

data available for boilers and process heaters controlled by these technologies to determine achievable emission levels for PM (as a surrogate for non-mercury metallic HAP), total selected non-mercury metallic HAP, mercury, HCl (as a surrogate for inorganic HAP), and CO (as a surrogate for organic HAP). First, we identified the units using the best control technology for which we had emissions data. We then averaged the emission data for any unit with multiple test results, and rank these units based on the unit by unit average measured emissions performance. Then, we identified the unit with the best average measured emissions performance. Finally, to estimate the emission control achievable by this unit, we applied a variability factor to the average measured emissions performance of the best unit. For fuel dependent HAP emissions (mercury and HCl), we calculated the variability factor by looking at data on HAP variability in coal from an analysis of coal properties obtained through a utility-related information collection request. We derived the fuel dependent variability factor by dividing the highest observed HAP concentration by the lowest observed HAP concentration from the utility coal analysis. There is no reason to expect that utilities use significantly different coal than is available to industrial boilers and process heaters, and coal is the solid fuel that is routinely used in such units that has generally the greatest degree of HAP variability. Once we calculated the fuel dependent variability factors, we applied these factors to the average measured emissions performance of the unit with the best data to derive the MACT floor level of control. This approach reasonably estimates the best source's level of control, adjusted for unavoidable variation in fuel characteristics which have a direct impact on emissions.

For non-fuel dependent HAP emissions (PM/metallic HAP), we calculated the appropriate variability factor in the same general manner as we did for existing units. We calculated a variability factor for each unit using the same control technology as the unit with the best emissions data, and then calculated the overall variability in the measured emissions from units using this technology by averaging all the individual unit variability factors. Finally, we applied this overall variability factor to the average measured emissions performance of the unit with the best emissions data.

For new unit subcategories where no units in the subcategory employed any type of control technology, we could not

identify data to represent the level of control of the best controlled similar unit. Accordingly, the MACT floor level of control for such subcategories is no emissions reductions.

A detailed description of the MACT floor determination is in the memorandum "MACT Floor Analysis for Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants" in the docket.

1. New Solid Fuel-Fired Units

a. Large Units—Heat Inputs Greater than 10 MMBtu/hr. The most effective control technology identified for removing non-mercury metallic HAP and PM is fabric filters. Therefore, because there are no options reasonably available for reducing non-mercury metallic HAP emissions other than add-on control, we consider a source with a fabric filter to be the best controlled similar unit in this subcategory for purposes of non-mercury metallic HAP and PM emissions. Thus, it is appropriate to use the measured performance of the best controlled source with a fabric filter as the basis for establishing the MACT floor for non-mercury metallic HAP and PM for new boilers and process heaters in this subcategory.

As described earlier, a PM level is set as a surrogate for non-mercury metallic HAP. The MACT floor emission level based on PM test data from the solid fuel unit with a fabric filter representing the best controlled similar unit, and incorporating operational variability, is 0.026 lb PM/MMBtu. We are also providing an alternative metals limit of 0.0001 lb metals/MMBtu which can be used to show compliance in cases where metals HAP emissions are low in proportion to PM emissions. This is because, according to the emissions database, some biomass units have low metals content but high PM emissions. The emission level for metals was selected from metals test data associated with PM emission tests from fabric filters that met the MACT floor PM emission level.

The most effective control technologies identified for removing inorganic HAP including acid gases, such as HCl, are wet or dry scrubbers. Wet scrubbers is a generic term that is most often used to describe venturi scrubbers, but can include packed bed scrubbers, impingement scrubbers, etc. One percent of boilers and process heaters in this subcategory reported using a packed bed scrubber. Emission test data from other industries suggests that packed bed scrubbers achieve

consistently lower emission levels than other types of wet scrubbers. Because there are no options reasonably available for reducing HCl emissions other than add-on control, we consider a source with a packed bed scrubber to be the best controlled similar source in this subcategory for purpose of HCl emissions. The MACT floor emission level based on HCl test data from the solid fuel unit with a wet scrubber representing the best controlled similar unit, and incorporating operational variability, is 0.02 lb HCl/MMBtu.

For mercury control, one technology, carbon injection, that has demonstrated mercury reductions in other source categories (*i.e.*, municipal waste combustors), was identified as being used on one existing industrial boiler. However, test data on this carbon injection system indicated that this unit was not achieving mercury emissions reductions. Therefore, we did not consider carbon injection to be a MACT floor control technology for industrial, commercial, and institutional boilers and process heaters. Data from electric utility boilers indicate that fabric filters are the most effective technology for controlling mercury emissions. Therefore, we consider a source with a fabric filter to be the best controlled similar source in this subcategory for purpose of mercury emissions. The MACT floor emission level based on mercury test data from the solid fuel unit with a fabric filter representing the best controlled similar unit, and incorporating operational variability, is 0.000003 lb mercury/MMBtu.

Although EPA used information from utility boilers to conclude that fabric filters are the most effective control technology for controlling mercury emissions, this same information suggests that different fuel characteristics (*e.g.* mercury and chlorine content of the fuel burned) can lead to different outlet Hg concentrations and different control efficiencies for equivalent control devices. We have information about the general type of fuel being burned during the emission tests. However, we have no detailed information about the specific characteristics (such as mercury or chlorine content) of the fuel being burned during the emissions tests for the best controlled source. Nonetheless, EPA believes that the use of variability factors adequately accounts for potential variations in fuel mercury and chloride content.

However, because we have very limited data on actual emissions from industrial boilers and process heaters, the Agency is soliciting comment on whether the variability analysis in the