for Existing Hospital/Medical/Infectious Waste Incinerators

The rule contains emission limits (MACT floor) for existing HMIWI. The rule also establishes the following requirements for existing HMIWI:

1. Operator training and qualification:

Complete HMIWI operator training course; qualify operators; maintain information regarding HMIWI operating procedures; maintain operator qualification by completing and passing an annual review or refresher course.

2. Waste management plans:

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.

3. Equipment Inspection:

Any rural HMIWI must undergo an initial equipment inspection within 1 year following EPA's approval of the State Plan. In addition, each rural HMIWI must undergo an equipment inspection annually.

4. Compliance and performance testing:

Conduct an initial performance test to determine compliance with the emission limits and opacity limit, and establish operating parameters. Conduct annual tests to determine compliance with the opacity limit. In addition, non-rural HMIWI must conduct annual performance tests to determine compliance with the emission limits.

5. Monitoring:

Install and maintain equipment to continuously monitor operating parameters. Record monitoring data at all times during HMIWI operation.

6. Reporting and recordkeeping:

Maintain for 5 years records of results from the initial performance test and all subsequent performance tests, operating parameters, maintenance activities; submit to ADEQ the results of the initial performance test and all subsequent performance tests, submit reports on emission rates or operating parameters that have not been recorded or that have exceeded applicable limits.

R18-2-901. Standards of Performance for New Stationary Sources

By incorporating federal new source performance standards by reference, the rule contains emission limits (MACT floor) for new HMIWI. The rule also establishes the following requirements for new HMIWI:

1. Operator training and qualification:

Complete HMIWI operator training course; qualify operators; maintain information regarding HMIWI operating procedures; maintain operator qualification by completing and passing an annual review or refresher course.

2. Siting:

Prepare a siting analysis that considers air pollution control alternatives that minimize, on a site-specific basis and to the maximum extent practicable, potential risks to public health and the environment.

3. Waste management plans:

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.

4. Compliance and performance testing:

Conduct an initial and annual performance test to determine compliance with the emission limits and opacity limit, and establish operating parameters.

5. Monitoring:

Install and maintain equipment to continuously monitor operating parameters. Record monitoring data at all times during HMIWI operation.

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6. Reporting and recordkeeping:

Maintain for 5 years records of results from the initial performance test and all subsequent performance tests, operating parameters, maintenance activities; submit to ADEQ the results of the initial performance test and all subsequent performance tests, submit reports on emission rates or operating parameters that have not been recorded or that have exceeded applicable limits.

7. **A reference to any study that the agency relied on in its evaluation of or justification for the final rule and where the public may obtain or review the study, all data underlying each study, any analysis of the study and other supporting material:**

Not applicable.

8. **A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable.

9. **The summary of the economic, small business, and consumer impact:**

A. Rule Identification and General Comments

A.A.C. Title 18; Chapter 2; Articles 7 and 9.

This rule implements federal standards and guidelines which were established to control emissions of air pollutants emitted from new and existing facilities that incinerate hospital/medical/infectious waste. New source performance standards (NSPS) will govern new incinerators and emission guidelines (EG) will govern existing incinerators. Together, NSPS and EG will control hospital incinerators and non-hospital incinerators located in a variety of health care facilities. They also will apply to incinerators operated by commercial treaters (off-site treatment and disposal companies).

Control levels for new and existing hospital/medical/infectious waste incinerators are based on either the maximum achievable control technology (MACT) floor or a MACT floor that is more stringent (62 FR 48364, 48370 - 48373). For example, the control level for existing incinerators classified as "small" is greater than the MACT floor. This means these incinerators now must achieve good combustion and be equipped with low efficiency wet scrubbers. Refer to Table 1, "Emission Levels for Facilities Incinerating Waste and National Impact Forecasts," and section 6.A. in this preamble. This rule also implements standards for fugitive fly ash and bottom ash emissions, as well as requirements for operator training and qualifying, siting, inspecting, testing (compliance and performance), monitoring, reporting and recordkeeping, and developing waste management plans.

A key point is that ADEQ is incorporating already effective federal air quality requirements into a state rule. Thus, because federal law is being implemented without change, this rulemaking imposes no additional impacts. Note that all references to 62 FR (*Federal Register*) in this EIS have a publication date of September 15, 1997.

B. Background Information

The incineration of hospital/medical/infectious waste causes the release of numerous air pollutants. These pollutants include organics, particulates, metals, acid gases, and nitrogen oxides. Some of these pollutants are of particular concern to public health. These emissions not only can cause materials damage, visibility degradation, and crop/forestry damage, but they can cause human-health effects, such as respiratory illness and damage, premature mortality and morbidity, pulmonary function changes, congestive heart failure, angina pectoris, and reproductive and development problems. Morbidity effects can be measured in increased hospital and emergency room visits, restricted activity days, lost work days, increased respiratory symptoms, and reductions in lung function (62 FR 48376 - 48377).

The national purpose of these standards and guidelines (NSPS and EG) is to protect public health by reducing exposure to toxic air emissions emitted from hospital/medical/infectious waste incinerators. The public is concerned about the volume of toxic air pollutants released by a variety of sources. Section 129 of the 1990 amendments to the Clean Air Act (CAAA) requires EPA to apply a 2-phase control approach to various categories of solid waste incinerators. Compliance standards for the 1st phase, as implemented in this rule, are intended to bring these sources to a current level of emissions control achieved by the best controlled similar facilities (62 FR 48350, 48370).

EPA analyzed impacts of NSPS and EG in terms of 3 compliance scenarios. This way, EPA could compare costs between the 3 scenarios. The 3 compliance scenarios are: (1) no switching to alternative treatment/ disposal methods (scenario A); (2) switching with waste segregation (scenario B); and (3) switching without waste segregation (scenario C). EPA concluded that scenario A is unrealistic and overstates national compliance costs. Under scenario A, all new medical waste incinerators projected to be built over the next 5 years actually would be built and all existing medical waste incinerators would retrofit with control technologies (62 FR 48365, 48372, 48376).

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EPA predicts that 64% to 78% of the approximate 2,400 existing incinerators will cease to operate (1,530 -1,844), and of the 245 new incinerators projected to be built in absence of NSPS, less than 5% to 30% would be constructed under scenarios B and C. According to these EPA scenarios, none of the small- or medium-sized incinerators would be constructed, 0% to 100% of the large-sized incinerators would be constructed, and all 10 of the commercial incinerators would be built. However, EPA believes the compliance costs associated with scenario A are overstated and unrealistic compared to what probably will happen. The basic assumption of this scenario A is that all projected incinerators would be built and all existing incinerators would install retrofit technology (62 FR 48365, 48370, 48376).

