

U.S. ENVIRONMENTAL PROTECTION AGENCY

[40 CFR 61]

[FRL_____]

[Docket No. A-97-21]

Draft Determination of Adequacy of Section 112 Authorities

And Draft Determination of Need for Additional Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Draft Determinations.

SUMMARY: Today's notice provides, for public comment, the EPA's draft determinations that the legal authorities and mandates provided by section 112 of the Clean Air Act (CAA) are adequate to prevent serious, adverse, public health effects and serious or widespread environmental effects associated with atmospheric deposition of hazardous air pollutants to the Great Waters. Today's notice also provides EPA's draft determination that, at this time, further emission standards or control measures under section 112, beyond those otherwise authorized by section 112, are not necessary and appropriate to prevent such effects. These actions are being taken pursuant to section 112(m)(6) of the CAA, as amended in 1990, and a consent decree entered in Sierra Club v. Browner, Civ. No. 96-1680. Final determinations are required under the consent decree to be made by March 15, 1998.

DATES: Written comments must be submitted by [insert date 30 days from date of publication].

ADDRESSES: Commenters must send an original and two copies of their comments, referencing docket number A-97-21, to the Air Docket, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.

Comments and data may also be submitted electronically by following the instructions under SUPPLEMENTARY INFORMATION of this document. No Confidential Business Information (CBI) should be submitted through e-mail.

FOR FURTHER INFORMATION CONTACT: Dianne Byrne, Office of Air Quality Planning and Standards (MD-15), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-5342.

SUPPLEMENTARY INFORMATION:

Electronic Availability

The official record for this notice, as well as the public version, has been established for this notice under docket number A-97-21 (including comments and data submitted electronically as described below). A public version of this record, including printed, paper versions of electronic comments, which do not include any information claimed as CBI, is available for inspection from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays.

The official record is located at the address in "ADDRESSES" at the beginning of this document. Electronic comments can be sent directly to EPA at A-and-R-Docket@epamail.epa.gov. Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comments and data will also be accepted on disks in Word Perfect in 5.1 file format or ASCII file format. All comments and data in electronic form must be identified by the docket number (A-97-21). Electronic comments on this draft notice may be filed online at many Federal Depository Libraries.

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I. Background

Pursuant to section 112(m)(6) of the CAA, EPA is submitting for public comment a draft determination that the legal authorities and mandates provided by section 112 of the CAA are adequate to prevent serious, adverse, public health effects and serious or widespread environmental effects associated with atmospheric deposition of hazardous air pollutants (HAP) to the Great Waters. The EPA is also submitting for public comment its draft determination that further emissions standards or control measures under section 112(m)(6), beyond those otherwise authorized or required by section 112, are not at this time necessary or appropriate to prevent such effects. The bases for these draft determinations are discussed in today's notice and are briefly summarized below.

Section 112(m)(6) of the CAA requires that EPA determine whether adequate authority exists within the

provisions of section 112, other than subsection (m)(6) to prevent serious, adverse, effects to public health and serious or widespread environmental effects associated with atmospheric deposition of HAP to the Great Waters. In conducting this assessment, EPA reviewed the authorities granted by section 112, as they may function to reduce adverse effects caused by deposition of HAP to the Great Waters. It should be emphasized that this determination pertains to the authority within the CAA to take actions as appropriate to address the enumerated effects; it does not pertain to the efficacy of prior or future actions. In addition, the scope of this determination is focused on the authority within section 112 to address those pollutants and sources that can be regulated under that section's authority. As such, pollutants that are not listed as HAP, pursuant to section 112(b), and source categories that could not be listed pursuant to section 112(b) are not included within the scope of this determination. While not part of this determination, it may be useful to note that some unlisted pollutants that are pollutants of concern to the Great Waters are regulated by other sections of the CAA (such as nitrogen oxides which are regulated pursuant to sections 108, 109, 202, and section 407). Similarly, source categories that are outside the scope of section 112 can be

regulated under other provisions of the CAA (such as mobile sources regulated pursuant to section 202). Emissions of the Great Waters' pollutants of concern that are addressed by other statutes (e.g., wastewater discharges addressed by the Clean Water Act) are also not within the scope of this adequacy determination.

Section 112 establishes a statutory scheme by which EPA is to identify HAP which may cause or contribute to adverse effects to public health or the environment, develop performance standards for the control of emissions from stationary sources of such HAP (in addition to the HAP listed by Congress in the CAA), and adjust these control requirements as needed to address any remaining unacceptable risk that may be present after sources have complied with the emission standards. The types of adverse environmental effects to be prevented are defined in the CAA and are broad in scope. An adverse environmental effect is defined by section 112(a)(7) as "any significant and widespread adverse effect, which may reasonably be anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas."

Authorities provided by other provisions of section 112

that may be particularly relevant to the Great Waters' pollutants and sources are briefly summarized below.

Section 112 authorizes EPA to:

- Identify and list any air pollutant that may cause adverse effects due to atmospheric deposition (section 112(b)).

- Identify and list any stationary source category that emits pollutants with the potential to cause adverse effects (section 112(c)).

- Establish a lesser quantity (e.g., below 10 tons per year for a single pollutant) emission rate based on several factors, including persistence and potential to bioaccumulate. Such emission rate, once established, would replace the 10 ton per year rate, per pollutant, that is otherwise used to define a major source (section 112(a)(1)).

- Establish test methods and analytic procedures for monitoring and measuring emissions, ambient concentrations, deposition, and bioaccumulation of HAP (section 112(b)(5)).

- List sources of 7 specific HAP to assure at least 90 percent of emissions of each pollutant are subject to national emission standards (section 112(c)(6)). These pollutants are of particular concern for the Great Waters.

- Promulgate performance standards (section 112(d)) for

major sources and listed area sources. These standards are to reflect the maximum degree of emission reduction that is achievable, taking into consideration the cost of achieving such reduction, non-air quality health and environmental impacts, and energy requirements. In addition, these standards are to apply pollution prevention measures, processes, methods, systems or techniques which reduce the volume of or eliminate emissions through process changes, substitution of materials, enclosure of systems or processes, and other measures.

- Require additional controls, as necessary to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect. Authority to take action, as needed, to help prevent the effects identified under section 112(m)(6) is provided by the "residual risk" provision (section 112(f)).

- Complete and transmit to Congress two studies that are especially relevant to the Great Waters program. The first is a study of mercury emissions from electric utilities, municipal waste combustors, and other sources, including smaller (i.e., area) sources. When the study becomes final, the results will be helpful in prioritizing mercury reduction strategies. The second study addresses the hazards to public health expected to occur as a result

of HAP emissions from electric utilities. Section 112(n)(1)(A) further requires that EPA determine, based on the results its study, whether regulations to reduce utility emissions are warranted. This regulatory determination has not yet been made (section 112(n)(1)).

Based on its analysis of these section 112 provisions, and on current knowledge of emission sources, atmospheric transport and deposition, and bioaccumulation, EPA believes that section 112 authority is adequate to prevent serious adverse effects to public health and serious or widespread environmental effects associated with the deposition of HAP to Great Waters. If the other authorities of section 112 are found inadequate, section 112(m)(6) of the CAA provides additional authority to EPA to adopt further emission standards or other control measures not otherwise mandated or authorized by section 112, if necessary and appropriate, to fully comply with the protective mandate of the Great Waters provisions. Since EPA believes that the authorities in section 112 are adequate to prevent the enumerated effects, EPA believes that it would not be appropriate, at this time, to promulgate further emission standards or other control measures under section 112(m)(6) to prevent such effects beyond those already authorized or required by section 112. In making these draft determinations, EPA is

not determining that air deposition of HAP does not currently cause or contribute to adverse effects to the public health or the environment.

