



EPA's Revised Air Toxic Standards for Boilers and Solid Waste Incinerators

Air Quality Technical Advisory Committee Meeting

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Background

- On December 2, 2011, EPA proposed reconsidered standards for toxic air pollutants from boilers at major and area sources and certain solid waste incinerators.
- The proposals would maintain public health protections through significant reductions in toxic air emissions, increase the flexibility of these standards, and address compliance concerns raised by industry and labor groups.
- They are based on extensive analysis and review and consideration of data and input from states, environmental groups, industry, and the public.



Overview of Actions

- When EPA issued standards in March 2011, the agency also announced it intended to reconsider those standards under a Clean Air Act process that allows the agency to seek additional public review and comment to ensure full transparency.
- The December proposed reconsidered standards would cost-effectively protect Americans from mercury, particulate pollution, lead and other harmful pollutants released by boilers and incinerators. These pollutants can lead to developmental disabilities in children, as well as cancer, heart disease, aggravated asthma and premature death.



Overview of Actions

- In addition to the Agency's reconsideration efforts, EPA received more than 50 petitions to reconsider, clarify, and amend certain provisions of the March rules.
- The proposed December rules address issues identified in the Agency's reconsiderations and subsequent petitions and considers the additional information and data submitted to the Agency.
- The proposed rules were published in the Federal Register on December 23, 2011. The comment period for the proposed rules ends on February 21, 2012.



Health Benefits

- The proposed changes would cut emissions of pollutants such as mercury, particulate pollution, sulfur dioxide, dioxin, lead, and nitrogen dioxide.
- These pollutants can cause a range of dangerous health effects - from developmental disabilities in children to cancer, heart attacks and premature death.
- The proposed standards would have direct benefits to many communities where people live very close to these units.
- Together, the standards will avoid up to 8,100 premature deaths, 5,100 heart attacks, and 52,000 cases of aggravated asthma.
- EPA estimates that Americans would receive \$12 to \$30 in health benefits for every dollar spent to meet the proposed standards.



Impact of the Standards

- Of 1.5 million boilers in the U.S., less than 1% would need to meet emission limits.
- <1% (about 5,500) would need to meet emission limits to minimize toxics. Most of these are larger boilers located at industrial facilities.
- 13% (about 195,500) would need to follow work practice standards, such as annual tune-ups, to minimize toxics.
- 86% are clean and not covered by these rules. Many of these boilers are at places like hospitals, schools and churches. ~1.3 million boilers not covered by rules.



Timeline

- March 2011: EPA issued final rules
 - Boiler major source rule
 - Boiler area source rule
 - Commercial and industrial solid waste incineration (CISWI) rule
- Concurrently, EPA initiated a reconsideration process affecting all three rules:
 - Address technical issues that arose from public comments.
 - Give the public ample opportunity to comment on changes in the final rule that were not in the proposal.
- May 16, 2011: EPA announced a stay of the Boiler major source and CISWI rules and solicited additional input, through July 15, 2011, on these rules. Stay was vacated on January 9, 2012.
- December 23, 2011: EPA published proposed reconsideration. Comment period ends on February 21, 2012.



How many boilers are there and where are they used?

- Boilers located at small sources of air toxics emissions are known as area source boilers. There are about 1.5 million boilers located at small sources of air pollutants, including universities, hospitals, hotels and commercial buildings. About 187,000 boilers would be covered by EPA's area source boiler rule. The rest, about 1.3 million boilers, burn natural gas and are not covered by EPA's area source boiler rule.
- Boilers at large sources of air toxics emissions are known as major source boilers. There are about 14,000 boilers located at large sources of air pollutants, including refineries, chemical plants, and other industrial facilities.
- The reconsidered standards would have direct benefits to many communities where people live, work, and play.



Breakdown of Major and Area Source Boilers

- Major Source Boilers
 - About 14,000 covered units
 - 88% (about 12,300) would need to follow work practice standards such as annual tune-ups to minimize toxics
 - 12% (about 1,750) would need to meet emission limits to minimize toxics
- Area Source Boilers
 - About 187,000 covered units (No NG boilers are covered)
 - 98% (about 183,300) would need to follow work practice standards such as annual tune-ups to minimize toxics
 - 2% (about 3,700) would need to meet emissions limits to minimize toxics



Boilers

- EPA's proposal would result in significant health benefits – mostly by reducing air pollution from less than one percent of all the boilers located in the United States.
- For these high emitting boilers, EPA is proposing targeted emission limits that are health protective and provide industry with practical, cost-effective options to meet the standards. Costs for these source units also will include compliance, monitoring, and recordkeeping.
- These limits are based on currently available technologies that are in use by sources across the country.
- Area source boilers that burn natural gas are not covered by these regulations. Generally, neither are small boilers located at small institutions such as churches and schools.



