

Regulation of Air Toxics Under the 1990 Clean Air Act Amendments^{1/}

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I. Introduction

The 1990 Clean Air Act Amendments significantly revised the regulation of hazardous air pollutants under § 112. The old § 112 required EPA to identify hazardous air pollutants and promulgate health-based emission standards for each pollutant. The new § 112 requires EPA to regulate categories of sources using technology-based emission standards. Section 112 now specifically identifies 189 hazardous air pollutants, directs EPA to promulgate a list of the "major" and "area" source categories that emit those pollutants, and specifies a schedule within which EPA must promulgate emission standards for all source categories.

EPA has only just begun to implement the new air toxics provisions. This fall EPA promulgated a list of approximately 170 major and area sources including chemical manufacturers, polymers and resins producers, pharmaceutical producers, oil and natural gas producers, and petroleum refineries and proposed a schedule for regulating those sources. Synthetic organic chemical manufacturers will be among the first sources to be regulated. EPA's proposed hazardous organics national emission standard for hazardous air pollutants (hazardous organics NESHP or HON) may require synthetic organic chemical manufacturers to reduce emissions of as many as 149 hazardous air pollutants.

This paper will provide an overview of the new air toxics provisions including the HON, the early reductions program which enables sources to delay compliance with new regulations, and the modification provision which may compel sources to comply with new emission standards even sooner than otherwise required.

II. Overview of § 112

The new § 112 establishes a list of 189 hazardous air pollutants that must be regulated under the air toxics program. Clean Air Act ("CAA") § 112(b). The statute directs EPA to issue a list of categories and subcategories of "major" and "area" sources that emit those pollutants. Last summer, EPA promulgated a list of approximately 170 source categories to be regulated. See 57 Fed. Reg. 31,591 (July 16, 1992).

Section 112 distinguishes between "major" and "area" emission sources. A "major source" is defined as "any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering

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controls, in the aggregate 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants." CAA § 112(a)(1). An "area source" is any source of hazardous air pollutants that is not a major source. CAA § 112(a)(2).

Once a source is on the list, it will be subject to technology-based emission standards. EPA must establish emission standards for every source category on the list by the year 2000. For major sources, the emission standards will be based on the maximum degree of reduction in air toxic emissions achievable based on the best technology currently available for the source category in question (maximum achievable control technology or MACT). Existing sources subject to MACT standards will have to achieve the average emissions limitation achieved by the best performing 12 percent of the existing sources or the average emission limitation achieved by the best performing five existing sources if less than 30 sources are in the category. New sources must meet the emissions limitation achieved by the best performing plant.

EPA must also promulgate technology-based emission standards for area sources. The Act directs EPA to establish standards for area sources based on "generally available control technology" (GACT). In practice, this standard will probably be less stringent than the MACT standard for major sources.

The statute establishes a timeframe within which EPA must promulgate these emission standards and then requires EPA to promulgate a more specific schedule based on its own source category list. Section 112(e) requires EPA to promulgate emission standards for 40 source categories by November 15, 1992, for 25 percent of all source categories by 1994, for 50 percent of all source categories by November 1997, and for the remaining source categories by November 15, 2000. EPA issued its proposed regulatory schedule in September 1992. See 57 Fed. Reg. 44,147 (Sept. 24, 1992). According to the proposal, synthetic organic chemical manufacturers must be regulated by November 15, 1992. EPA missed this deadline but hopes to promulgate a final rule by the end of 1993.

While the Amendments added the concept of technology-based standards, they did not completely abolish health-based emission standards. By November 1996, EPA must investigate and report to Congress on the risks to public health remaining, or likely to remain, after application of MACT standards and make recommendations for legislation necessary to control those risks. CAA § 112(f)(1). The Agency must adopt residual risk-based standards if any source in a source category presents a risk to the maximum exposed individual of more than one in one million (1×10^6). The risk-based standards must protect public health with an ample margin of safety and prevent adverse environmental effects. Furthermore, the Act contains a savings provision for the health-based emission standards promulgated under the old § 112. See CAA § 112(q). EPA must, however, review and revise those pre-1990 standards, if appropriate, before the year 2000.

III. The Early Reductions Program

Sources may delay compliance with MACT standards by participating in the early reductions program under § 112(i). CAA § 112(i)(5); 57 Fed. Reg. 61,970 (December 29, 1992). An existing source can qualify for a six-year compliance extension by voluntarily reducing hazardous air pollutant emissions by 90 percent (95 percent for particulates) before EPA proposes a MACT standard applicable to the source. Sources subject to MACT standards

proposed before 1994, such as synthetic organic chemical manufacturers, may participate in the early reductions program by making an enforceable commitment to meet program requirements by January 1, 1994. Sources that qualify for the extension will be subject to an alternative emission limitation (AEL) which will be included in the sources' title V operating permit.