II. Introduction

There are three important prerequisites to EPA's ability to identify the need for, and to develop, appropriate actions to address adverse health and environmental effects associated with atmospheric deposition of HAP. First, EPA must have adequate data and methods (e.g., air emissions inventories, ambient and deposition sampling and analysis techniques, and atmospheric fate and transport models) with which to collect and analyze relevant information. Additionally, there must be scientific support for the establishment of appropriate health thresholds, dose-response relationships and effects mechanisms.

This information must be sufficient to support scientific and policy judgments about those effects that should be considered "serious adverse," in the case of human health, and "serious or widespread," in the case of environmental effects. Finally, the Agency must have adequate legal authority to adopt regulations which can effectively reduce the emissions of the pollutants of concern in order to prevent such effects.

Much of the effort to evaluate the extent to which the

first two prerequisites (technical and science) have been met is summarized in the first and second Reports to Congress, and EPA expects to continue significant efforts to develop and improve our understanding of the scientific and technical issues. Today's notice discusses the third prerequisite to effective actions, that is, the adequacy of legal authorities provided by section 112 to prevent the effects specified in section 112(m)(6), and announces EPA's draft adequacy determination under that subsection. In addition, today's notice announces EPA's draft determination regarding whether additional emissions standards or control measures under section 112, beyond those otherwise authorized or required by section 112, are at this time necessary and appropriate to prevent such effects.

A. Statutory Requirements for Great Waters Program

Section 112(m) of the CAA, as amended in 1990, 42 U.S.C. § 7401 et seq. establishes the Great Waters program under which EPA has ongoing responsibilities to identify and assess the extent of atmospheric deposition of HAP to the Great Lakes, Chesapeake Bay, Lake Champlain, and coastal waters (Great Waters, (42 U.S.C. § 7412(m))). As part of this program, EPA is to monitor for atmospheric deposition of HAP in the Great Waters, investigate the sources of HAP deposition, research the relative contribution of

atmospheric pollutants to total loadings in the Great Waters, evaluate adverse effects to public health or the environment caused by HAP deposition, assess the contribution of HAP deposition to violations of water quality or drinking water standards, and sample for HAP in biota, fish, and wildlife of the Great Waters, (42 U.S.C. § 7412(m)(1)(A)-(E)).¹

In addition, EPA is to provide periodic Reports to Congress describing the results of any monitoring, studies, and investigations conducted under the Great Waters program,

¹42 U.S.C. § 7412(m)(1) provides:

The Administrator, in cooperation with the Under Secretary of Commerce for Oceans and Atmosphere, shall conduct a program to identify and assess the extent of atmospheric deposition of hazardous air pollutants (and in the discretion of the Administrator, other air pollutants) to the Great Lakes, the Chesapeake Bay, Lake Champlain and coastal waters. As part of such program, the Administrator shall--

(A) monitor the Great Lakes, the Chesapeake Bay, Lake Champlain and coastal waters, including monitoring of the Great Lakes through the monitoring network established pursuant to paragraph (2) of this subsection and designing and deploying an atmospheric monitoring network for coastal waters pursuant to paragraph (4);

(B) investigate the sources and deposition rates of atmospheric deposition of air pollutants (and their atmospheric transformation precursors);

(C) conduct research to develop and improve monitoring methods and to determine the relative contribution of atmospheric pollutants to total pollution loadings to the Great Lakes, the Chesapeake Bay, Lake Champlain, and coastal waters;

(D) evaluate any adverse effects to public health or the environment caused by such deposition (including effects resulting from indirect exposure pathways) and assess the contribution of such deposition to violations of water quality standards established pursuant to the Federal Water Pollution Control Act [33 U.S.C.A. § 1251 et seq.] and drinking water standards established pursuant to the Safe Drinking Water Act [42 U.S.C.A. § 300f et seq.]; and

(E) sample for such pollutants in biota, fish, and wildlife of the Great Lakes, the Chesapeake Bay, Lake Champlain and coastal waters and characterize the sources of such pollutants.

addressing the same issues as mentioned above, and describing any revisions to the requirements, standards and limitations under the CAA or other Federal laws that are necessary to protect the public health and environment from atmospheric deposition (42 U.S.C. § 7412(m)(5)).² The Agency's implementation of the Great Waters program to date is discussed in the first two Reports to Congress issued under section 112(m)(5): "Deposition of Air Pollutants to the Great Waters: First Report to Congress", EPA-453/R-93-055 (May 1994); and "Deposition of Air Pollutants to the Great Waters: Second Report to Congress", EPA-453/R-97-011

²42 U.S.C. § 7412(m)(5) provides:

Within 3 years of November 15, 1990, and biennially thereafter, the Administrator, in cooperation with the Under Secretary of Commerce for Oceans and Atmosphere, shall submit to the Congress a report on the results of any monitoring, studies, and investigations conducted pursuant to this subsection. Such report shall include, at a minimum, an assessment of--

(A) the contribution of atmospheric deposition to pollution loadings in the Great Lakes, the Chesapeake Bay, Lake Champlain and coastal waters;

(B) the environmental and public health effects of any pollution which is attributable to atmospheric deposition to the Great Lakes, the Chesapeake Bay, Lake Champlain and coastal waters;

(C) the source or sources of any pollution to the Great lakes, the Chesapeake Bay, Lake Champlain and costal waters which is attributable to atmospheric deposition;

(D) whether pollution loadings in the Great lakes, the Chesapeake Bay, Lake Champlain or coastal waters cause or contribute to exceedances of drinking water standards pursuant to the Safe Drinking Water Act [42 U.S.C.A. § 300f et seq.] or water quality standards pursuant to the Federal Water Pollution Control Act [33 U.S.C. § 1251 et seq.] or, with respect to the Great lakes, exceedances of the specific objectives of the Great Lakes Water Quality Agreement; and

(E) a description of any revisions of the requirements, standards, and limitations pursuant to this chapter and other applicable Federal laws as necessary to assure protection of human health and the environment.

(June 1997). Copies of these reports can be obtained, as supplies permit, from the Library Services Offices (MD-35), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, or, for a nominal fee, from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, phone: 1-800-553-NTIS or 703-487-4650.

Finally, section 112(m)(6) requires that the Administrator determine whether the other provisions of section 112 are adequate to prevent serious, adverse effects to public health and serious or widespread environmental effects, including such effects resulting from indirect exposure pathways, associated with atmospheric deposition to the Great Waters of HAP (and their atmospheric transformation products, (42 U.S.C. § 7412(m)(6)).³ In making this determination, EPA is to take into consideration

³42 U.S.C. § 7412(m)(6) provides:

As part of the report to Congress, the Administrator shall determine whether the other provisions of this section are adequate to prevent serious adverse effects to public health and serious or widespread environmental effects, including such effects resulting from indirect exposure pathways, associated with atmospheric deposition to the Great Lakes, the Chesapeake Bay, Lake Champlain and coastal waters of hazardous air pollutants (and their transformation products). The Administrator shall take into consideration the tendency of such pollutants to bioaccumulate. Within 5 years after November 15, 1990, the Administrator shall, based on such report and determination, promulgate, in accordance with this section, such further emission standards or control measures as may be necessary and appropriate to prevent such effects, including effects due to bioaccumulation and indirect exposure pathways. Any requirements promulgated pursuant to this paragraph with respect to coastal waters shall only apply to the coastal waters of the States which are subject to section 7627(a) of this title.

the tendency of HAP to bioaccumulate. If EPA determines that the other provisions of section 112 are not adequate, section 112(m)(6) provides that EPA must then promulgate, in accordance with section 112, such further emission standards or control measures as may be necessary and appropriate to prevent such effects, including effects due to bioaccumulation and indirect exposure pathways. Id. As an initial matter, EPA interprets this latter mandate to be a requirement to determine, in the first instance, whether additional controls are necessary and appropriate, rather than as an absolute requirement to promulgate some additional controls. (See, e.g., Environmental Defense Fund v. Thomas, 870 F.2d 892, 898-900 (2nd Cir. 1989) (While district court did not have jurisdiction to compel the Administrator to revise the national ambient air quality standards (NAAQS), it did have jurisdiction to compel EPA to take some formal action either revising the NAAQS or declining to revise them)).