The end result anticipated by EPA is the closure of most of the incinerators, which are poorly controlled, and the halting of most of the projected construction of new incinerators in the U.S. Although EPA's objective was to adopt MACT emission levels that would fulfill requirements of the CAAA, and not promulgate rules that would result in the closure of most existing small and medium medical waste incinerators, a realistic scenario is the replacement of these poorly controlled medical waste incinerators with cost-effective options that reduce toxic emissions. EPA anticipates air pollutants to be reduced significantly from the current levels (62 FR 48366, 48370 - 48373).

The decision to switch to another treatment alternative should preclude most of the existing facilities from experiencing significant economic impacts. For example, a facility could switch to an alternative method of on-site treatment (steam autoclaving, microwaving, or other disinfection technology), contract with a commercial treater for off-site treatment/disposal, or landfill untreated waste if this option would be available. Facilities also could reduce their waste disposal costs by segregating infectious waste from noninfectious waste and recycling.

C. Affected Entities (classes of persons impacted)

Although Arizona has a variety of health care providers, such as hospitals, nursing homes, laboratories, physicians' and dentists' offices, clinics, blood banks, and facilities located in various institutions (including the armed services), whose numbers easily could be in excess of 7,000, ADEQ expects an extremely small proportion to be adversely affected by this rule (< .0015). These are the facilities, which may be public or private entities, that incinerate hospital/medical/infectious waste in small-, medium-, or large-sized incinerators. Part of the rule's impact is reduced because many facilities have already discontinued to incinerate this type of waste. However, much of the waste now is being treated in commercial incinerators in Arizona and elsewhere.

Other entities potentially affected include: political subdivisions acting as regulators (Maricopa, Pima, and Pinal Counties), commercial treaters, vendors of air pollution control devices (add-on systems), vendors of incinerators, vendors of alternative waste-treatment technologies, ADEQ (implementing agency), consumers of health care services, and the general public.

D. Probable Costs and Benefits to Facilities Incinerating Hospital/Medical/Infectious Waste

On a national level, EPA estimates compliance costs to reach \$65 million annually for the 1,025 existing small-sized incinerators. Dividing this cost by the estimated number of facilities results in an average cost of more than \$63,000. However, rather than being faced with such increases in costs, these facilities are expected to switch to an alternative means of waste treatment/disposal. Simply stated, the option of switching to an alternative means of disposal would be less than the economic impact of retrofitting. In this case, the estimated cost would range from \$6 to \$20 million. Most medium-sized incinerators are expected to switch because of potential costs. They probably would not seek to reclassify as small-sized incinerators since the emissions level for this type of incinerator is only slightly less stringent than for medium-sized incinerators. Thus, according to EPA, the majority of emissions-reduction benefits actually will come from medium-sized incinerators switching to alternative means of waste treatment/disposal. The estimated cost would range \$4 to \$30 million (62 FR 48361, 48370).

EPA also estimated an annual cost of \$59 million for scenario B (switching with waste segregation) and \$120 million for scenario C (switching without waste segregation). Additionally, EPA estimated annual costs for new facilities to be \$12.1 million for scenario B (no new large-sized facilities but 10 commercial) and \$26.2 million for scenario C. Thus, overall costs for scenarios B and C, respectively, are \$71 million and \$146 million (62 FR 48365, 48366, 48376).

According to ADEQ and other Arizona regulating agency records, permits have been issued to 8 facilities that operate small-sized incinerators (2 may qualify as rural) and 2 medium-sized incinerators. These facilities are located in Bullhead City, Douglas, Flagstaff, Florence, Ft. Huachuca, Kearny, Morenci, Prescott, and San Manuel. ADEQ estimates that if all of these facilities continued to operate, the overall impact to them potentially could be more than \$300,000 per year. No new hospital/medical/infectious waste incinerators are expected to be built in Arizona, at least in the near future.

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Most of the state's facilities may find it economically advantageous to switch to alternative means of waste treatment/disposal.<sup>1</sup> If EPA's forecasts are correct and Arizona's hospital/medical/infectious waste incinerators reflect this national closure rate, essentially all of the small-sized incinerators would stop operating, except for the 2 that may qualify as rural. Possibly, only 1 medium-sized incinerator may continue to operate. These are likely scenarios in Arizona because of the relatively high compliance costs of installing "scrubbers." Some facilities could face additional costs of rehabilitating their incinerators as well.

In addition to retrofitting these incinerators, facilities would have compliance costs for meeting other rule requirements, such as operator training/qualifying, testing (compliance/performance), inspecting, preparing waste management plans, and recordkeeping/reporting. This, of course, would add to the overall compliance costs of continuing to operate. Therefore, the actual costs of complying with this rule may be substantially less than \$300,000 due to facilities switching to other treatment/disposal options, and thereby reducing the overall economic impact of this rule.

Existing facilities that qualify as "rural" should be impacted the least because the rule does not require as stringent controls for these facilities as for facilities located in urban areas. EPA has recognized that rural facilities have fewer cost-effective options for treatment/disposal. The MACT floor for this category of incinerators, therefore, is good combustion and pollution prevention practices to reduce emissions (see Table 1). The intent is to reduce the impacts on facilities that operate incinerators in remote areas.

#### E. Potential Impacts to Political Subdivisions

Maricopa, Pima, and Pinal Counties, as regulators of facilities that incinerate hospital/medical/infectious waste, are expected to be impacted indirectly by this rule. Because these impacts are considered secondary, ADEQ has not included potential costs or benefits to the state's political subdivisions. However, if political subdivisions were operators of hospital/medical/infectious waste incinerators, they could be impacted by this rule.

#### F. Probable Impacts to Other Entities

Commercial treaters that incinerate waste are expected to be impacted indirectly through their regulation by political subdivisions (county regulators). Even though a large incinerator would have to meet the new federal standards, direct regulation will not come from ADEQ. Increased prices for their services potentially could occur, but the percent of increase is unknown. These companies may not have to increase prices to off-set any compliance costs to remain profitable. Potentially, these incinerators could experience an increased demand for services (increase in revenues) as the national shift from smaller to larger incinerators takes place.<sup>2</sup>

Vendors of air pollution control devices (retrofitting equipment) could experience an increased demand for their products. However, because of the limited number of incinerators regulated by ADEQ, most being regulated by political subdivisions, increased revenues could be considered an indirect impact of this rule. Small incinerator vendors potentially could be adversely impacted by this rule, but demand for vendors of alternative waste treatment technologies could increase.

The impact of this rule to ADEQ is expected to be minimal. The consequence of permitting fewer sources as a result of closures could be viewed as a cost savings to ADEQ staff. The loss in revenues from these sources is thought to be de minimis compared to the total revenue stream from permit fees.

#### G. Probable Impact to Consumers and General Public

Although it is conceivable that increased compliance costs for some health care providers could result in increased prices for health care services, cost-effective alternatives are available; hence, affected facilities could weigh the advantages of continuing incinerating with increased compliance costs or switching to alternative means of waste treatment/disposal. According to EPA, hospitals would have to increase their costs by \$0.30 for each hospital-patient day to recover annual control costs (62 FR 48373). Additionally, these facilities could incorporate other cost-saving benefits, such as improved waste segregation and more effective recycling programs.

