

premix combustion turbines are using oxidation catalyst emission control, we lack specific data regarding the performance of turbines with such controls. The HAP concentration in the lean premix combustion turbine exhaust is very low and, therefore, would be difficult to measure if it were further reduced through the installation of an oxidation catalyst. Due to the low HAP levels, the cost per ton of HAP removed would be very high. We concluded, therefore, that MACT for new stationary lean premix combustion turbines is equivalent to the MACT floor.

5. MACT for Other Subcategories

Although the proposed rule would apply to all stationary combustion turbines located at major sources of HAP emissions, emergency stationary combustion turbines, limited use stationary combustion turbines, stationary combustion turbines which fire landfill gas or digester gas as their primary fuel, and stationary combustion turbines of less than 1 MW rated peak power output are not required to meet the emission limitations or operating limitations.

For each of the subcategories of stationary combustion turbines, as mentioned earlier, we have concerns about the applicability of emission control technology. For example, emergency stationary combustion turbines operate infrequently. In addition, when called upon to operate they must respond immediately without failure and without lengthy startup periods. This infrequent operation limits the applicability of HAP emission control technology.

Limited use stationary combustion turbines also operate infrequently. As with emergency stationary combustion turbines, it is this infrequent operation that limits the applicability of HAP emission control technology.

Landfill and digester gases contain a family of silicon based gases called siloxanes. Combustion of siloxanes forms compounds that can foul post-combustion catalysts, rendering catalysts inoperable within a very short time period. Pretreatment of exhaust gases to remove siloxanes was investigated. However, no pretreatment systems are in use and their long term effectiveness is unknown. We also considered fuel switching for this subcategory of turbines. Switching to a different fuel such as natural gas or diesel would potentially allow the turbine to apply an oxidation catalyst emission control device. However, fuel switching would defeat the purpose of using this type of fuel which would then either be allowed to escape

uncontrolled or would be burned in a flare with no energy recovery. We believe that switching landfill or digester gas to another fuel is inappropriate and is an environmentally inferior option.

For stationary combustion turbines of less than 1 MW rated peak power output, we have concerns about the effectiveness of scaling down the oxidation catalyst emission control technology. Just as there are often unforeseen problems associated with scaling up a technology, there can be problems associated with scaling down a technology.

As a result, we identified subcategories for each of these types of stationary combustion turbines and investigated MACT floors and MACT for each subcategory. As expected, since we identified these types of stationary combustion turbines as separate subcategories based on concerns about the applicability of emission control technology, we found no stationary combustion turbines in these subcategories using any emission control technology to reduce HAP emissions. As discussed above, we are not aware of any work practices that might constitute a MACT floor, nor did we find that the use of a particular fuel results in HAP emissions reductions. The MACT floor, therefore, for each of these subcategories is no emissions reduction.

Despite our concerns with the applicability of emission control technology, we examined the cost per ton of HAP removed for these subcategories. Whether our concerns are warranted or not, we consider the incremental cost per ton of HAP removed excessive—primarily because of the very small reduction in HAP emissions that would result.

We also considered the nonair health, environmental, and energy impacts of an oxidation catalyst system, as discussed previously in this preamble, and concluded that there would be only a small energy impact and no nonair health or environmental impacts. However, as stated above, we did not adopt this regulatory option due to cost considerations and concerns about the applicability of this technology to these subcategories. We were not able to identify any other means of achieving HAP emissions reductions for these subcategories.

As a result, for all of these reasons, we conclude that MACT for these subcategories is the MACT floor (*i.e.*, no emissions reductions).

F. How Did We Select the Format of the Standard for New Diffusion Flame Combustion Turbines?

We are proposing two options for complying with the standard for new diffusion flame combustion turbines. You may reduce CO by 95 percent if you use an oxidation catalyst emission control device, or reduce the concentration of formaldehyde in the exhaust from the turbine to 43 ppb by volume or less, dry basis, at 15 percent oxygen.

We considered proposing an emission limitation for HAP, but are proposing a CO emission reduction limitation as a surrogate for a HAP emission limitation. We have decided to propose the use of the CO emission reduction limitation as a surrogate for the HAP emission limitation, because CO monitoring is currently being used by combustion turbine owners and operators, it is significantly easier and less expensive to measure and monitor CO than to measure and monitor each HAP, and because we believe that CO reduction is a good measure of performance of the oxidation catalyst emission control device. Monitoring equipment for CO is readily available, which is not the case for HAP monitoring equipment.

We are also proposing a percent reduction in CO emissions as the emission limitation, rather than a single value for CO emissions. The data upon which MACT are based show that while the level of CO emissions entering an oxidation catalyst emission control device may vary, the oxidation catalyst emission control device is able to maintain a CO emission reduction efficiency of 95 percent or more.

We are also proposing an alternative emission limitation for formaldehyde emissions. You may choose to comply with the emission limitation for CO emission reduction (if you use an oxidation catalyst emission control device) or you may choose to comply with the emission limitation for formaldehyde emission concentration (if you use some means other than an oxidation catalyst control device to reduce HAP emissions). We would like to promote the development and eventual use of alternative emission control technologies (including pollution prevention technologies) to reduce HAP emissions, and we believe an alternative emission limitation written in terms of formaldehyde emissions will serve to do so. We are soliciting information on HAP and CO emissions data from alternative emission control technologies during the comment period. We are particularly interested in obtaining test reports