B. Scope of Analysis

In reviewing the language of section 112(m)(6), it is significant to note the CAA's specific reference to the "other provisions" of section 112 in describing EPA's duty to assess its ability to prevent the specified effects.

This reference to the statutory authorities is in contrast to a consideration of particular regulatory actions that might be taken or have already been taken under those provisions, or of their individual effectiveness. The EPA views this language as calling for an analysis of the adequacy of the regulatory authorities and mandates provided by section 112, rather than of specific actions which might be taken pursuant to this section. In other words, EPA must determine whether the authorities provided by these provisions can adequately prevent the enumerated health and environmental effects. In the event that EPA determines that they cannot, the CAA further provides limited authority to adopt additional rules not specifically mandated or authorized by the other provisions of section 112 as needed to fully comply with section 112(m)(6)'s protective mandate. This authority is limited by its terms to developing rules "in accordance with" section 112; EPA may not act, pursuant to section 112(m)(6), inconsistently with the requirements of, or outside the scope of, section 112. This means that any additional regulations promulgated pursuant to section 112(m)(6) could apply only to stationary sources of HAP.

As noted above, EPA does not interpret this language as calling for an analysis of the adequacy of specific rules or actions which have been, or will be, taken pursuant to the

provisions of section 112. That is, based on the statutory language itself, for the purposes of conducting the required analysis, EPA must presume that the provisions will be implemented in ways which fully comply with the substantive requirements of the appropriate subsections of section 112 and not speculate about what actual degree of emissions control results from a specific rule adopted in accordance with section 112. The EPA's interpretation of the scope of this analysis is supported by the dates by which Congress anticipated that this determination and any further regulations would be adopted, compared to the deadlines imposed under the Act for full implementation of section 112. Section 112(m)(6) provides that EPA was to make the determination in the Report to Congress required by section 112(m)(5). The first Report to Congress was due on November 15, 1993. The EPA was then required to promulgate additional regulations, if any, based on the report and determination by November 15, 1995. However, many of the deadlines for other actions under section 112 do not fall until much later. By requiring that EPA complete the process of making this determination and adopting further standards or control measures within 5 years after November 15, 1990, EPA presumes Congress knew that a large number of mandated emission standards, programs, and regulations under

section 112 would either not yet be commenced, or would still be in the early stages of development. Moreover, even those section 112 controls that had already been promulgated would not yet have demonstrated either success or failure at preventing adverse effects to the public health and environment. Consequently, Congress could not have expected that EPA, at the time this determination was due, would have sufficient information with which to judge the actual scientific or technical adequacy of those recently adopted or future actions or regulations to achieve specific degrees of protection. Indeed, section 112(c)(6), which requires that EPA identify the sources of seven specific pollutants which are of primary concern for the Great Waters, requires only an identification and listing of sources of those pollutants as of November 15, 1995, the same date by which EPA must determine whether additional regulations are necessary and appropriate. Standards to subject these sources to regulations are not required under section 112(c)(6) to be established until 5 years thereafter.

While on the surface there might appear to be some conflict between the section 112(c)(6) and 112(m)(6) deadlines for regulatory action, EPA believes this tension is reconciled by the Agency's interpretation of its section 112(m)(6) duty to be to determine adequacy based solely on

an a priori statutory analysis; if after review of the section 112 authorities, EPA concludes that they are inadequate to prevent the enumerated public health or environmental effects, EPA is required to establish further regulations based partly on the conclusion that those other authorities, when eventually implemented, cannot possibly prevent those effects. In other words, EPA is required under section 112(m)(6) to plug any gaps it identifies early. But, if the Agency concludes that section 112 is adequate, the section 112(m)(6) "duty" to establish further regulations is not triggered, and the "conflict" with other provisions' deadlines for regulatory actions becomes moot.

One question that EPA must resolve in making its determination under section 112(m)(6) concerns the sources of pollutants which are transported through the atmosphere and the extent to which EPA's determination must encompass all such sources. This issue is potentially significant because available information indicates that, in addition to domestic stationary sources of HAP emissions which may be subjected to regulation under section 112, atmospheric deposition of some HAP partially results from mobile source emissions, as well as transport of emissions from foreign sources. Also, some HAP, which were historically introduced to the environment by human activities, are continually

being recycled in the environment. That is, pollutants such as PCBs, certain pesticides, and, to some extent, mercury, can revolatilize from soils and waterbodies into the air, where they can be transported downwind to new locations and redeposited, revolatilizing again back into the air from these new locations and transporting further downwind.

Nothing in the language of section 112(m)(6) suggests that the Agency must consider these other sources in determining whether the provisions of section 112 are adequate to prevent the adverse health or environmental effects. That is, the statutory language does not extend the scope of EPA's analysis to encompass impacts from HAP emissions from sources that could not conceivably be subjected to section 112 regulation. Section 112(m)(6) goes on to provide that if EPA has determined the other provisions of section 112 are inadequate, EPA must promulgate additional necessary and appropriate emission standards or other control measures "in accordance with this section," i.e., in accordance with section 112 (42 U.S.C. § 7412(m)(6)). Section 112 does not confer authority on the Agency to regulate mobile sources, nondomestic sources of HAP emission, or contaminated sediments. Instead, section 112, and the potential remedy to address an "inadequacy" determination under section 112(m)(6), is restricted in

application to stationary sources of HAP within the possible regulatory reach of section 112. Moreover, EPA believes that Congress, in enacting the section 112(m)(6) duty to evaluate the adequacy of section 112, clearly understood that section 112, and the section 112 remedy contained in section 112(m)(6), could only extend to stationary sources already within the scope of the section. This is because it would have been unnecessary to ask whether section 112 is adequate to control sources that are clearly beyond its scope, such as mobile sources. For these reasons, it is EPA's view that the scope of the section 112(m)(6) determination should be limited to consideration of the adequacy of section 112 provisions to prevent the enumerated adverse effects associated with HAP emissions from sources which are within the scope of EPA's authority to regulate under section 112. It is important to note that it does not follow from this interpretation that in order to determine that there are, or to address, adverse effects to public health or serious or widespread effects to the environment under section 112, EPA must consider only the contributions from domestic stationary sources subject to regulation under section 112.

**III. Statutory Analysis - Other Provisions Relative to
section 112(m) Mandate**

Among other things, section 112 establishes a statutory scheme through which EPA is to identify HAP which present or may present a threat of adverse human health effects or adverse environmental effects, develop standards for the control of emissions from major stationary and area sources of such HAP (and the HAP listed by Congress in the CAA), and adjust these emission control requirements to address any remaining unacceptable risk which may be present once sources have complied with the emission standards. The following sections discuss these provisions in further detail, describing the extent to which they authorize or enable actions to prevent serious adverse public health effects and serious or widespread environmental effects associated with atmospheric HAP deposition to the Great Waters, as described in section 112(m)(6).

A. Definition of Major Source

Section 112(a) sets forth several definitions that partly define the scope of EPA's regulatory authority under section 112. The definition of "major source" at section 112(a)(1), for example, functions in part to establish which types of stationary sources must be subjected to the most stringent controls. In addition, however, it provides authority to include more sources within the definition, and

thus allows EPA to subject additional sources to more stringent controls than is otherwise required under section 112 (42 U.S.C. § 7412(a)(1)).⁴ While a major source is initially defined to mean 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 controls, in the aggregate, 10 tons per year of any HAP or 25 tons per year of any combination of HAP, EPA may establish a lesser quantity for a major source based on the potency of the air pollutant, persistence, potential for bioaccumulation, other characteristics of the air pollutant, or other relevant factors.