The general public is expected to benefit from anticipated reductions in emissions that have harmful effects on both human health and the environment.

#### H. Potential Benefits: Summary and Conclusion

As stated in B., the overall purpose of this rule is to protect public health by reducing exposure to toxic air emissions emitted from hospital/medical/infectious waste incinerators. There is evidence of the harmful effects of these air emissions on both the public and the food supply.<sup>3</sup> Pollutants can contaminate the environment both far away and near the sources.

EPA anticipates toxic air emissions from incinerators will be reduced substantially. For example, 7 of the 9 regulated pollutants are expected to be reduced 75% or more from current levels emitted in the U.S. by existing hospital/medical/infectious waste incinerators. The 2 other pollutants, sulfur dioxide and nitrogen oxides, could be reduced 0 to 30% for existing incinerators and 0 to 52% for new incinerators. As a result of anticipated reductions in the quantity of harmful air pollutants, both the general public and the environment are expected to benefit. Net benefits could include the following: reduced adverse health effects, improved visibility, higher crop yields, reduced soiling and damage to materials (62 FR 48365 - 48366, 48372, 48376 - 48377).

Although it is not possible to quantify or monetize rule benefits in Arizona, ADEQ expects probable benefits to exceed probable costs.<sup>4</sup> The estimated compliance cost of \$300,000 could be substantially less if many of these facilities switch to other treatment/disposal options. Thus, without being able to monetize benefits, the net cost is overstated for this rule.

#### I. General Impact on Small Businesses and Reduction of Impacts

ADEQ is sensitive to the concerns of small businesses and the impact this rulemaking could have upon them. Accordingly, ADEQ has considered each of the methods prescribed in A.R.S. § 41-1035 for reducing the impact on small businesses. Likewise, it has considered each of the methods prescribed in A.R.S. § 41-1055(B)(5)(c). For example, A.R.S. § 41-1035 requires agencies implementing rules to reduce the impacts on small businesses by using certain methods where legal and feasible. Methods that may be used include the following: (1) exempt them from any or all rule requirements, (2) establish performance standards that would replace any design or operational standards, or (3) institute reduced compliance or reporting requirements. The latter method could be accomplished by establishing less stringent requirements, consolidating or simplifying them, or by setting less stringent schedules or deadlines.

ADEQ may not provide additional regulatory relief for small businesses beyond that established by the federal requirements (see J. below). ADEQ has no authority to exempt a small business, or even to establish a less stringent standard or schedule from compliance or reporting requirements. However, various federal provisions provide for reduced impacts and flexibility, but at the same time optimize public health and environmental control. Fourteen provisions are summarized in Table 2.

#### J. Alternative Rulemaking Provisions

ADEQ could not find any less costly or less intrusive rule provisions of achieving the goals and objectives of this rulemaking because rule provisions represent the adoption of federal requirements. However, the federal requirements do contain provisions that reduce burdens and provide cost-saving benefits. For instance, the MACT floor emission level established for existing, small-sized incinerators provides for good combustion alone. Potentially, this means that most of these facilities could continue to operate without a significant impact.

#### K. Employment, Revenues, and Secondary Impact Summary

ADEQ does not expect this rulemaking to impact short- or long-run employment, production, or industrial growth in Arizona. Even though some facilities could be adversely affected, ADEQ does not expect this rule to impact energy, water usage, job creation, or international competitiveness of goods and services. In addition, ADEQ does not expect that profitability or capital availability will be affected. Finally, this rulemaking is not expected to have an impact on state revenues.

For some facilities, compliance could result in expenditures for consulting services and capital expenditures for air pollution control devices. In most cases, the impact will be minimal. However, due to the potential for this rule to impose real-resource costs upon a few facilities, some revenues may be affected, but they could be off-set by increased costs for health care services. Expenditures by some facilities, however, would represent revenues for other entities, such as service and equipment providers (consultants, contractors, and suppliers of air pollution control devices).

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**Table 1. Emission Levels for Facilities Incinerating Waste and National Impact Forecasts\***

FACILITY SOURCE (incinerator type)	EMISSION LEVEL (control level)	BASIS FOR ACHIEVING EMISSION STANDARDS	GENERAL IMPACT FORECAST (nationally)
NEW SMALL <sup>1</sup> (waste-burning capacity ≤ 200 lbs./hr.)	MACT floor	Good combustion and a moderate efficiency wet scrubber air pollution control device (APCD).	Potentially, very few, if any, of the projected facilities will be constructed due to the substantial increase in cost and alternative means of waste disposal/treatment.
NEW LARGE <sup>2</sup> (waste-burning capacity > 500 lbs./hr.)	MACT floor	Good combustion and a combined dry/wet scrubber with activated carbon APCD. No other APCD could achieve lower emissions.	It is unknown how many of the projected 70 facilities will be constructed. This includes 10 commercial facilities.
NEW MEDIUM <sup>3</sup> (waste-burning capacity > 200 ≤ 500 lbs./hr.)	MACT > MACT floor	Good combustion and a combined dry/wet scrubber with activated carbon APCD.	Potentially, very few, if any, of the projected facilities will be constructed.
EXISTING SMALL <sup>4</sup> (waste-burning capacity ≤ 200 lbs./hr.)	MACT > MACT floor	Good combustion and a low efficiency wet scrubber APCD.	Potentially, most facilities will switch to an alternative means of waste treatment/ disposal (93% to 100%).
EXISTING SMALL (RURAL CRITERIA) <sup>5</sup> (waste-burning capacity ≤ 200 lbs./hr.)	MACT floor	Good combustion alone.	Potentially, most facilities will continue to operate.
EXISTING LARGE <sup>6</sup> (waste-burning capacity > 500 lbs./hr.)	MACT floor	Good combustion and a high efficiency dry or wet scrubber APCD.	Potentially, most facilities will continue to operate, but as many as 35% could close.
EXISTING MEDIUM <sup>7</sup> (waste-burning capacity > 200 ≤ 500 lbs./hr.)	MACT floor	Good combustion and a moderate efficiency dry or wet scrubber APCD.	Potentially, most facilities will switch to an alternative means of waste treatment/ disposal (60% to 95%).

Source: Adapted from 62 FR 48351, 48363 - 48372.

\*Emission levels represent the most cost effective and achievable standards. The emission levels are not based on the exclusive use of a wet or dry scrubber APCD (dry scrubbers normally cost more than wet scrubbers); replacing a wet scrubber APCD on an existing incinerator with a dry scrubber APCD, and vice versa, would be very expensive. EPA may not set emission limitations less stringent than the MACT floor, but it may set standards and guidelines more stringent than the MACT floor. Note that MACT floor standards for new facilities may not be less stringent than



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emissions control achieved by the best controlled similar facilities and guidelines for existing facilities may not be less stringent than the average emissions limitation achieved by the best performing 12% of facilities in the category.

