

Summary of Utility MACT Rule

On December 21st, EPA released a final maximum achievable control technology (MACT) rule for electric utilities, now dubbed the “Mercury and Air Toxics Standards” or “MATS.” As with all MACT standards, the rule imposes stringent limits on the emission of hazardous air pollutants from a particular industry that will require the installation of costly pollution control equipment. The final rule contains a number of important improvements as compared to EPA’s original proposal. However, the emission limits, along with the short deadlines for compliance, are expected to present significant challenges for owners and operators of existing coal- and oil-fired electric utility units and could present a barrier to the construction of new coal-fired generators.

HAP and HAP-Surrogate Emission Limits

The new standards, initially proposed in May of this year, seek to regulate four categories of hazardous air pollutants (HAPs) emitted by coal- or oil-fired electric generating units (EGUs), namely mercury, HAP metals, acid gases, and organic HAP. Most of the new standards are based on what EPA refers to as the “MACT floor” – for existing units, the average performance of the top 12 percent of best performing sources in the industry, and for new units, the performance achieved by the best performing similar source.

For coal-fired units, EPA’s proposed rule relied on “surrogate” pollutants for two categories of HAP that, when controlled to certain limits, would ensure that other similar pollutants in the relevant category would be controlled as well. Specifically, EPA determined that limits on particulate matter (PM) (which is not a HAP) would ensure effective control of non-mercury metals, and that limits on hydrogen chloride (HCl) (which is a HAP) would ensure effective control of all acid gases. Because mercury has many unique characteristics, EPA established a separate limit just for mercury emissions from coal-fired units, and also proposed a separate mercury limit for units that fire coal with a heat content of less than 8,300 Btus per pound. For oil-fired units, EPA proposed to regulate HAP more directly with specific proposed limits for total HAP metals (which includes mercury), HCl, and hydrogen fluoride (HF). However, EPA decided that emission limits were impractical for organic HAP emissions, such as dioxins and furans, and proposed work practice standards for all source categories instead, given that emissions of such compounds from EGUs are generally so low that they cannot be accurately measured.

The emissions standards for *existing* coal-fired units did not change from the proposal to the final rule, with the exception of a correction to the originally proposed mercury standard to raise it to 1.2 pounds per trillion Btu heat input (lb/TBtu). EPA also finalized the proposed separate mercury limit for units that utilize “low rank virgin coal,” establishing a “beyond-the-floor” limit of 4.0 lb/TBu. Although the low rank coal limit is less stringent than the high rank coal limit, it is more stringent than the limit would have been if EPA had simply relied on the “MACT floor” approach, which would have resulted in a limit nearly three times higher. For oil-fired units, EPA relaxed the existing unit HCl and HF limits significantly – the HF limit is twice the proposed limit, and the HCl limit is an order of magnitude higher.

However, EPA finalized even more stringent standards for most *new* units. For new coal-fired units, EPA selected a different “best performing similar source” upon which to determine the new unit “MACT floor.” Although the re-calculation resulted in a slightly higher HCl limit, it also resulted in a much more stringent PM limit. In fact, the final PM limit for new coal-fired units is now set at only three times the detection limit of the test that will be used to determine compliance, which raises significant questions as to whether vendors will be able to guarantee performance at such incredibly low levels (equating to approximately 0.00078 lb/mmBtu). Given the stringency of the new unit limits for coal-fired units, many in the industry believe that the rule effectively prohibits the construction of new coal-fired power plants. EPA also increased the stringency of the new unit limits for oil-fired units as well, although not nearly to the same extent. Even so, EPA does not expect any new oil-fired units to be constructed in the near future, leaving natural gas as the only option for new fossil-fired generating capacity.

EPA also made a very important revision to the form of the particulate matter emission limit by expressing it in terms of “filterable” PM only. This revision to the proposed rule will eliminate the need to consider the more difficult to measure “condensable” fraction of the pollutant. EPA justified its decision to ignore “condensable” PM by pointing out that all of the non-mercury metal pollutants that the PM surrogate is intended to represent are filterable particulates with the exception of selenium, which EPA believes will be sufficiently addressed by the controls required to address acid gases. EPA also adopted a filterable PM limit for oil-fired units as an option to replace the total hazardous metals limit initially proposed.

EPA’s final rule also offers several alternate emission limits that unit owners and operators can choose to meet instead of the limits described above. For instance, EPA proposed a sulfur dioxide (SO₂) emission limit as an alternate to the HCl-surrogate acid gas limit for coal-fired units equipped with a flue gas desulfurization (FGD) system. EPA’s final rule also offers two options for meeting the PM-surrogate metals limits – one involving a limit on total metals and another involving separate limits on each individual metal (although the oil-fired version of the alternate “total metals” limit also includes mercury). In addition, the final rule also has several “output based” alternate emission limits as well, expressed in pounds per megawatt-hour (lb/MWh) of electricity generated instead of pounds per million Btu (lb/mmBtu) of heat input.