Section 112(m)(6) requires EPA to consider the tendency of HAP to bioaccumulate when making its determination as to the adequacy of section 112 (42 U.S.C. § 7412(m)(6)). Since section 112(a)(1) allows EPA to base lesser quantity emission rates for defining major sources on bioaccumulation and other relevant factors, the authority in section

⁴42 U.S.C. § 7412(a)(1) provides:

The term "major source" means any stationary source or group stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering 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. The Administrator may establish a lesser quantity, or in the case of radionuclides different criteria, for a major source than that specified in the previous sentence, on the basis of the potency of the air pollutant, persistence, potential for bioaccumulation, other characteristics of the air pollutant, or other relevant factors.

112(a)(1) can be used, in concert with other provisions of section 112 as discussed below, to impose controls that could help prevent the enumerated effects associated with atmospheric deposition of HAP to the Great Waters.

B. Definition of Adverse Environmental Effect

Section 112(a)(7) defines "adverse environmental effect" to mean "any significant and widespread adverse effect, which may be reasonably anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas" (42 U.S.C. § 7412(a)(7)). The EPA interprets the scope of this term to apply as broadly as the language included in section 112(m)(6) requiring EPA to prevent serious or widespread environmental effects associated with atmospheric deposition to the Great Waters of HAP and their transformation products. The EPA notes that the language of section 112(a)(7) and 112(m)(6) is different: where the former refers to "significant and widespread adverse effect," the latter refers to "serious or widespread environmental effects."

The legislative history does not provide further clarification of the reasons for the differences in the terminology used in these two provisions or otherwise

suggest that Congress intended for the two phrases to have different meanings. Rather, references to the House Amendments that became section 112(m)(6) indicate that the sponsors understood the language in the Amendments to have the same meaning as that used elsewhere in section 112 to describe "adverse" environmental effects. (See, e.g., remarks of Mr. Levine, House Debate 5-21-90, reprinted in A Legislative History of the Clean Air Act Amendments of 1990, at 2633; Remarks of Mr. Bilirakis, House Debate 5-23-90, id., at 2941; Remarks of Mr. Lagomarsino, House Debate 5-23-90, id., at 2946; Remarks of Mr. Levine, House Debate 5-23-90, id., at 2938.) The EPA believes that these differences do not impose materially different standards, and that for purposes of the section 112(m)(6) determination, the standard imposed under section 112(a)(7) is substantially the same as that in section 112(m)(6). This is because EPA interprets section 112(m)(6) as directing EPA to assure that only "adverse" environmental effects from HAP deposition are prevented, rather than effects that are not "adverse," if any exist. In this context, EPA believes that the differing language in the two subsections functions interchangeably. (See, e.g., De Sylva v. Ballentine, 351 U.S. 570 (1956) ("the word 'or' is often used as a careless substitute for the word 'and,' that is, it is often used in phrases where 'and'

would express greater clarity"); See also, U.S. v. Moore, 613 F.2d 1029 (D.C. Cir. 1979); U.S. v. 1973 One Roll Is Royce, 43 F.3d 794 (3rd Cir. 1994); Kelly v. Wauconda Park Dist., 801 F.2d 269 (7th Cir. 1986); U.S. v. Smeathers, 884 F.2d 363 (8th Cir. 1989). While the use of different terminology in sections 112(a)(7) and 112(m)(6) does raise some ambiguity regarding Congress' intent, EPA believes that the most reasonable way to resolve this ambiguity is to read the slightly different language in section 112(m)(6) consistently with how Congress defined environmental effects of concern for all other purposes under section 112. (See Chevron U.S.A., Inc. v. NRDC, 467 U.S. 837 (1984).) Otherwise, under a literal reading, Congress might be viewed as having charged EPA with the duty to prevent environmental effects which by definition under section 112 are not "adverse." The EPA does not believe such a reading would make sense, either as a matter of statutory interpretation or as a matter of environmental policy.

Moreover, other language in section 112(m) suggests that Congress intended for the different terminology in section 112(a)(7) and 112(m)(6) to have the same meaning. In section 112(m)(1), the initial subsection directing EPA to establish the Great Waters program, Congress required EPA to evaluate "any adverse effects to public health or the

environment caused by [HAP] deposition (including effects resulting from indirect exposure pathways" (42 U.S.C. § 7412(m)(1)(D)). This provision's use of the section 112(a)(7) defined the term "adverse environmental effect," as inclusive of the same "effects resulting from indirect exposure pathways" as defined in section 112(m)(6), indicates that Congress assumed the scope of environmental impacts to be covered by section 112(a)(7) and 112(m)(6) would be the same. Indeed, if Congress had thought otherwise, it would have been unnecessary for it to have asked EPA to assess whether the other substantive provisions of section 112 are adequate to prevent the effects identified in section 112(m)(6). If the environmental effects in section 112(m)(6) are by definition broader in scope than those included in the definition of "adverse environmental effects" in section 112(a)(7), the other provisions of section 112 would necessarily be inadequate to prevent them, and no administrative expertise on EPA's part would be needed in order to assess this.

While section 112(a)(7) provides as one example of an "adverse environmental effect," "significant degradation of environmental quality over broad areas," the use of the term "widespread" should not be viewed as requiring in all cases an environmental effect to occur in multiple geographic

areas. For example, in other contexts, EPA has interpreted "widespread" economic impacts as being those that apply to a single affected community. (See EPA final rule, Water Quality Standards Regulation, 48 FR 51400, 51401 (November 8, 1983); 40 CFR 131.10(g)(6).) In addition, section 112(a)(7) provides as another example of "adverse environmental effects" impacts on populations of endangered or threatened species; such populations are especially likely to occur in limited geographic areas. EPA believes Congress did not intend the "widespread" criterion to exclude impacts that might occur within a limited geographic range that might include, for example, one of the Great Lakes, the Chesapeake Bay, another Great Waters waterbody, or a significant portion of such a waterbody. Thus, to the extent that specific provisions in section 112, such as the residual risk provisions in section 112(f), allow or require EPA to prevent "adverse environmental effects," this authority is adequate to prevent the effects enumerated in section 112(m)(6).

C. Listing of Pollutants

Before EPA may adopt standards or other measures to prevent or control emissions of a given pollutant under section 112, the pollutant must first be formally listed as a HAP pursuant to section 112(b). Section 112(b)(1)

provides an initial list of 189 chemicals which Congress concluded are HAP.⁵ Section 112(b)(2) also provides in part that the Administrator shall periodically review the list and publish the results thereof and, where appropriate, revise the list by rule, adding pollutants which present, or may present, through inhalation or other routes of exposure, a threat of adverse human health effects or adverse environmental effects whether through ambient concentrations, bioaccumulation, deposition, or otherwise (42 U.S.C. § 7412(b)(2)).⁶ Section 112(b)(3)(B) further provides that EPA shall add substances to the list, upon a showing by outside petitioners or on the Agency's own

⁵This list now contains 188 HAP, as a result of EPA's final decision to remove the compound caprolactam from the section 112(b)(1) list. See 61 FR 30816 (June 18, 1996), codified at 40 C.F.R § 63.60.