APCD=air pollution control device; dioxins/furans (CDD/CDF)=polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans; MACT=maximum achievable control technology; and PM=particulate matter.

Notes to Table 1 follow:

<sup>1</sup> Under scenarios B and C, none of the projected 85 small facilities (in absence of new standards) would be constructed. EPA considers the projected 85 new facilities to be an unrealistic scenario.

<sup>2</sup> Under scenario B, none of the projected 60 large facilities (in absence of new standards) would be constructed; however, the 10 projected commercial facilities probably would be constructed. But under scenario C, it is unknown how many of the projected 60 large and 10 commercial facilities would be constructed.

<sup>3</sup> Under scenarios B and C, none of the projected 90 medium facilities (in absence of new standards) would be constructed. EPA considers the projected 90 new facilities to be an unrealistic scenario. Note that the addition of activated carbon to a combined dry/wet APCD would increase capital costs by < 4%, but it would result in a significant reduction in dioxins/furans (CDD/CDF) emissions.

<sup>4</sup> The use of a moderate or high efficiency wet scrubber APCD would increase the capital cost by 15% to 42% but would result in only a slight decrease in PM emissions.

<sup>5</sup> The purpose of the "rural criteria" category is to provide a more cost-effective option for facilities operating in remote areas. Emission guidelines based on a wet scrubber APCD could cause a financial hardship for most of these facilities. However, to meet the "rural criteria" category, a facility must be located at least 50 miles from the nearest SMSA boundary and must not incinerate more than 2,000 lbs. per week. EPA estimates that less than 1% of waste will be burned in these facilities. Over 90% of existing, small-sized incinerators would remain subject to guidelines based on a wet scrubber APCD.

<sup>6</sup> Guidelines based on the use of a combined dry/wet scrubber APCD were not considered for medium- or large-sized incinerators because the APCD is very expensive and would result in small additional reductions in emissions.

<sup>7</sup> Because the emissions level for small-sized incinerators (good combustion and low efficiency wet scrubber) is only slightly less stringent than for medium-sized incinerators (good combustion and moderate efficiency wet scrubbers), the incentive for medium-sized facilities to reclassify themselves as small is quashed. If the emissions level for small-sized incinerators was considerably less stringent, medium-sized facilities would have an economic incentive to reclassify. Note also that the use of a high efficiency wet scrubber APCD would have increased costs 15% to 25%, but it would have resulted in only a slight decrease in PM emissions.

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**Table 2. Rule Provisions Incorporated to Reduce Burdens and to Provide Cost-Saving Benefits for New and Existing Facilities Operating Incinerators**

No.	RULE PROVISION
1	reduces testing for facilities demonstrating compliance with emission levels <sup>1</sup>
2	provides for 1-hr test times in most cases as opposed to longer test times <sup>2</sup>
3	allows existing facilities meeting the rural criteria to do an annual equipment inspection as opposed to conducting annual performance tests (3rd party inspections are not required)
4	allows monitoring of operating parameters and routine Method 9 opacity tests instead of continuous emissions monitoring systems for CO and opacity (stack)
5	narrows the definition of “medical waste” to define items combusted (MWTA definition was used as opposed to others) <sup>3</sup>
6	allows facility operators to receive training and qualification through a state-approved training program
7	requires facilities to develop a Waste Management Plan rather than prohibiting materials from waste streams (design waste management measures to reduce the amount of toxic emissions from incinerated waste)
8	allows facilities that otherwise would be subject to this rulemaking to ignore emission limits during periods of only combusting pathological, chemotherapeutic, and low-level radioactive waste (temporary deferment only) <sup>4</sup>
9	excludes facilities burning pathological, chemotherapeutic, and low-level radioactive wastes, as well as crematories, cement kilns, and pyrolysis units (any facility permitted under § 3005 of the SWDA also is excluded. See CAAA §129(g)(1) <sup>5</sup>
10	provides an exemption for facilities combusting ≤ 10% of hospital/medical/infectious waste by weight (co-fired combustors) <sup>6</sup>
11	allows certain records to be maintained in either electronic or paper format without duplication
12	provides for reports to be submitted semiannually, or annually if no exceedances occur, as opposed to quarterly
13	clarifies siting requirements for new facilities
14	enables existing facilities to meet emission limits with either a wet or dry scrubber

Source: Adapted from 62 FR 48352 - 48360, 48374.

MWTA=Medical Waste Tracking Act and SWDA=Solid Waste Disposal Act.

Notes to Table 2 follow:

<sup>1</sup> Emissions may be tested every 3 years instead of annually if emission requirements were met. In addition, the testing only requires emission testing of a few critical pollutants which will indicate that the APCD is operating properly.

<sup>2</sup> EPA test methods must be followed when performing emissions testing. This will ensure that compliance testing follows the same procedures which were used to generate the emission data on which emission limits were based.

<sup>3</sup> The EPA promulgated the Medical Waste Tracking Act (MWTA) definition under the co-authority of § 2002 of the Solid Waste Disposal Act (SWDA), 42 U.S.C. 6912 and §§ 129 and 301 of the CAAA, 42 U.S.C. 7429 and 7601, and a definition of “hospital waste” under the authority of §§ 129 and 301 of the CAAA. The MWTA definition includes 7 classes of waste (cultures and stocks of infectious agents and associated biologicals, human pathological waste, human blood and blood products, used sharps, unused sharps, animal waste, and isolation waste). It excludes the following: hazardous waste (see 40 CFR Part 261); household waste; ash from incinerators; human corpses, remains,

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anatomical parts (interment or cremation); domestic sewage materials, and pharmaceutical wastes (off-spec or out-of-date drugs unless generated at a hospital and disposed in the hospital's waste stream). The intent was not to define items which could transmit disease, but only to determine the applicability of the federal standards and guidelines on regulated waste.

Healthcare facilities generate 2 types of waste streams: noninfectious (health care trash) and infectious, or potentially so, that requires special handling to avoid disease transmission. A general conclusion is that hospital waste is comprised of 85% to 90% noninfectious materials. The key concept is that facilities potentially can decrease their waste disposal costs by segregating their waste. Likewise, recycling and other pollution prevention measures could reduce the economic impact of this rulemaking.

<sup>4</sup> These wastes are considered "excluded" wastes, whether or not they meet the definition of regulated waste. They often are combusted in incinerators which exclusively burn these types of wastes. However, the owners/operators must keep records of the periods of time when only these wastes are combusted. A facility (co-fired combustor) that combusts 1 or more of these wastes, or waste pharmaceuticals as well, along with more than 10% of other materials defined as regulated waste would be subject to this rulemaking. Pathological waste, chemotherapeutic waste, low-level radioactive waste, as well as waste pharmaceuticals (see note #3), are classified as other fuels and wastes, such as municipal waste and coal. See rule provisions #9 and #10 and their respective notes.