To encourage sources to participate, EPA has attempted to build some flexibility into this program. The final early reductions rule uses a flexible definition of "source" to enable a facility to choose whether to enroll the entire facility in the program or limit participation to certain process units provided that the emission reductions constitute significant reductions from the entire facility. The source may also choose the baseline year for calculating reductions, but it may be no earlier than 1987 unless the source can show that an earlier year (1985 or 1986) is more representative. Finally, a source may take credit for reductions taken for any reason, whether voluntary or involuntary.

Most sources interested in participating in the early reductions program may apply through the state's title V permit program. Sources subject to MACT standards proposed before 1994, however, may have to apply for a "specialty permit" through EPA because state title V permit programs will not likely be in place before January 1, 1994, the date by which those sources must make an enforceable commitment in order to participate in the program.

IV. Modifications & Reconstruction of "Major Sources"

While the early reductions program enables sources to delay compliance with MACT standards, some sources may become subject to MACT standards sooner than would otherwise be expected because of § 112's modification provision. Under § 112(g), once a state operating permit program is in place, if a modification to a "major source" is proposed and that modification would increase actual emissions of any hazardous air pollutant by more than a de minimis amount, then the modification cannot begin until the facility demonstrates that it will meet the MACT for existing sources. Because EPA has not yet defined "source" for purposes of MACT standards, it is unclear whether a modification would trigger MACT compliance for the specific emission point being modified or for the plant as a whole.

This modification provision differs from that under the new source review program in that not all modifications will trigger the rule, only those that will cause more than a de minimis increase in actual emissions. Section 112(a)(5) defines "modification" as "any physical change in, or change in the method of operation of, a major source which increases the actual emissions of any hazardous air pollutant emitted by such source by more than a de minimis amount or which results in the emission of any hazardous air pollutant not previously emitted by more than a de minimis amount." EPA has not yet defined de minimis for purposes of this section.

Even if the modification would cause more than a de minimis increase in emissions, sources making modifications can avoid demonstrating compliance with MACT standards by offsetting any increase in hazardous air pollutants by decreasing other hazardous emissions. More specifically, a physical or operational change that would otherwise fit the definition of modification will not be considered a "modification" if the owner or operator of the source shows that the "increase in the quantity of actual emissions of any hazardous air pollutant from

such source will be offset by an equal or greater decrease in the quantity of emissions of another hazardous air pollutant (or pollutants) from such source which is deemed more hazardous."²⁷

One final point to note about the modification provision is that although it does not apply until after operating permit programs are in place, it has the effect of imposing MACT standards on sources even before EPA establishes MACT standards for that particular category or subcategory. In those cases, the emission limitation will be set on a case-by-case basis. CAA § 112(g)(2)(A).

While modifications under this provision may subject sources to MACT standards for existing sources, a major source that is reconstructed will be subject to MACT standards for new sources. The 1990 Amendments do not define "reconstruction," but EPA is likely to use the definition under the new source review provisions as a starting point for defining the term.

V. The Hazardous Organics NESHAP

The HON is the first major set of technology-based emission standards proposed under § 112 as amended and is therefore the best indication of how EPA plans to implement the new air toxics program. 57 Fed. Reg. 62,608 (Dec. 31, 1992). For example, this rule will indicate how EPA defines "source" in the context of MACT standards, how EPA determines the MACT floor, and how costs will be factored into the definition of MACT.

A. Definition of "Source"

The definition of "source" is important for a number of reasons. First, it describes the emission points to which each standard will apply. It is also important for defining the MACT floor, that is, the minimum emission level the source must meet, and finally, it is important for determining whether a particular source is a "major source" (i.e., whether the plant emits more than 10 tpy of any air toxic or 25 tpy of any combination of air toxics).

EPA has not adopted a general definition of "source" for purposes of § 112 but has indicated that it plans to define "source" within each MACT standard.²⁸ The HON as proposed defines "source" broadly. Under the HON, "source" will include all the process vents, storage vessels, transfer racks, wastewater collection and treatment operations, and equipment leaks in the organic hazardous air pollutant emitting chemical manufacturing processes that are located in a single facility covering a contiguous area under common control. The HON will apply to chemical manufacturers that produce one or more of the synthetic organic chemicals listed in the

²⁷ CAA § 112(g)(1)(A). EPA is in the process of developing regulations for the offset provision. The rule should include a ranking of the 189 hazardous air pollutants based on their effects on human health and the environment.