⁶42 U.S.C. § 7412(b)(2) provides:

The Administrator shall periodically review the list established by this subsection and publish the results thereof and, where appropriate, revise such list by rule, adding pollutants which present, or may present, through inhalation or other routes of exposure, a threat of adverse human health effects (including, but not limited to, substances which are known to be, or may reasonably be anticipated to be, carcinogenic, mutagenic, teratogenic, neurotoxic, which cause reproductive dysfunction, or which are acutely or chronically toxic) or adverse environmental effects whether through ambient concentrations, bioaccumulation, deposition, or otherwise, but not including releases subject to regulation under subsection (r) of this section as a result of emissions to the air. No air pollutant which is listed under section 7408(a) of this title may be added to the list under this section, except that the prohibition of this sentence shall not apply to any pollutant which independently meets the listing criteria of this paragraph and is a precursor to a pollutant which is listed under section 7408(a) of this title or to any pollutant which is in a class of pollutants listed under such section. No substance, practice, process or activity regulated under subchapter VI of this chapter shall be subject to regulation under this section solely due to its adverse effects on the environment.

determination, that "the substance is an air pollutant and that emissions, ambient concentrations, bioaccumulation or deposition of the substance are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects" (42 U.S.C. § 7412(b)(3)). To assist the Agency in its efforts, section 112(b)(4) provides that, where information on the health or environmental effects of a substance is not sufficient to make a determination required by section 112(b), "the Administrator may use any authority available to the Administrator to acquire such information" (42 U.S.C. § 7412(b)(4)). Moreover, section 112(b)(5) allows EPA to establish, by rulemaking test measures and other analytic procedures for monitoring and measuring emissions, ambient concentrations, deposition, and bioaccumulation of hazardous air pollutants (42 U.S.C. § 7312(b)(5)).

The EPA believes that, taken together, the provisions of section 112(b) discussed above provide adequate authority to identify and formally list any HAP which has the potential for causing adverse public health or environmental effects due to atmospheric deposition. Of the 15 chemicals or chemical classes that have been identified as pollutants of concern in the Great Waters program, 13 are already listed as HAP. The two unlisted pollutants (or pollutant

classes) are nitrogen compounds and the pesticide, Dieldrin. The EPA has authority to regulate emissions of nitrogen oxides under other sections of the CAA (e.g., sections 108, 109, 129, 202, and 407). There are currently no known air emission sources of Dieldrin in the United States. This substance is a pollutant of concern because it continues to be measured in the Great Waters at levels considered to be potentially harmful. However, these levels are the result of prior use of the pesticide and its recycling in the environment. Thus, there is currently no basis for adding Dieldrin to the HAP list in section 112.

D. Listing of Sources

Once a pollutant has been listed as a HAP pursuant to section 112(b), EPA is required by section 112(c)(1) to publish and to periodically review and revise a list of all categories and subcategories of major sources and area sources of these pollutants (42 U.S.C. § 7412(c)(1)).⁷ Section 112(c)(2) then requires EPA to establish emissions

⁷42 U.S.C. § 7412(c)(1) provides:

Not later than 12 months after November 15, 1990, the Administrator shall publish, and shall from time to time, but no less often than every 8 years, revise, if appropriate, in response to public comment or new information, a list of all categories and subcategories of major sources and area sources (listed under paragraph (3)) of the air pollutants listed pursuant to subsection (b) of this section. To the extent practicable, the categories and subcategories listed under this subsection shall be consistent with the list of source categories established pursuant to section 7411 of this title and part C of this subchapter. Nothing in the preceding sentence limits the Administrator's authority to establish subcategories under this section, as appropriate.

standards under section 112(d) for the listed categories and subcategories (42 U.S.C. § 7412(c)(2)). Additionally, section 112(c) imposes requirements to list categories or subcategories of sources, including area sources, meeting certain specified criteria. Significant to section 112(m) are the requirements of section 112(c)(6)--EPA is required to identify and to list categories and subcategories of sources to assure that at least 90 percent of the aggregate emissions of each of seven specific pollutants are subject to emission standards under section 112(d)(2) or (d)(4) and 42 U.S.C. § 7412(c)(6)).⁸ These seven pollutants, alkylated lead compounds, polycyclic organic matter, hexachlorobenzene, mercury, polychlorinated biphenyls, 2,3,7,8-tetrachlorodibenzofurans and 2,3,7,8-tetrachlorobenzo-p-dioxin--are identified as pollutants of concern to the Great Waters, and standards for them must be promulgated by November 15, 2000.

Moreover, section 112(c)(5) provides EPA with broad

⁸42 U.S.C. § 7412(c)(6) provides:

With respect to alkylated lead compounds, polycyclic organic matter, hexachlorobenzene, mercury, polychlorinated biphenyls, 2,3,7,8-tetrachlorodibenzofurans and 2,3,7,8-tetrachlorodibenzo-p-dioxin, the Administrator shall, not later than 5 years after November 15, 1990, list categories and subcategories of sources assuring that sources accounting for not less than 90 per centum of the aggregate emissions of each such pollutant are subject to standards under subsection (d)(2) or (d)(4) of this section. Such standards shall be promulgated not later than 10 years after November 15, 1990. This paragraph shall not be construed to require the Administrator to promulgate standards for such pollutants emitted by electric utility steam generating units.

discretion to list additional categories and subcategories of area sources of HAP any time the Agency finds they present a threat of adverse effects to human health or the environment, either in the aggregate or individually (42 U.S.C. § 7412(c)(5)).⁹ Finally, section 112(c)(3) imposes two additional requirements on EPA. First, EPA must list each category or subcategory of area sources (i.e., nonmajor stationary sources of HAP) which EPA finds presents a threat of adverse effects to human health or the environment (by such sources individually or in the aggregate) warranting regulation under section 112; and second, EPA must list, based on actual or estimated aggregate emissions of a listed pollutant or pollutants, sufficient categories or subcategories of area sources to ensure that area sources representing 90 percent of the area source emissions of the 30 HAP that present the greatest threat to public health in the largest number of urban areas are subject to regulation

⁹42 U.S.C. § 7412(c)(5) provides:

In addition to those categories and subcategories of sources listed pursuant to paragraphs (1) and (3), the Administrator may at any time list additional categories and subcategories of sources of hazardous air pollutants according to the same criteria for listing applicable under such paragraphs. In the case of source categories and subcategories listed after publication of the initial list required under paragraph (1) or (3), emission standards under subsection (d) of this section for the category or subcategory shall be promulgated within 10 years after November 15, 1990, or within 2 years after the date on which such category or subcategory is listed, whichever is later.

under section 112 (42 U.S.C. § 7412(c)(3)).¹⁰ These regulations must be promulgated by November 15, 2000.

In its use of the terms "category" and "subcategory" of sources, the CAA does not provide definitive guidance and, thus, EPA's discretion in how to apply those terms is broad. The CAA does provide definitions of "major," "stationary" and "area" sources, the latter meaning any stationary source of HAP that is not a major source and excluding motor vehicles or nonroad vehicles subject to title II of the CAA (42 U.S.C. § 7412(a)(2)).¹¹ Thus, section 112(c) provides for the listing of stationary sources only and does not reach such sources as motor vehicles, aircraft, nonroad engines or vehicles such as locomotives.

While this might appear to be a deficiency in the

¹⁰42 U.S.C. § 7412(c)(3) provides:

The Administrator shall list under this subsection each category or subcategory of area sources which the Administrator finds presents a threat of adverse effects to human health or the environment (by such sources individually or in the aggregate) warranting regulation under this section. The Administrator shall, not later than 5 years after November 15, 1990, and pursuant to subsection (k)(3)(B) of this section, list, based on actual or estimated aggregate emissions of a listed pollutant or pollutants, sufficient categories or subcategories of area sources to ensure that area sources representing 90 percent of the area source emissions of the 30 hazardous air pollutants that present the greatest threat to public health in the largest number of urban areas are subject to regulation under this section. Such standards shall be promulgated not later than 10 years after November 15, 1990.