<sup>5</sup> Crematories and facilities that combust waste pharmaceuticals, pathological waste, chemotherapeutic waste, and low-level radioactive waste are regulated by other requirements, or they will be regulated by requirements developed through the Industrial Combustion Coordinated Rulemaking project. Thus, the current deferment is only temporary. Furthermore, the EPA is exempting cement kilns and pyrolysis units because these facilities are different from the facilities that combust regulated waste defined in this rulemaking. Combustors larger than 250 tpd are excluded (subject to subparts Ea, Eb, or Cb). The new source performance standards (NSPS) and emission guidelines (EG) for municipal waste combustor (MWC), incinerating 40 tpd - 250 tpd, were partially vacated and remanded, but the EPA will develop regulations for all solid waste incinerators, including MWC, incinerating < 40 tpd.

<sup>6</sup> Any facility (incinerator or industrial process) that combusts  $\leq 10\%$  regulated waste (by weight on a calendar quarterly basis) is not subject to this rulemaking provided the owner/operator notifies the Department of an exemption claim and keeps records of the amount of regulated waste and other fuels combusted. For example, a facility combusting 90% pathological waste (or an equal amount of other exempted wastes) along with 10% regulated waste is a co-fired combustor and is exempt from this rulemaking. These exempted wastes do not count toward the 10% regulated waste maximum in determining the amount of regulated waste burned in a co-fired combustor. Facilities that may co-fire regulated waste along with other fuels or wastes include the following: MWC, boilers, industrial/commercial incinerators, and other solid waste incinerators. These facilities already are, or will be, subject to § 129 of the CAAA.

ENDNOTES

<sup>1</sup> EPA estimates that it costs \$35,000 per year to operate an existing, small-sized incinerator that uses good combustion practices only. An air pollution control device will add \$10,000 per year to the facility's operating costs. In addition, the least expensive monitoring option, which relies on operating parameters, costs an additional \$10,000 per year to operate. Operating parameters are selected by the facility at the time of the initial performance test that demonstrates compliance with the emission limits. Thus, monitoring of the operating parameters is the only means of determining compliance on a continuous basis (62 FR 48361).

<sup>2</sup> Off-site waste disposal could be indirectly affected nationally with an increase in waste disposal fees. According to EPA, commercial treaters would have to increase fees by 2.6% to recover annual control costs (62 FR 48373).

<sup>3</sup> Ecology Center of Ann Arbor, Michigan, text of the justification document (E-mail 5/01/98).

<sup>4</sup> The potential does exist for a reduction in adverse health effects due to reduced quantities of toxic air emissions. EPA calculated a value of \$6,075 per ton for reductions in particulate matter (1993 dollars), or annualized benefits of \$5.5 to \$5.8 million for existing hospital/medical/infectious waste incinerators in the U.S. subject to the new emission guidelines (62 FR 48372).

**10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):**

The following changes were made after the rules were proposed at the request of GRRC staff. Except as noted following the rules, all changes were nonsubstantive and made to improve clarity, conciseness and understandability.

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**R18-2-732. Standards of Performance for Existing Hospital/Medical/Infectious Waste Incinerators**

- A.** This Section applies to any hospital/medical/infectious waste incinerator (HMIWI) ~~that commenced construction for which construction was commenced on or before June 20, 1996. All federal regulations cited within this Section are incorporated by reference in R18-2-901.~~ An incinerator subject to this Section is not subject to R18-2-704. The following types of incinerators are not subject to this Section:
1. An incinerator during periods when only pathological waste, low-level radioactive waste, or chemotherapeutic waste is burned, if the owner or operator of the incinerator does both of the following:
    - a. Notifies the Director of an exemption claim.
    - b. Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, or chemotherapeutic waste is burned.
  2. Any co-fired incinerator if the owner or operator of the incinerator does all of the following:
    - a. Notifies the Director of an exemption claim.
    - b. Provides an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels or wastes to be burned.
    - c. Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste burned, and the weight of all other fuels and wastes burned at the co-fired incinerator.
  3. Any incinerator required to have a permit under Section 3005 of the Solid Waste Disposal Act.
  4. Any incinerator subject to 40 CFR 60, Subparts Cb, Ea, or Eb (standards or guidelines for certain municipal waste incinerators) ~~as incorporated by reference in R18-2-901.~~
  5. Any pyrolysis unit, as defined in 40 CFR 60.51c.
  6. Cement kilns firing hospital waste or medical/infectious waste.
- B.** A physical or operational change made to an existing HMIWI unit solely for the purpose of complying with emission limitations under this Section is not considered a modification and does not result in an existing HMIWI unit becoming subject to the provisions of R18-2-901(9).
- C.** In addition to the definitions provided in 40 CFR 60.51c ~~as incorporated by reference in R18-2-901,~~ the following definitions apply to this Section:
- ~~1. "Hospital/medical/infectious waste incinerator" or "HMIWI" or "HMIWI unit" means any device that combusts any amount of hospital waste or medical/infectious waste.~~
  - ~~2.1.~~ "Rural HMIWI" means any small HMIWI that is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area and that burns less than 2,000 pounds per week of hospital waste and medical/infectious waste. The 2,000 pounds per week limitation does not apply during performance tests.
  - ~~3.2.~~ "Standard Metropolitan Statistical Area" or "SMSA" means any area listed in Office of Management and Budget (OMB) Bulletin 93-17 entitled "Revised Statistical Definitions for Metropolitan Areas" dated June 30, 1993 which is incorporated by reference. This incorporation by reference does not include any later amendments or editions. A copy of the bulletin is on file with the Office of the Secretary of State and the Department.
  - ~~4.3.~~ "State Plan" means the plan that 40 CFR 60 subpart Ce requires states to develop to regulate existing HMIWI built on or before June 20, 1996.
- D.** Beginning September 15, 2000, an HMIWI shall operate under a Class I permit.
- E.** An owner or operator of an HMIWI shall comply with the following emissions limitations:
1. The emissions limitations in Table 1 unless the HMIWI is a rural HMIWI.
  2. The emissions limitations in Table 2, if the HMIWI is a rural HMIWI.
  3. An owner or operator of an HMIWI shall not cause to be discharged into the atmosphere from the stack of that HMIWI any gases that exhibit greater than 10% opacity (6-minute block average).
  4. An owner or operator of a large existing HMIWI shall comply with the opacity requirements in 40 CFR 60.52c (c), (d), and (e).
- F.** An owner or operator of an HMIWI shall comply with the operator training requirements found in 40 CFR 60.53c ~~as incorporated by reference in R18-2-901~~ within 1 year following approval of the State Plan.
- G.** An owner or operator of an HMIWI shall comply with the waste management requirements found in 40 CFR 60.55c ~~60.33e as incorporated by reference in R18-2-901.~~
- H.** An owner or operator of a rural HMIWI shall comply with the following inspection requirements:
1. The owner or operator shall conduct or hire another party to conduct an initial equipment inspection within 1 year following approval of the State Plan.
  2. At a minimum, an inspection shall include the following:
    - a. Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation. Clean pilot flame sensor, as necessary.
    - b. Inspect adjustment of primary and secondary chamber combustion air, and adjust as necessary.
    - c. Inspect hinges and door latches, and lubricate as necessary.
    - d. Inspect dampers, fans, and blowers for proper operation.
    - e. Inspect HMIWI door and door gaskets for proper sealing.

