

facilities in the PCWP industry, we are not aware of any demonstrated pollution prevention techniques that can be universally applied across the industry. Furthermore, we have no information on the degree of emissions reduction that can be achieved through pollution prevention measures. The PCWP facilities use add-on control devices because there currently are no feasible pollution prevention measures. Therefore, we focused our analysis on the performance of add-on control devices. We reviewed the available data on control device performance to determine which add-on control systems are best at reducing HAP emissions. We focused our analysis on THC, formaldehyde, and methanol because these three pollutants are the most prevalent pollutants emitted from the PCWP industry and represent the majority of the available data on control device performance. The design and operating factors that affect a control system's ability to reduce emissions of formaldehyde, methanol, or THC are generally the same. For example, an RTO designed to reduce THC emissions will also reduce formaldehyde or methanol emissions.

Based on a review of the available control device performance data for the PCWP industry, we concluded that only two types of add-on air pollution control devices (APCD) consistently and continuously reduced HAP emissions: incineration-based controls (including RTOs, RCOs, and incineration of pollutants in onsite process combustion equipment used to control emissions from various PCWP process units) and biofilters (used to control PCWP press emissions). The control device efficiency data showed that APCD installed for particulate matter (PM) abatement had no effect on gaseous HAP or THC emissions. These APCD include cyclones, multiclones (or multicyclones), baghouses (or fabric filters), and electrified filter beds (EFB). The performance data for wet electrostatic precipitators (WESP) and wet scrubbers installed for PM control also showed no effect on HAP and THC emissions. These wet systems may achieve short-term reductions in THC or gaseous HAP emissions, however, the HAP and THC control efficiency data, which range from slightly positive to negative values, indicate that the ability of these wet systems to absorb water-soluble compounds (such as formaldehyde) diminishes as the recirculating scrubbing liquid becomes saturated with these compounds.

The performance data for the incineration-based controls and biofilters showed methanol and

formaldehyde emissions reductions equal to or greater than 90 percent, except in those cases where the pollutant loadings of the emission stream entering the control systems were very low. The performance data for THC showed that incineration-based control systems could achieve THC emissions reductions equal to or greater than 90 percent. The THC emissions reductions achieved with biofilters varied somewhat, with an average THC reduction of about 80 percent. Although biofilters are less effective in reducing some of the less water-soluble VOC compounds, such as pinenes, that make up a portion of the THC measurements, they can achieve HAP emissions reductions equal to or greater than 90 percent. These emissions reductions are reported only for biofilters treating emissions from presses at PCWP facilities. No PCWP process units other than presses are currently using biofilters to reduce air pollution. Both incineration-based controls and biofilters can achieve identical formaldehyde and methanol emissions reductions.

## 2. Ranking of Process Units

We ranked the process units within each process unit group according to the HAP control devices that were applied. Information on the number of process units nationwide and the types of add-on control devices applied to process units was based primarily on responses to a survey of the industry.

When we ranked the process units, we treated process units equipped with any type of incineration-based control system or biofilters as being equivalent with respect to their potential to reduce HAP emissions. We ranked the process units by control device rather than actual unit-specific emissions reductions because we have limited inlet/outlet data on which to calculate control efficiency. Based on available information (e.g., RTO operating temperatures), we are not aware of any significant design or operational differences among each type of control system evaluated that would affect the ranking of process units. Furthermore, we are not aware of factors other than the type of control system used that would significantly affect the ranking of process units.

## 3. Identifying Control Technologies To Establish the MACT Floor

We established MACT floor control levels by applying the floor procedures to similar process units. We believe that this approach results in the closest approximation of the true sourcewide MACT floor.

With a few exceptions, there were at least 30 process units in each process unit group. As discussed in section I.C, when there are at least 30 sources in the source category, the MACT floor for existing sources is equivalent to the average emission limitation achieved by the best-performing 12 percent of existing sources in that group. Our interpretation of the "average emission limitation" is that it is a measure of central tendency, such as the median. If the median is used when there are at least 30 process units in a process unit group, then the emission level achievable by the process unit and its control system that is at the bottom of the top 6 percent of the best-performing process units (i.e., the 94th percentile) represents the MACT floor control level for that component of the sourcewide floor. For example, there are approximately 303 softwood veneer dryers nationwide, and HAP emissions from approximately 64 of these dryers (21 percent nationwide) are controlled using incineration-based control systems. The HAP emissions from the remainder of the softwood veneer dryers are uncontrolled. In this example, the 94th percentile is represented by the control system applied to the softwood plywood dryer ranked at number 18 ( $18/303 = 6$  percent). However, incineration-based controls are also used by softwood veneer dryers ranked below the 94th percentile. Assuming that there are no significant design or operational differences between the different types of incineration-based control systems that would affect their performance, we would consider the incineration-based control technologies as being equivalent for control of HAP emissions. Thus, all of the softwood veneer dryers equipped with incineration-based control systems would be representative of the MACT floor level of control for softwood veneer dryers.

For those process unit groups where there were fewer than 30 but at least five process units, such as hardboard ovens, the emission level achievable by the process unit and its control system that is the median of the best-performing five sources represents the MACT floor level of control. For example, the MACT floor level of control for fiberboard mat dryers is no emissions reductions because there are ten fiberboard mat dryers nationwide, and emissions from only two of the ten fiberboard mat dryers are controlled (both via incineration). Therefore, the top five fiberboard mat dryers include the two that are controlled, plus three that are uncontrolled. In this example, the