¹¹42 U.S.C. § 7412(a)(2) provides:

The term "area source" means any stationary source of hazardous air pollutants that is not a major source. For purposes of this section, the term "area source" shall not include motor vehicles or nonroad vehicles subject to regulation under subchapter II of this chapter.

scope of section 112, to the extent that emissions from such sources can cause or contribute to significant and harmful atmospheric deposition of HAP, they can be regulated under other provisions of the CAA such that section 112 is not necessarily rendered "inadequate" due to its focus on stationary sources. For example, in the case of emissions from motor vehicles, section 202(a)(1) requires EPA to promulgate emissions standards for any air pollutants from new motor vehicles or their engines which in the Administrator's judgment cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare (42 U.S.C. § 7521(a)(1)). In addition, section 211(k)(1) requires EPA to promulgate requirements for the reformulation of gasoline to control toxic air pollutants from motor vehicles which reflect the greatest degree of emission reduction achievable through the reformulation of gasoline, taking into consideration cost and various factors. "Toxic air pollutants" are defined to include polycyclic organic matter (POM), a pollutant of concern for the Great Waters (42 U.S.C. § 7545(k)(1), (10)(C)). Finally, section 213(a)(4) allows EPA to promulgate regulations applicable to emissions from nonroad engines or vehicles, in addition to those covering ozone and carbon monoxide, whenever the Administrator determines that

those emissions may reasonably be anticipated to endanger public health or welfare (42 U.S.C. § 7547(a)(4)).

Based on this analysis, EPA believes that its authority to list stationary sources of the listed HAP is sufficiently comprehensive for domestic stationary sources, including small stationary sources. The EPA is not aware of any basis by which a category or subcategory of stationary sources of a listed HAP that is of concern under the Great Waters program could evade listing for regulation under section 112. While this authority is limited to stationary sources and thus does not authorize regulation of mobile sources under section 112, EPA's other CAA authority provides sufficient authority to address HAP emissions from nonstationary sources subject to the CAA such that the listing provisions of section 112(c) are adequate for purposes of section 112(m)(6).

E. Regulations to Control Emissions of Pollutants

1. Maximum achievable control technology and Generally Available Control Technology Standards

Once a pollutant is formally listed under section 112(b), and EPA has also listed the stationary source categories or subcategories of that pollutant, the Agency is

required by section 112(d)(2) to promulgate regulations to establish emission standards requiring the maximum degree of reduction in emissions of the HAP, including a prohibition on such emissions where achievable, that the Administrator, taking into consideration the cost of achieving these emission reductions and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new or existing sources in the category or subcategory to which the emission standard applies (42 U.S.C. § 7412(d)(2)).¹² These standards are referred to as MACT standards, and they must require application of

¹²42 U.S.C. § 7412(d)(2) provides:

Emissions standards promulgated under this subsection and applicable to new or existing sources of hazardous air pollutants shall require the maximum degree of reduction in emissions of the hazardous air pollutants subject to this section (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new or existing sources in the category or subcategory to which such emission standard applies, through application of measures, processes, methods, systems or techniques including, but not limited to, measures which--

- (A) reduce the volume of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications,
- (B) enclose systems or processes to eliminate emissions,
- (C) collect, capture or treat such pollutants when released from a process, stack, storage or fugitive emissions point,
- (D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in subsection (h) of this section, or
- (E) are a combination of the above.

None of the measures described in subparagraphs (A) through (D) shall, consistent with the provisions of section 7414© of this title, in any way compromise any United States patent or United States trademark right, or any confidential business information, or any trade secret or any other intellectual property right.

measures, processes, methods, systems or techniques which reduce the volume of, or eliminate, emissions of HAP. Such reduction or elimination of HAP may occur through process changes, substitution of materials or other modifications, enclosing systems or processes to eliminate emissions, and taking other specified measures. Id.

Subsection 112(d)(3) goes on to establish that these emission standards may not be less stringent than the emission control that is achieved in practice by the best controlled similar source, in the case of new sources; by the average emission limitation achieved by the best performing 12 percent of the existing sources; or by the average emission limitation achieved by the best performing five existing sources, where there are fewer than 30 sources in the category or subcategory, whichever is applicable (42 U.S.C. § 7412(d)(3)).¹³ Moreover, for source categories or

¹³42 U.S.C. § 7412(d)(3) provides:

The maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator. Emissions standards promulgated under this subsection for existing sources in a category or subcategory may be less stringent than standards for new sources in the same category or subcategory but shall not be less stringent, and may be more stringent than--

(A) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information), excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate (as defined

subcategories of area sources listed under section 112(c), section 112(d)(5) allows EPA, in lieu of requiring MACT for such sources, to promulgate standards which provide for the use of GACT) or management practices to reduce emissions of HAP (42 U.S.C. § 7412(d)(5)). Additional provisions are made for emission standards for coke ovens, and an exclusion from regulation is provided for radionuclides and their sources licensed by the Nuclear Regulatory Commission if certain findings are made. Finally, section 112(d)(7) provides that any more stringent requirements or emissions limitations established under provisions of the Act other than section 112 or under State authority are preserved (42 U.S.C. § 7412(d)(7)).

While section 112(d)(5) of the CAA allows EPA to restrict application of MACT standards to major sources and to promulgate less stringent GACT standards for area sources, the Agency is not required to do so. As discussed earlier in this notice, although major sources are defined as those which emit 10 tons per year or more of any HAP or 25 tons per year of any combination of HAP, EPA is granted

by section 7501 of this title) applicable to the source category and prevailing at the time, in the category or subcategory for categories and subcategories with 30 or more sources, or

(B) the average emission limitation achieved by the best performing 5 sources (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory for categories or subcategories with fewer than 30 sources.

discretion under section 112(a)(1) to establish a lesser quantity emissions rate (LQER) for a major source on the basis of the potency of the air pollutant, persistence, potential for bioaccumulation, other characteristics of the air pollutant, or other relevant factors (42 U.S.C. § 7412(a)(1)). In addition, EPA interprets section 112(d)(5) as authorizing the Administrator to establish GACT standards for area sources when the imposition of MACT is determined to be unreasonable (See 60 FR 4948, 4953, January 25, 1995). Thus, while EPA is permitted by section 112(d)(5) to establish standards or requirements which provide for the use of GACT or management practices to reduce emissions of HAP, EPA retains discretion to subject area source categories or subcategories to MACT where appropriate.

While the provisions of section 112(d) require EPA to focus the potentially more stringent performance standards and control efforts on major sources, they also allow EPA the discretion to apply these requirements to smaller sources.

Section 112(e) establishes an aggressive schedule for establishing section 112(d) standards. In addition to requiring all emission standards for all categories and subcategories to be promulgated no later than November 15, 2000, section 112(e)(2) requires EPA to

consider the known or anticipated adverse effects of HAP on public health and the environment and other factors when determining priorities for promulgating section 112(d) standards (42 U.S.C. § 7412(e)(2)).

2. Residual Risk Standards

The Agency expects to achieve the vast majority of HAP emissions reductions under section 112 through application of the section 112(d) MACT and GACT programs. It must be stressed, however, that MACT and GACT standards are not required to achieve a specified health-based result or prevent specified environmental effects. Consequently, section 112 provides another mechanism to address situations where additional reductions are necessary to protect the public health or prevent an adverse environmental effect, even after imposition of controls such as MACT or GACT. The EPA is required by section 112(f)(2)(A) to promulgate more stringent standards within 8 years after the adoption of the initial MACT standards, if such action is necessary to provide an ample margin of safety to protect public health or to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect (42 U.S.C. § 7412(f)(2)(A)).¹⁴ Whenever MACT

¹⁴42 U.S.C. § 7412(f)(2)(A) provides:

If Congress does not act on any recommendation submitted under paragraph (1), the Administrator shall, within 8 years after promulgation of standards for each category

standards under section 112(d) applicable to a source category or subcategory emitting a pollutant classified as a known, probable or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million, standards are required under section 112(f). If providing an ample margin of safety to protect public health is not adequate to prevent an adverse environmental effect, a more stringent standard must be promulgated. In addition, while section 112 does not require EPA to conduct residual risk analyses for GACT standards, the Agency retains the discretion to establish residual risk standards in appropriate cases after application of GACT. The EPA views this provision as providing the Agency the authority to prevent any remaining

or subcategory of sources pursuant to subsection (d) of this section, promulgate standards for such category or subcategory if promulgation of such standards is required in order to provide an ample margin of safety to protect public health in accordance with this section (as in effect before November 15, 1990) or to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect. Emission standards promulgated under this subsection shall provide an ample margin of safety to protect public health in accordance with this section (as in effect before November 15, 1990), unless the Administrator determines that a more stringent standard is necessary to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect. If standards promulgated pursuant to subsection (d) of this section and applicable to a category or subcategory of sources emitting a pollutant (or pollutants) classified as a known, probable or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million, the Administrator shall promulgate standards under this subsection for such source category.

adverse environmental effect, as defined in section 112(a)(7), presented by HAP emissions from stationary sources after imposition of controls under section 112(d).