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- f. Inspect motors for proper operation.
  - g. Inspect primary chamber refractory lining. Clean and repair or replace lining as necessary.
  - h. Inspect incinerator shell for corrosion ~~of~~ and hot spots.
  - i. Inspect secondary/tertiary chamber and stack, clean as necessary.
  - j. Inspect mechanical loader, including limit switches, for proper operation, if applicable.
  - k. Visually inspect waste bed (grates), and repair or seal, as appropriate.
  - l. For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments.
  - m. Inspect each air pollution control device for proper operation, if applicable.
  - n. Inspect waste heat boiler systems to ensure proper operation, if applicable.
  - o. Inspect bypass stack components.
  - p. Ensure proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment.
  - q. Generally observe that the equipment is maintained in good operating condition.
3. Within 10 operating days following an equipment inspection, the owner or operator shall complete all necessary repairs unless the owner or operator obtains written approval from the Director establishing a date by which all necessary repairs of the facility shall be completed.
4. The owner or operator of any rural HMIWI shall conduct or hire another party to conduct an equipment inspection annually (no more than 12 months following the previous annual equipment inspection), as outlined in subsections (2) and (3).
- I.** An owner or operator of an HMIWI shall comply with the following compliance, performance testing, and monitoring requirements:
- 1. Except as provided in subsection (2), an existing HMIWI shall meet the requirements for compliance and performance testing in 40 CFR 60.56c, excluding the fugitive emissions testing requirements under ~~subsections~~ 40 CFR 60.56c(b)(12) and (c)(3).
  - 2. A rural HMIWI shall meet the following compliance and performance testing requirements:
    - a. Conduct the performance testing requirements in 40 CFR 60.56c(a), (b)(1) through (b)(9), (b)(11) (Hg only), and (c)(1). The 2,000 lb/week limitation under 40 CFR 60.33e(b) does not apply during performance tests.
    - b. 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 limitations.
    - c. Ensure that the 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~~ is a violation of the established operating parameter.
    - d. Except as provided in subsection (I)(2)(e), operating the facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously ~~constitutes~~ is a violation of the PM, CO, and dioxin/furan emission limitations.
    - e. The owner or operator may conduct a repeat performance test within 30 days after violation of any applicable operating parameter to demonstrate that the facility is not in violation of any applicable emission limit. Repeat performance tests conducted under this ~~paragraph~~ subsection shall be conducted using the identical operating parameters that indicated a violation under subsection (I)(2)(d).
  - 3. The owner or operator shall comply with the monitoring requirements listed in 40 CFR 60.57c of subpart Ec, except as provided ~~for under~~ in subsection (I)(4).
  - 4. A rural HMIWI shall meet the following monitoring requirements:
    - a. Install, calibrate (to manufacturer's 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.
    - b. Install, calibrate (to manufacturer's specifications), maintain, and operate a device that automatically measures and records the date, time, and weight of each charge fed into the HMIWI.
    - c. ~~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% of the operating hours per day and for 90% of the operating hours per calendar quarter that the facility is incinerating hospital waste or medical/infectious waste.
- J.** An owner or operator of an HMIWI shall comply with the following reporting and recordkeeping requirements:
- 1. An owner or operator of each HMIWI shall comply with the requirements listed in 40 CFR 60.58c(b), (c), (d), (e), and (f), excluding 40 CFR 60.58c(b)(2)(ii) (fugitive emissions) and (b)(7) (siting).
  - 2. An owner or operator of each rural HMIWI shall perform all the following:
    - a. Maintain records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days after an inspection or the timeframe established by the Director.

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- b. Submit an annual report to ADEQ, Air Quality Division, (T5109B), 3003 North Central Avenue, Phoenix, Arizona 85012. The report shall contain information recorded under subsection (2)(a) and be submitted no later than 60 days following the year in which data were collected. The owner or operator shall send subsequent reports no later than 12 calendar months following the previous report (after receiving a Class I permit, the owner or operator shall submit these reports semiannually). The facility's manager shall sign the report.

**Table 1. Emission Limitations for Small, Medium, and Large HMIWI**

Pollutant	Units (7% oxygen, dry basis)	Emission Limitation		
		Small HMIWI	Medium HMIWI	Large HMIWI
Particulate matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot).	115(0.05)	69 (0.03)	34(0.015)
Carbon monoxide	Parts per million by volume	40	40	40
Dioxin/furans	Nanograms per dry standard cubic meter total dioxin/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter toxic equivalent quantity (grains per billion dry standard cubic feet).	125(55) or 2.3(1.0)	125 (55) <del>(1.0)</del> 2.3(1.0)	125(55) or 2.3(1.0)
Hydrogen chloride	Parts per million by volume or percent reduction.	100 or 93%	100 or 93%	100 or 93%
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%	1.2(0.52) or 70%	1.2(0.52) or 70%
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	0.16(0.07) or 65%	0.16(0.07) or 65%	0.16(0.07) or 65%
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%

**R18-2-901. Standards of Performance for New Stationary Sources**

Except as provided in R18-2-902 through R18-2-905, the following subparts of 40 CFR 60, New Source Performance Standards (NSPS), and all accompanying appendices, adopted as of July 1, 1997, or the specific date provided below, and no future editions or amendments, ~~except for adoption date specified below~~, are incorporated by reference. These standards are on file with the Office of the Secretary of State and the Department and shall be applied by the Department.

1. No Change.
2. No Change.
3. No Change.
4. No Change.
5. No Change.
6. No Change.
7. No Change.
8. No Change.
9. Subpart Ec - Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996 ~~or for which modification commenced after March 16, 1998~~, adopted September 15, 1997 (62 FR 48347 48348).

SUBSTANTIVE CHANGES

R18-2-732:

1. In subsection (C)(1) the word “small” was inserted before HMIWI in the definition of rural HMIWI to conform with the federal language.
2. In subsection (G) “40 CFR 60.33c” was replaced with “40 CFR 60.55c” to correct a clerical error.

R18-2-901

1. The phrase “or the specific date provided below,” replaced the phrase “except for adoption date specified below,” to provide consistency with another amendment to this Section in a different rulemaking action.
2. In paragraph 9, 48347 was replaced with 48348 to correct a clerical error.