Boilers and CISWI

- These rules are developed under section 112 and 129 of the Clean Air Act, two provisions that target toxic air pollution.
- Under these sections, EPA is required to set technology-based standards for toxic air pollutants, reflective of levels achieved by the best performing sources.
- For CISWI units, EPA is proposing revised emission limits for certain units that reflect the best performing commercial and industrial waste incineration units.
- Existing boilers at major source facilities have three years to comply with these standards and can obtain an additional year beyond that, if technology cannot be installed in time. Existing CISWI units have up to 5 years to comply.



Proposed Changes to March 2011 Boiler and CISWI Rules

- Maintain significant health benefits
- Propose standards that are based on the best available data and methodologies
- Provide additional flexibility where data warrant it
- Propose achievable emission limits
 - See tables of the newly proposed limits for boilers



Petitions and Data Submissions

- During the reconsideration process, EPA received more than 50 petitions for reconsideration from industries and industry groups, industrial energy efficiency groups, states, and Sierra Club

 - Boiler major source rule: 29 petitions

 - Boiler area source rule: 10 petitions

 - CISWI rule: 17 petitions

- As of July 15, 2011, industry provided additional data for EPA's analysis and consideration

 - Boiler major source rule:

 - Data on 150 emission tests from 108 units, including at least 8 tests each for mercury, particulate matter (PM), dioxins, carbon monoxide (CO), hydrogen chloride (HCl), and total selected metals



Petitions and Data Submissions

- Boiler major source rule continued:

CO continuous emission monitoring system (CEMS) data

Data on mercury, chlorine, and metals fuel analyses from 2 facilities and a metals analysis from 1 facility

CISWI rule:

Approximately 20 data submissions, with majority pertaining to energy recovery units



Proposed Changes: Boilers and Process Heaters at Major Sources

- There are approximately 14,000 major source boilers in the U.S. 88% of these would be required to conduct periodic tune-ups and one-time energy audits. 12% would be required to take steps to meet emission standards if they do not already meet the standards.
- Create new subcategories for light and heavy industrial liquids to reflect design differences in the boilers that burn these fuels. This change will improve the standards' achievability.
- Set new emissions limits for PM that are different for each solid fuel subcategory (e.g., biomass, coal) to better reflect real-world operating conditions.
- Allow an alternative total selective metals emissions limit to regulate air toxics, allowing more flexibility and decreasing compliance costs.



Proposed Changes: Boilers and Process Heaters at Major Sources

- Set new emissions limits for carbon monoxide based on newly submitted data that shows CO emissions from boilers vary greatly. EPA is proposing to set new limits to more adequately capture that variability.
- Replace numeric dioxin emissions limits with work practice standards based on a robust analysis that shows dioxin emissions are below levels that can be accurately detected.
- Increase flexibility in compliance monitoring to remove continuous emissions monitoring requirements for particulate pollution for biomass units and to propose a carbon monoxide standard that is based on either stack testing or continuous monitoring.



Proposed Changes: Boilers and Process Heaters at Major Sources

- Revise emissions limits for units located outside the continental United States to better reflect the unique operating conditions associated with these units.
- Continue to allow units burning clean gases to qualify for work practice standards instead of numeric emissions limits, thus maintaining flexibility and achievability.



Proposed Changes: Boilers at Area Sources

- EPA is continuing to require work practice standards, including routine maintenance and tune-ups for 98% of area source boilers. Only 2% of area source boilers would need to meet emissions limits.
- Change initial tune-up schedule: to increase flexibility for most of these sources, EPA is proposing to create additional subcategories and require initial compliance tune-ups after two years instead of after the first year.
- Alter tune-up schedule for seasonal use and temporary area source units: EPA is proposing to require seasonal operators to conduct tune-ups every five years instead of every other year. These units are operated less frequently and have less of a need to conduct tune-ups than boilers that are operated year-round.



Proposed Changes: CISWI

- Revise emission limits including those for dioxin and mercury.
- Clarify what units would fall under the definition of CISWI.
- Revise some monitoring requirements which will provide facilities with more flexibility in achieving standards and lower compliance costs.

Questions and Answers