As discussed earlier in today's notice, for purposes of section 112 in general, the term "adverse environmental effect" is defined by section 112(a)(7) to include "any significant and widespread adverse effect, which may reasonably be anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas" (42 U.S.C. § 7412(a)(7)). Again, EPA interprets the scope of this defined term to apply as broadly as the effects discussed in section 112(m)(6). Moreover, section 112(f)(2)(A) allows the Agency to promulgate appropriate further emissions standards for a source category or subcategory as necessary to provide an ample margin of safety to protect public health or to prevent any adverse environmental effect. Where the risk of harm to public health or the risk of an adverse environmental effect is presented by only certain sources within a source category or subcategory, EPA believes it may appropriately tailor the section 112(f)(2) regulations applicable to the source category or subcategory such that the requirement to achieve

additional emissions reductions or undertake other control efforts is imposed only on those sources within the category or subcategory that present the risk. This approach would avoid possible unnecessary imposition of these risk-based requirements on any sources in the category or subcategory whose emissions do not present such risk, and allow EPA to most effectively craft the section 112(f)(2)(A) requirements applicable to the category or subcategory to specifically address the risks at issue. This interpretation is supported by section 112(f)(2)(A)'s provision that EPA is authorized to promulgate additional standards to prevent "an" adverse environmental effect. The reference to "adverse environmental effect" in the singular contemplates a situation where, for example, an adverse environmental effect is presented by a limited number of sources within a source category or subcategory, over a limited geographic or situational range. Moreover, while EPA recognizes that section 112(f)(2)(A) requires the Agency to consider cost, energy, safety and other relevant factors when establishing a more stringent limit than is necessary to protect the public health with an ample margin of safety, EPA has substantial discretion in determining how to evaluate those factors and what weight to give them. (See, New York v. Reilly, 969 F.2d 1147, 1150 (D.C. Cir. 1992) (citing Center

for Auto Safety v. Peck, 751 F.2d 1336, 1342 (D.C, Cir. 1985), Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1045 (D.C. Cir. 1978)(Congress "left EPA with discretion to decide how to account for the consideration of factors, and how much weight to give each factor".) The presence of these factors further supports EPA's view that it has substantial discretion in developing the most appropriate approaches to addressing residual risks presented by source categories or subcategories. For example, EPA could use its section 112(f) residual risk authority to address adverse environmental effects to Great Waters waterbodies that are associated with the atmospheric deposition of HAP emitted by particular sources within source categories.

In developing additional standards to address residual risk following adoption of MACT standards, section 112(f) states that the Administrator shall not be required to conduct any residual risk review or promulgate additional emission limitations for any category or subcategory of area sources that is listed under section 112(c)(3) for which a GACT emission standard is promulgated pursuant to section 112(d)(5) (42 U.S.C. § 7412(f)(5)).¹⁵ In effect, this

¹⁵42 U.S.C. § 7412(f)(5) provides:

The Administrator shall not be required to conduct any review under this subsection or promulgate emission limitations under this subsection for any category or subcategory of area sources that is listed pursuant to subsection (c)(3) of this section and for which an emission standard is promulgated pursuant to section (d)(5) of this section.

provision grants discretionary authority to EPA to provide an exemption for area sources from the more stringent residual risk standards. It is important to emphasize, however, that this exemption is wholly within EPA's discretion so that, should the Agency determine that emissions of one or more HAP from area sources within a source category or subcategory pose unacceptable remaining risks to human health or the environment, even after application of section 112(d) emission controls, it has authority under section 112(f) to adopt more stringent standards governing these sources as well. This is in addition to EPA's discretionary authority to apply more stringent MACT standards to area sources in the first instance. Thus, the CAA provides authority in section 112(f)(2)(A) to take action with respect to stationary source categories or subcategories as needed to prevent the same sorts of effects identified under section 112(m)(6), and to focus such action so that the duty to undertake measures in compliance with the residual risk standard is triggered by sources within the subject category or subcategory that present the risk of causing these effects.

F. Urban Area Source Program

Section 112(k) requires EPA to implement the urban area source program. After conducting research to monitor,

analyze and consider HAP emissions from area sources in urban areas and their public health risks, EPA is required under section 112(k)(3)(B)(I) to identify the 30 HAP emitted from area sources that present the greatest threat to public health in the largest number of urban areas (42 U.S.C. § 7412(k)(3)(B)(I)). The EPA must then identify the source categories for listing under section 112(c), assuring that sources accounting for at least 90 percent of the aggregate emissions of each of the 30 identified HAP will be subject to standards pursuant to section 112(d) (42 U.S.C. § 7412(k)(3)(B)(ii)).

Section 112(k)(3)(C) then requires EPA to prepare a strategy including a schedule of specific actions to reduce public health risks posed by emissions of HAP by area sources, which would be implemented by EPA or the States under several Federal and State environmental statutes. This strategy must achieve at least a 75 percent reduction in the incidence of cancer attributable to exposure to HAP emitted by stationary sources (42 U.S.C. § 7412(k)(3)(C)). In addition to this national urban area source strategy, EPA shall also encourage and support areawide strategies developed by State and local agencies intended to reduce risks from emissions by area sources in particular urban areas, and prepare guidelines for control technologies or

management practices which may be applicable to various source categories (42 U.S.C. § 7412(k)(4)).

To the extent that the urban area source program identifies and achieves reductions in HAP that are also pollutants of concern in the Great Waters, section 112(k) provides an additional tool for reducing HAP emissions that present serious adverse effects to the public health or environment through atmospheric deposition. For example, this program could result in significant reductions in emissions of POM, with incidental benefits for the specific environmental values required to be protected under the Great Waters provisions, if POM is identified as one of the 30 most hazardous air pollutants emitted by area sources.

G. Studies and Reports to Congress

1. Mercury

Section 112(n)(1)(B) requires EPA to study and report to Congress on mercury emissions from electric utility steam generating units, municipal waste combustion units, and other sources, including area sources (42 U.S.C. § 7412(n)(1)(B)).¹⁶ This study must consider the rate and

¹⁶42 U.S.C. § 7412(n)(1)(B) provides:

The Administrator shall conduct, and transmit to the Congress not later than 4 years after November 15, 1990, a study of mercury emissions from electric utility steam generating units, municipal waste combustion units, and other sources, including area sources. Such study shall consider the rate and mass of such emissions, the health and environmental effects of such emissions, technologies which are available to control such emissions, and the costs of such technologies.

mass of such mercury emissions, the health and environmental effects of the emissions, available technologies to control these emissions, and the costs of applying such technology.

When the report becomes final, the results of the study will be helpful in prioritizing mercury reduction strategies.