**11. A summary of the principal comments and the agency responses to them:**

The proposed rule was published in the *Arizona Administrative Register* on April 16, 1999. The Arizona Department of Environmental Quality (ADEQ) received written comment regarding the proposed rule from 1 interested party during the public comment period which ended May 24, 1999. No oral comments were received at the public hearings held in Phoenix and Flagstaff on May 18, 1999, in Tucson on May 19, 1999 and in Sierra Vista on May 20, 1999. The written comment received has been addressed by ADEQ and is summarized in the following paragraph:

Comment: R18-2-732 and R18-2-901: Commenter expressed support for both of these rules.

Response: No changes were made to these rules based on the comment.

**12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**

Not applicable.

**13. Incorporations by reference and their locations in the rules:**

OMB Bulletin 93-17 R18-2-732

40 CFR 60, Subpart Ec R18-2-901

**14. Was this rule previously adopted as an emergency rule?**

No.

**15. The full text of the rules follows:**

**TITLE 18. ENVIRONMENTAL QUALITY**

**CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR POLLUTION CONTROL**

**ARTICLE 7. EXISTING STATIONARY SOURCE PERFORMANCE STANDARDS**

Sections

R18-2-732. Standards of Performance for Existing Hospital/Medical/Infectious Waste Incinerators

**ARTICLE 9. NEW SOURCE PERFORMANCE STANDARDS**

Section

R18-2-901. Standards of Performance for New Stationary Sources

**ARTICLE 7. EXISTING STATIONARY SOURCE PERFORMANCE STANDARDS**

**R18-2-732. Standards of Performance for Existing Hospital/Medical/Infectious Waste Incinerators**

- A.** This Section applies to any hospital/medical/infectious waste incinerator (HMIWI) for which construction was commenced on or before June 20, 1996. All federal regulations cited within this Section are incorporated by reference in R18-2-901. An incinerator subject to this Section is not subject to R18-2-704. The following types of incinerators are not subject to this Section:
1. An incinerator during periods when only pathological waste, low-level radioactive waste, or chemotherapeutic waste is burned, if the owner or operator of the incinerator does both of the following:
    - a. Notifies the Director of an exemption claim.
    - b. Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, or chemotherapeutic waste is burned.
  2. Any co-fired incinerator if the owner or operator of the incinerator does all of the following:
    - a. Notifies the Director of an exemption claim.
    - b. Provides an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels or wastes to be burned.
    - c. Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste burned, and the weight of all other fuels and wastes burned at the co-fired incinerator.
  3. Any incinerator required to have a permit under Section 3005 of the Solid Waste Disposal Act.
  4. Any incinerator subject to 40 CFR 60, Subparts Cb, Ea, or Eb (standards or guidelines for certain municipal waste incinerators).
  5. Any pyrolysis unit, as defined in 40 CFR 60.51c.
  6. Cement kilns firing hospital waste or medical/infectious waste.
- B.** A physical or operational change made to an existing HMIWI unit solely for the purpose of complying with emission limitations under this Section is not considered a modification and does not result in an existing HMIWI unit becoming subject to the provisions of R18-2-901(9).
- C.** In addition to the definitions provided in 40 CFR 60.51c, the following definitions apply to this Section:
1. “Rural HMIWI” means any small HMIWI that is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area and that burns less than 2,000 pounds per week of hospital waste and medical/infectious waste. The 2,000 pounds per week limitation does not apply during performance tests.
  2. “Standard Metropolitan Statistical Area” or “SMSA” means any area listed in Office of Management and Budget (OMB) Bulletin 93-17 entitled “Revised Statistical Definitions for Metropolitan Areas” dated June 30, 1993 which is incorporated by reference. This incorporation by reference does not include any later amendments or editions. A copy of the bulletin is on file with the Office of the Secretary of State and the Department.
  3. “State Plan” means the plan that 40 CFR 60 subpart Ce requires states to develop to regulate existing HMIWI built on or before June 20, 1996.
- D.** Beginning September 15, 2000, an HMIWI shall operate under a Class I permit.
- E.** An owner or operator of an HMIWI shall comply with the following emissions limitations:
1. The emissions limitations in Table 1 unless the HMIWI is a rural HMIWI.
  2. The emissions limitations in Table 2, if the HMIWI is a rural HMIWI.
  3. An owner or operator of an HMIWI shall not cause to be discharged into the atmosphere from the stack of that HMIWI any gases that exhibit greater than 10% opacity (6-minute block average).
  4. An owner or operator of a large existing HMIWI shall comply with the opacity requirements in 40 CFR 60.52c (c), (d), and (e).
- F.** An owner or operator of an HMIWI shall comply with the operator training requirements found in 40 CFR 60.53c within 1 year following approval of the State Plan.
- G.** An owner or operator of an HMIWI shall comply with the waste management requirements found in 40 CFR 60.55c.



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- H.** An owner or operator of a rural HMIWI shall comply with the following inspection requirements:
1. The owner or operator shall conduct or hire another party to conduct an initial equipment inspection within 1 year following approval of the State Plan.
  2. At a minimum, an inspection shall include the following:
    - a. Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation. Clean pilot flame sensor, as necessary.
    - b. Inspect adjustment of primary and secondary chamber combustion air, and adjust as necessary.
    - c. Inspect hinges and door latches, and lubricate as necessary.
    - d. Inspect dampers, fans, and blowers for proper operation.
    - e. Inspect HMIWI door and door gaskets for proper sealing.
    - f. Inspect motors for proper operation.
    - g. Inspect primary chamber refractory lining. Clean and repair or replace lining as necessary.
    - h. Inspect incinerator shell for corrosion and hot spots.
    - i. Inspect secondary/tertiary chamber and stack, clean as necessary.
    - j. Inspect mechanical loader, including limit switches, for proper operation, if applicable.
    - k. Visually inspect waste bed (grates), and repair or seal, as appropriate.
    - l. For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments.
    - m. Inspect each air pollution control device for proper operation, if applicable.
    - n. Inspect waste heat boiler systems to ensure proper operation, if applicable.
    - o. Inspect bypass stack components.
    - p. Ensure proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment.
    - q. Generally observe that the equipment is maintained in good operating condition.
  3. Within 10 operating days following an equipment inspection, the owner or operator shall complete all necessary repairs unless the owner or operator obtains written approval from the Director establishing a date by which all necessary repairs of the facility shall be completed.
  4. The owner or operator of any rural HMIWI shall conduct or hire another party to conduct an equipment inspection annually (no more than 12 months following the previous annual equipment inspection), as outlined in subsections (2) and (3).
- I.** An owner or operator of an HMIWI shall comply with the following compliance, performance testing, and monitoring requirements:
1. Except as provided in subsection (2), an existing HMIWI shall meet the requirements for compliance and performance testing in 40 CFR 60.56c, excluding the fugitive emissions testing requirements under 40 CFR 60.56c(b)(12) and (c)(3).
  2. A rural HMIWI shall meet the following compliance and performance testing requirements:
    - a. Conduct the performance testing requirements in 40 CFR 60.56c(a), (b)(1) through (b)(9), (b)(11) (Hg only), and (c)(1). The 2,000 lb/week limitation under 40 CFR 60.33e(b) does not apply during performance tests.
    - b. 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 limitations.
    - c. Ensure that the 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 is a violation of the established operating parameter.
    - d. Except as provided in subsection (I)(2)(e), operating the facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously is a violation of the PM, CO, and dioxin/furan emission limitations.
    - e. The owner or operator may conduct a repeat performance test within 30 days after violation of any applicable operating parameter to demonstrate that the facility is not in violation of any applicable emission limit. Repeat performance tests conducted under this subsection shall be conducted using the identical operating parameters that indicated a violation under subsection (I)(2)(d).
  3. The owner or operator shall comply with the monitoring requirements listed in 40 CFR 60.57c of subpart Ec, except as provided in subsection (I)(4).
  4. A rural HMIWI shall meet the following monitoring requirements:
    - a. Install, calibrate (to manufacturer's 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.
    - b. Install, calibrate (to manufacturer's specifications), maintain, and operate a device that automatically measures and records the date, time, and weight of each charge fed into the HMIWI.