Demonstrating Compliance

The compliance demonstration requirements have also been simplified significantly in the final rule. In general, source owners and operators may choose between continuous emission monitors (CEMS) or quarterly stack tests for all pollutants except for mercury. For mercury, all units are required to have a mercury CEMS or a sorbent trap monitoring system. For PM, units may choose between CEMS, quarterly stack tests, or annual stack tests combined with a continuous parameter monitoring system (CPMS). Although a CPMS will generally measure actual PM emissions from the unit, the emissions will not be expressed in the terms of the standard (*i.e.*, lb/mmBtu or lb/MWh) but rather serve as an operating parameter that can be correlated with periodic stack tests to demonstrate continuous compliance. Oil-fired units also received a new monitoring option in the final rule – rather than demonstrating compliance with

the HCl and HF limits directly, oil-fired units need only demonstrate that fuel moisture remains below 1 percent to avoid the need for quarterly stack tests.

Another significant change in the final rule is the treatment of startup, shutdown, and malfunction emissions. For periods of startup and shutdown, the final rule requires compliance with new “work practice standards” instead of the numeric standards that apply during normal operations. Although the exemption of startup and shutdown periods from the numeric standards is a welcome change to industry, EPA also revised the definitions of startup and shutdown to cover only those periods in which no electricity is being sold or used onsite, which may reduce the usefulness of the new exemption. For malfunctions, the rule continues to allow sources to assert a limited “affirmative defense” to liability during unavoidable malfunctions but also adds new detailed procedures for asserting the defense, including a requirement to conduct a root cause and report the results to EPA.

The final rule also allows a source with several EGUs in the same subcategory to average emissions across the units to demonstrate compliance with the numerical standards. In its proposal, EPA took comment on whether units utilizing such averaging procedures should also be subject to a 10 percent penalty, which would essentially hold averaging units to a more stringent emissions standard. In the final rule, EPA claims that it elected not to impose a more stringent standard on sources seeking to average emissions across multiple units, but it did adopt a different form for the mercury standard applicable to such units – 1.0 lb/TBtu on a 90-day average. Although the numerical limit itself is lower, EPA claims that the longer 90-day averaging period results in an equivalent level of stringency when compared to the 1.2 lb/TBtu limit single units must demonstrate over a 30-day averaging period. For the remaining pollutants, EPA maintained the same emissions limit and form regardless of whether a source relies on the emissions averaging provisions.

New Source Performance Standards

In addition to the HAP standards established under Section 112 of the Clean Air Act, the final MATS rule also revises the Section 111 New Source Performances Standard (NSPS) for EGUs, which addresses three non-HAP emissions – PM, SO₂, and nitrogen oxides (NO_x). EPA increased the stringency of the standards for these pollutants to ensure they represent the “best system of emission reduction,” EPA’s new term for the “best demonstrated technology” that generally defines NSPS limits. The new limits are each expressed as an output standard in lb/MWh, but the limits will only apply to facilities that are either newly constructed, reconstructed, or modified after May 3, 2011.

Deadlines for Compliance

The final rule, as expected, allows three years for sources to comply with the new standards, starting from the date sixty days after the rule is published in the Federal Register. Assuming the rule is published in January, sources will need to have all necessary pollution controls installed before March 2015 to meet the compliance deadline in the rule. However, EPA has endorsed the use of authority in the Clean Air Act for state permitting agencies to grant a fourth year to

comply if needed for the installation of controls, which EPA reads to include the installation of replacement power at the same site, or the installation of offsite controls, replacement power, or transmission lines where reliability risks arise.

EPA has also released a memorandum regarding its enforcement policy for “reliability-critical” units that may need even more time, even though EPA has indicated that it does not believe any additional time will be needed. Under that policy, EPA has promised not to impose civil penalties on owners and operators that need a fifth year to comply if they can demonstrate that controls cannot be installed in time and that shutting the unit down would violate established reliability standards. The usefulness of that policy, however, remains questionable, given that (i) a source must essentially admit to a violation to qualify, (ii) EPA will likely limit operation of the source severely to only those times when the grid is at risk, (iii) the policy will not prevent third party citizen suits that could be filed by environmental groups, and, (iv) like all enforcement policies, it could change at any time (particularly under a new EPA administration).

Asserted Health Benefits

EPA claims that its final MATS rule will generate health benefits that are up to nine times greater than the cost to the industry. However, 97% of the monetized benefits are based on the assumption that the PM “co-benefits” of the rule will prevent 11,000 premature deaths, despite the fact that the vast majority of the nation is in attainment with ambient air quality standards for PM, and despite the fact that the rule is being promulgated under a statutory provision designed to address HAP, not PM. EPA also claims that its rule will generate 8,000 jobs in the pollution control industry, but EPA admits that it cannot determine the potential impact to jobs in the economy as a whole and recognizes that many of those new jobs will be offset by job losses associated with the retirement of coal-fired units (which the industry estimates will be ten times higher than projected by EPA). Finally, although EPA claims its rule is primarily designed to address harms associated with mercury emissions, the mercury benefits calculated by EPA (\$4-6 *million*) pale in comparison even to the asserted \$9.6 *billion* cost to the industry, which the industry claims is grossly underestimated. The questions raised by EPA’s benefit calculations, and the many legal issues raised by industry in comments on the proposed rule, indicate challenges to the rule remain likely.

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