The offset provision applies only in the context of modifications and will not protect major sources from MACT standards once EPA has promulgated them for the source category.

²⁸ Sources should note that the definition may or may not be the same as the definition of "source" for purposes of the title V permit program.

rule and have an organic hazardous air pollutant as either: (1) a product, by-product, co-product, or intermediate or (2) a reactant.⁹

B. Definition of MACT

How EPA defines MACT is also important. For purposes of the HON, EPA determined the MACT floor by looking at each type of emission point, as opposed to the source as a whole, and developed a "reference control technology" (RCT) for each emission point that would satisfy the statutory maximum achievable control technology requirement. Affected sources will have to limit regulated emissions to the level that would be achieved using that RCT. How to achieve the emission limitations is up to each source. It may apply the RCT or another technology that will achieve the same standard. According to EPA, this standard takes into consideration the cost of controls.

The HON also allows sources to use emissions averaging to achieve the required emission limitations. This provision allows a source to average emissions from two or more emission points to achieve the overall emission reduction that would be achieved using the RCT. Therefore, by overcontrolling certain emission points, a source can undercontrol other emission points if the average satisfies the standard.

These requirements will be phased in over time. While the statute allows up to three years for compliance with air toxics emission standards, the HON will require certain process units to comply within six months of promulgation and others to comply within a year and a half after promulgation.

VI. The General Duty Clause

At least one regulatory provision of § 112 creates immediate obligations for industry. Congress enacted § 112(r) to prevent and detect accidental releases of hazardous air pollutants. This section applies to all owners and operators of stationary sources that produce, process, handle, or store certain "extremely hazardous" substances and imposes a "general duty" to prevent and respond to accidental releases of those substances.

The statute requires EPA to promulgate a list of not less than 100 substances "which, in the case of an accidental release, are known to cause or may reasonably be anticipated to cause death, injury, or serious adverse effects to human health or the environment."¹⁰ Section 112(r) imposes an affirmative duty on owners and operators "to identify hazards which may result from [accidental] releases using appropriate hazard assessment techniques, to design and maintain a

⁹ The equipment leak provisions of the HON will also apply to the following sources: styrene/butadiene rubber production, polybutadiene production, chlorine production, pesticide production, chlorinated hydrocarbon use, pharmaceutical production, and miscellaneous butadiene use.

¹⁰ CAA § 112(r)(3). The statutory deadline for this list was November 15, 1992. EPA missed this deadline but hopes to propose a list along with the regulations under § 112(r) in 1993.

safe facility taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur." CAA § 112(r)(1).

Although the statute requires EPA to promulgate regulations under this provision by November 1993, this "general duty" appears to be self-implementing. That is, it can be used as a basis for enforcement actions by EPA, even in the absence of any implementing regulations defining what steps are needed to comply with this "general duty."

VII. Implementation of the Air Toxics Program

The air toxics regulations will be implemented by the states under the title V operating permit program. Once the states have developed an EPA-approved operating permit program, all major sources under § 112 will be required to obtain a title V permit which specifies the applicable emission standards.

All major sources of hazardous air pollutants will be required to apply for a title V operating permit within 12 months of implementation of the state permit program, and those sources will have to report their air toxics emissions in their permit applications even if they are not yet subject to an emission standard under § 112. The title V permit rules require sources to describe in their permit application emissions of all "regulated air pollutants." "Regulated air pollutant" includes any air pollutant for which a § 112 standard has been established, regardless of whether the standard applies to the source submitting the permit application. That is, if a § 112 standard has been established for any source to limit emissions of a particular hazardous air pollutant, then all sources must report their emissions of that pollutant in their permit applications. See 40 C.F.R. § 70.2; 57 Fed. Reg. 32,295, 32,297 (July 21, 1992) (final title V permit rules). The list of "regulated air pollutants" for purposes of § 112 could become quite long very quickly; the HON alone may regulate as many as 149 of the 189 listed hazardous air pollutants.

VIII. Issues to Watch

In the next year, EPA will propose its general provisions under § 112 which will define basic terms and requirements that apply across MACT standards including monitoring, recordkeeping, and reporting requirements. EPA will also propose regulations under the modification provision, and in the next two years, EPA is scheduled to propose and promulgate MACT standards for over 40 source categories. Along with the HON, these rules will define the new air toxics program. Because the air toxics provisions of the statute leave many questions unanswered and because the way those questions are ultimately resolved can have a great impact on regulated entities, it will be important for industry to follow and participate these rulemakings.

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