

existing solid fuel boilers and process heaters in this subcategory.

2. Existing Liquid Fuel Boilers and Process Heaters

Emission data for liquid subcategories were inadequate to identify the best performing sources for reasons described previously in this preamble. We also found no State regulations or permits which specifically limit HAP emissions from these sources. Therefore, we examined control technology information to identify a MACT floor. We found that less than 6 percent of the units in each of the liquid subcategories used control techniques that would reduce non-mercury metallic HAP and PM, mercury, organic HAP, or acid gases, (such as HCl). Therefore, we concluded, for each subcategory of liquid fueled boilers and process heaters, that the MACT floor is no emission reductions for non-mercury metallic HAP, mercury, inorganic HAP, and organic HAP.

3. Existing Gaseous Fuel Boilers and Process Heaters

Emission data for gas subcategories were inadequate to identify the best performing sources for reasons described in section III.D of this preamble. We also found no State regulations or permits that specifically limit HAP emissions from these sources. Therefore, we examined control technology information to identify a MACT floor. We found that no existing units in the gaseous fuel-fired subcategories were using control technologies that achieve consistently lower emission rates than uncontrolled sources for any of the pollutant groups of interest. Therefore, we are unable to identify the best performing 12 percent of units in the subcategories. Consequently, EPA determined that no existing source MACT floor based on control technologies could be identified for gaseous fuel-fired units. Therefore, we concluded the MACT floor for existing sources in this subcategory is no emissions reductions for non-mercury metallic HAP, mercury, inorganic HAP, and organic HAP.

E. How Did EPA Consider Beyond-the-Floor Options for Existing Units?

Once the MACT floor determinations were done for each subcategory, EPA considered various regulatory options more stringent than the MACT floor level of control (*i.e.*, technologies or other work practices that could result in lower emissions) for the different subcategories.

Maintaining and monitoring CO levels was identified as a possible control for

organic HAP. In addition to looking at whether CO limits should be a part of the MACT floor, we looked at this option as a beyond-the-floor option. However, information was not available to estimate the HAP emissions reductions that would be associated with CO monitoring and emission limits. This option would also require a high cost to install and operate CO monitors. Given the cost and the uncertain emissions reductions that might be achieved, we chose to not require CO monitoring and emission limits as MACT.

The following sections discuss the beyond-the-floor options analyzed to control emissions of metallic HAP, mercury, and inorganic HAP. Based on the analysis in these sections, EPA decided to not go beyond the MACT floor level of control for the proposed rule for any of the subcategories of existing sources. A detailed description of the beyond-the-floor consideration is in the memorandum "Methodology for Estimating Cost and Emissions Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants" in the docket.

1. Existing Solid Fuel Units

a. Large Units—Heat Inputs Greater than 10 MMBtu/hr. Besides fuel switching, we identified a better designed and operated fabric filter (the MACT floor for new units) as a control technology that could achieve greater emissions reductions of metallic HAP and PM emissions than the MACT floor level of control. Consequently, EPA analyzed the emissions reductions and additional cost of adopting an emission limit representative of the performance of a unit with a better designed and operated fabric filter. The additional annualized cost to comply with this emission limit was estimated to be approximately 500 million dollars with an additional emission reduction of approximately 100 tons of metallic HAP. The results indicated that while additional emissions reductions would be realized, the costs would be too high to consider it a feasible beyond-the-floor option. Nonair quality health, environmental impacts, and energy effects were not significant factors, because there would be little difference in the nonair quality health and environmental impacts of replacing existing fabric filters with improved performance fabric filters. Therefore, we did not select these controls as MACT. Fuel switching was not considered a feasible beyond-the-floor option for the same reasons described previously in this preamble.

We identified packed bed scrubbers as a control technology that could achieve greater emissions reductions of inorganic HAP, like HCl, than the MACT floor level of control. Consequently, EPA analyzed the emissions reductions and additional cost of adopting an emission limit representative of the performance of a unit with a packed bed scrubber. The additional annualized cost to comply with this emission limit (using a packed bed scrubber) was estimated to be approximately 900 million dollars with an additional emission reduction of approximately 20,000 tons of HCl. The results indicated that while additional emissions reductions would be realized, the costs would be too high to consider it a feasible beyond-the-floor option. Nonair quality health, environmental impacts, and energy effects were not significant factors, because there would be little difference in the nonair quality health and environmental impacts between packed bed scrubbers and the technology that is likely to be used to meet the MACT floor level of control. Therefore, we did not select these controls as MACT.

In reviewing potential regulatory options for existing sources, EPA identified one existing industrial boiler that was using a technology, carbon injection, used in other industries to achieve greater control of mercury emissions than the MACT floor level of control. However, emission data indicated that this unit was not achieving mercury emission reduction. The EPA does not have information that would show carbon injection is effective for reducing mercury emissions from industrial, commercial, and institutional boilers and process heaters. Therefore, carbon injection was not evaluated as a regulatory options.

However, EPA requests comments on whether carbon injection should be considered as a beyond-the-floor option and whether existing industrial, commercial, or institutional boilers and process heaters could use carbon injection technology, or other control techniques to consistently achieve mercury emission levels that are lower than levels from similar sources with the MACT floor level of control. Comments should include information on emissions, current demonstrated applications, and costs, including retrofit costs. The EPA is aware that research continues on ways to improve mercury capture by PM controls, sorbent injection, and the development of novel techniques. The EPA requests comment and information on the effectiveness of such control