

emissions reductions, and any nonair quality health and environmental impacts and energy requirements, determined is achievable for each category. For existing sources, MACT cannot be less stringent than the average emission limitation achieved by the best performing 12 percent of existing sources for categories and subcategories with 30 or more sources. This requirement constitutes the MACT floor for existing boilers and process heaters. However, EPA may not consider costs or other impacts in determining the MACT floor. The EPA must consider cost, nonair quality health and environmental impacts, and energy requirements in connection with any standards that are more stringent than the MACT floor (beyond-the-floor controls).

D. How Did EPA Determine the MACT Floor for Existing Units?

We considered several approaches to identifying MACT floor for existing industrial, commercial, and institutional boilers and process heaters. Based on recent court decisions, in most cases the most acceptable approach for determining the MACT floor is likely to involve primarily the consideration of available emissions test data. Using such an approach, EPA might calculate the MACT floor for a category of sources by ranking the emission test results from units within the category from lowest to highest, and then taking the numerical average of the test results from the best performing (lowest emitting) 12 percent of sources.

However, after review of the available HAP emission test data, we determined that it was inappropriate to use this MACT floor approach to establish emission limits for boilers and process heaters. The main problem with using only the HAP emissions data is that, based on the test data alone, uncontrolled units (or units with low efficiency add-on controls) were frequently identified as being among the best performing 12 percent of sources in a subcategory, while many units with high efficiency controls were not. However, these uncontrolled or poorly controlled units are not truly among the best controlled units in the category. Rather, the emissions from these units are relatively low because of particular characteristics of the fuel that they burn, that cannot reasonably be replicated by other units in the category or subcategory. In fact, we expect just this kind of variability in emission rates given the variety of fuel types included within each subcategory of boilers and process heaters.

A review of fuel analyses indicate that the concentration of HAP (metals, HCl,

mercury) vary greatly, not only between fuel types, but also within each fuel type. Some fuels even have pollutant concentration levels below the detection limit of the applicable analytical test method. Therefore, a unit without any add-on controls, but burning a fuel containing lower amounts of HAP, can have emission levels that are lower than the emissions from a unit with the best available add-on controls. If only the available HAP emissions data are used, the resulting MACT floor levels would be unachievable for many existing units, even those that employ the most effective available emission control technology. For example, an uncontrolled boiler burning wood may have lower emissions of mercury than a well controlled boiler burning coal. In fact, coal burning boilers may never be able to achieve the mercury HAP level of the wood-fired unit, no matter what add-on controls are used. In this instance, establishing a MACT standard based on emission data alone would force the coal units to switch to different fuels to achieve the MACT limits. As discussed later in this section, fuel switching is not an appropriate or available control option for identifying the MACT floors for boilers and process heaters.

Another problem with using only emissions data is that there is no HAP emissions information available to the Agency for some of the subcategories. This is consistent with the fact that units in these source categories have not historically been required to test for HAP emissions.

We also considered using HAP emission limits contained in State regulations and permits as a surrogate for actual emission data in order to identify the emissions levels from the best performing units in the category for purposes of establishing MACT standards. However, we found no State regulations or State permits that specifically limit HAP emissions from these sources.

Consequently, we concluded that the most appropriate approach for determining MACT floors for boilers and process heaters was to look at the control options used by the units within each subcategory in order to identify the best performing units. Information was available regarding the emission control options employed by the population of boilers identified by the EPA. We considered several possible control controls (*i.e.*, factors that influence emissions), including fuel substitution, process changes and work practices, and add-on control technologies.

We considered first whether fuel switching would be an appropriate

control option for sources in each subcategory. We considered the feasibility of fuel switching to other fuels used in the subcategory and to fuels from other subcategories. This consideration included determining whether switching fuels would achieve lower HAP emissions. A second consideration was whether fuel switching could be technically achieved by boilers and process heaters in the subcategory considering the existing design of boilers and process heaters. We also considered the availability of various types of fuel.

After considering these factors, we determined that fuel switching was not an appropriate control technology for purposes of determining the MACT floor level of control for any subcategory. This decision was based on the overall effect of fuel switching on HAP emissions, technical and design considerations discussed previously in this preamble, and concerns about fuel availability.

Based on the data available in the emissions database, we determined that while fuel switching from solid fuels to gaseous or liquid fuels would decrease PM and some metals emissions, emissions of some organic HAP would increase, resulting in uncertain benefits. This determination is discussed in the memorandum "Development of Fuel Switching Costs and Emission Reductions for Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants" located in the docket. We believe that it is inappropriate in a MACT rulemaking to consider as MACT a control option that potentially will decrease emissions of one HAP while increasing emissions of another HAP. In order to adopt such a strategy, EPA would need to assess the relative risk associated with each HAP emitted, and determine whether requiring the control in question would result in overall lower risk. Such an analysis is not appropriate at this stage in the regulatory process.

A similar determination was made when considering fuel switching to cleaner fuels within a subcategory. For example, the term "clean coal" refers to coal that is lower in sulfur content and not necessarily lower in HAP content. Data gathered by EPA also indicates that within specific coal types HAP content can vary significantly. Switching to a low sulfur coal may actually increase emissions of some HAP. Therefore, it is not appropriate for EPA to include fuel switching to a low sulfur coal as part of the MACT standards for boilers and process heaters. Fuel switching from coal to biomass would result in similar