- c. 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% of the operating hours per day and for 90% of the operating hours per calendar quarter that the facility is incinerating hospital waste or medical/infectious waste.
- J.** An owner or operator of an HMIWI shall comply with the following reporting and recordkeeping requirements:
  - 1. An owner or operator of each HMIWI shall comply with the requirements listed in 40 CFR 60.58c(b), (c), (d), (e), and (f), excluding 40 CFR 60.58c(b)(2)(ii) (fugitive emissions) and (b)(7) (siting).
  - 2. An owner or operator of each rural HMIWI shall perform all the following:
    - a. Maintain records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days after an inspection or the timeframe established by the Director.
    - b. Submit an annual report to ADEQ, Air Quality Division, (T5109B), 3003 North Central Avenue, Phoenix, Arizona 85012. The report shall contain information recorded under subsection (2)(a) and be submitted no later than 60 days following the year in which data were collected. The owner or operator shall send subsequent reports no later than 12 calendar months following the previous report (after receiving a Class I permit, the owner or operator shall submit these reports semiannually). The facility's manager shall sign the report.

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**Table 1. Emission Limitations for Small, Medium, and Large HMIWI**

<u>Pollutant</u>	<u>Units (7% oxygen, dry basis)</u>	<u>Emission Limitation</u>		
		<u>Small HMIWI</u>	<u>Medium HMIWI</u>	<u>Large HMIWI</u>
<u>Particulate matter</u>	<u>Milligrams per dry standard cubic meter (grains per dry standard cubic foot).</u>	<u>115(0.05)</u>	<u>69 (0.03)</u>	<u>34(0.015)</u>
<u>Carbon monoxide</u>	<u>Parts per million by volume</u>	<u>40</u>	<u>40</u>	<u>40</u>
<u>Dioxin/furans</u>	<u>Nanograms per dry standard cubic meter total dioxin/furans(grains per billion dry standard cubic feet)or nanograms per dry standard cubic meter toxic equivalent quantity (grains per billion dry standard cubic feet).</u>	<u>125(55) or 2.3(1.0)</u>	<u>125 (55) 2.3(1.0)</u>	<u>125(55)or 2.3(1.0)</u>
<u>Hydrogen chloride</u>	<u>Parts per million by volume or percent reduction.</u>	<u>100 or 93%</u>	<u>100 or 93%</u>	<u>100 or 93%</u>
<u>Sulfur dioxide</u>	<u>Parts per million by volume</u>	<u>55</u>	<u>55</u>	<u>55</u>
<u>Nitrogen oxides</u>	<u>Parts per million by volume</u>	<u>250</u>	<u>250</u>	<u>250</u>
<u>Lead</u>	<u>Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction</u>	<u>1.2(0.52) or 70%</u>	<u>1.2(0.52) or 70%</u>	<u>1.2(0.52) or 70%</u>
<u>Cadmium</u>	<u>Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction</u>	<u>0.16(0.07) or 65%</u>	<u>0.16(0.07) or 65%</u>	<u>0.16(0.07) or 65%</u>
<u>Mercury</u>	<u>Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction</u>	<u>0.55(0.24) or 85%</u>	<u>0.55(0.24) or 85%</u>	<u>0.55(0.24) or 85%</u>

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**Table 2. Emissions Limitations for Rural HMIWI**

<u>Pollutant</u>	<u>Units (7% oxygen, dry basis)</u>	<u>Emission Limitation</u>
<u>Particulate matter</u>	<u>Milligrams per dry standard cubic meter (grains per dry standard cubic foot)</u>	<u>197 (0.086)</u>
<u>Carbon monoxide</u>	<u>Parts per million by volume</u>	<u>40</u>
<u>Dioxin/furans</u>	<u>Nanograms per dry standard cubic meter total dioxin/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter toxic equivalent quantity (grains per billion dry standard cubic feet)</u>	<u>800 (350) or 15 (6.6)</u>
<u>Hydrogen chloride</u>	<u>Parts per million by volume</u>	<u>3100 (1.0)</u>
<u>Sulfur dioxide</u>	<u>Parts per million by volume</u>	<u>55</u>
<u>Nitrogen oxides</u>	<u>Parts per million by volume</u>	<u>250</u>
<u>Lead</u>	<u>Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)</u>	<u>10 (4.4)</u>
<u>Cadmium</u>	<u>Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)</u>	<u>4 (1.7)</u>
<u>Mercury</u>	<u>Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)</u>	<u>7.5 (3.3)</u>

**ARTICLE 9. NEW SOURCE PERFORMANCE STANDARDS**

**R18-2-901. Standards of Performance for New Stationary Sources**

Except as provided in R18-2-902 through R18-2-905, the following subparts of 40 CFR 60, New Source Performance Standards (NSPS), and all accompanying appendices, adopted as of July 1, 1997, or the specific date provided below, and no future editions or amendments, are incorporated by reference. These standards are on file with the Office of the Secretary of State and the Department and shall be applied by the Department.

1. No Change.
2. No Change.
3. No Change.
4. No Change.
5. No Change.
6. No Change.
7. No Change.
8. No Change.
9. Subpart Ec - Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996, adopted September 15, 1997, (62 FR 48348).
- ~~9-10.~~ No Change.
- ~~10-11.~~ No Change.
- ~~11-12.~~ No Change.
- ~~12-13.~~ No Change.
- ~~13-14.~~ No Change.
- ~~14-15.~~ No Change.
- ~~15-16.~~ No Change.
- ~~16-17.~~ No Change.
- ~~17-18.~~ No Change.

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