2. Electric Utilities

Under section 112(n)(1)(A), EPA must also study and report to Congress on the hazards to public health reasonably anticipated to occur as a result of emissions of HAP by electric utility steam generating units after imposition of the CAA requirements (42 U.S.C. § 7412(n)(1)(A)).¹⁷ This report must develop and describe alternative control strategies for emissions which may warrant regulation under section 112, and EPA is required by section 112(n)(1)(A) to regulate electric utility steam generating units under section 112 if EPA finds such

¹⁷42 U.S.C. § 7412(n)(1)(A) provides:

The Administrator shall perform a study of the hazards to public health reasonably anticipated to occur as a result of emissions by electric utility steam generating units of pollutants listed under subsection (b) of this section after imposition of the requirements of this chapter. The Administrator shall report the results of this study to the Congress within 3 years after November 15, 1990. The Administrator shall develop and describe in the Administrator's report to Congress alternative control strategies for emissions which may warrant regulation under this section. The Administrator shall regulate electric utility steam generating units under this section, if the Administrator finds such regulation is appropriate and necessary after considering the results of the study required by this subparagraph.

regulation is necessary and appropriate after considering the study.

These provisions provide EPA the authority to achieve reductions in HAP emissions from electric utilities as necessary and appropriate to prevent reasonably anticipated hazards to public health and the environment, which would have benefits for the Great Waters. For example, if EPA determines that regulation of mercury emissions from electric utilities is necessary and appropriate, EPA would have the full set of regulatory tools available under section 112 to address those emissions, including section 112(f), as well as any additional alternative control strategies the Agency has identified in its Report to Congress.

H. Solid Waste Incineration Units

Solid waste incineration units such as those that combust municipal waste, medical waste, and industrial and commercial waste, are regulated under sections 111 and 129 of the CAA. While this is not literally a section 112 program, the types of standards to be applied under section 129(a)(2) are MACT standards, and shall be based on methods and technologies for removal or destruction of pollutants before, during or after combustion. For new units, they must incorporate siting requirements that minimize, on a

site-specific basis, to the maximum extent practicable, potential risks to public health or the environment (42 U.S.C. § 7429(a)(2), (3)).¹⁸ These standards are required for certain HAP (as well as specified criteria pollutants) identified in section 129: solid waste incineration units must be subjected to numerical emission limitations for lead, cadmium, mercury, dioxins and dibenzofurans (42 U.S.C. § 7429(a)(4)).¹⁹ Moreover, section 129(h)(3) requires EPA

¹⁸42 U.S.C. § 7429(a)(2) and (3) provide:

(2) Standards applicable to solid waste incineration units promulgated under section 7411 of this title and this section shall reflect the maximum degree of reduction in emissions of air pollutants listed under section (a)(4) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new or existing units in each category. The Administrator may distinguish among classes, types (including mass-burn, refuse-derived fuel, modular and other types of units), and sizes of units within a category in establishing such standards. The degree of reduction in emissions that is deemed achievable for new units in a category shall not be less stringent than the emissions control that is achieved in practice by the best controlled similar unit, as determined by the Administrator. Emissions standards for existing units in a category may be less stringent than standards for new units in the same category but shall not be less stringent than the average emissions limitation achieved by the best performing 12 percent of units in the category (excluding units which first met the lowest achievable emissions rates 18 months before the date such standards are proposed or 30 months before the date such standards are promulgated, whichever is later).

(3) Standards under section 7411 of this title and this section applicable to solid waste incineration units shall be based on methods and technologies for removal or destruction of pollutants before, during, or after combustion, and shall incorporate for new units siting requirements that minimize, on a site specific basis, to the maximum extent practicable, potential risks to public health or the environment.

¹⁹42 U.S.C. § 7429(a)(4) provides:

The performance standards promulgated under section 7411 of this title and this section and applicable to solid waste incineration units shall specify numerical emission limitations for the following substances or mixtures: particulate matter (total and fine), opacity (as appropriate), sulfur dioxide, hydrogen chloride, oxides of nitrogen, carbon

to promulgate residual risk standards under section 112(f)(2) for emissions of these pollutants from solid waste incineration units, if such standards are required in order to provide an ample margin of safety to protect the public health or to prevent an adverse environmental effect as set forth in section 112(f)(2)(A) (42 U.S.C. § 7429(h)(3)).²⁰ Finally, State and local government agencies are authorized under section 129(h)(1) to adopt and enforce regulations, requirements, limitations or standards relating to solid waste incineration units that are more stringent than those promulgated by EPA (42 U.S.C. § 7429(h)(1);(b)(2)).

This program will result in significant reductions in emissions of pollutants of concern for the Great Waters from solid waste incineration units. Especially in light of the authority to subject these units to residual risk standards

monoxide, lead, cadmium, mercury, and dioxins and dibenzofurans. The Administrator may promulgate numerical emissions limitations or provide for the monitoring of postcombustion concentrations of surrogate substances, parameters or periods of residence time in excess of stated temperatures with respect to pollutants other than those listed in this paragraph.

²⁰42 U.S.C. § 7429(h)(3) provides:

The Administrator shall promulgate standards under section 7412(f) of this title for a category of solid waste incineration units, if promulgation of such standards is required under section 7412(f) of this title. For purposes of this preceding sentence only--

(A) the performance standards under subsection (a) of this section and section 7411 of this title applicable to a category of solid waste incineration units shall be deemed standards under section 7412(d)(2) of this title, and

(B) the Administrator shall consider and regulate, if required, the pollutants listed under subsection (a)(4) of this section and no others.

under section 112(f)(2) and EPA's substantial discretion afforded under that subsection, EPA believes that it has adequate authority to prevent solid waste incineration unit emissions of the specified HAP in section 129(a)(4) from causing serious adverse public health and environmental effects associated with deposition to the Great Waters.

IV. Determinations of Adequacy and No Need for Further Regulations

Based on available information and on the foregoing analysis, guided by EPA's interpretation of the statutory requirements of section 112(m), EPA believes that the other provisions of section 112 are adequate to prevent serious, adverse effects to public health and serious or widespread environmental effects associated with the deposition of HAP which are emitted by stationary sources for which EPA has authority and jurisdiction under section 112 to regulate. As a result, the Agency also believes that no further emissions standards or control measures under section 112(m)(6), beyond those authorized or required by the other provisions of section 112, are necessary and appropriate at this time. The EPA further believes that even if section 112 were found to be inadequate under section 112(m)(6), because much scientific information is still lacking concerning such things as the relative contribution of air

emissions of pollutants of concern to adverse effects, it would not be possible at this time for the Agency to conclude confidently that further regulatory actions beyond those authorized or required to be taken under section 112 are necessary and appropriate. The EPA solicits comments on the draft determination, and on the analysis contained in today's notice. The Agency reserves its right to reconsider these draft determinations if the public comments on the draft determinations convince EPA that it is incorrect in its analysis, or if future events or additional information indicate EPA's determinations are not accurate. In addition, when EPA finalizes these determinations, EPA reserves its right to promulgate any necessary and appropriate further regulations pursuant to section 112(m)(6), in the event that EPA in the future, based on new information, revisits and reverses these determinations.

The EPA is committed to continuing its analyses, research and assessments of all aspects of atmospheric transport, deposition, fate and effects of hazardous air pollutants emitted by section 112 sources. The EPA is further committed to faithfully implementing the mandates and authorities under section 112 of the CAA, and to pursuing other available authorities, as appropriate, to minimize unreasonable threats to humans and to the

environment as a result of exposure to toxic pollutants, whether such exposures result directly from emissions into the air, through introduction to watersheds or waterbodies, or through other pathways. The EPA will continue to work cooperatively with the National Oceanic and Atmospheric Administration and the scientific community to refine methods for measuring or estimating atmospheric transport and deposition of HAP in order to more reliably characterize and quantify the significance of atmospheric deposition to environmental quality.

It is important to distinguish between EPA's draft determinations in this notice and the Agency's judgments about the extent to which adverse effects may be occurring due to atmospheric deposition of HAP from all sources, or about the extent to which additional actions within the scope of its other authorities under section 112 may be warranted. In today's notice, EPA is announcing only that it believes it has adequate authority under section 112 to prevent the section 112(m)(6) enumerated adverse health or environmental effects associated with emissions of HAP from sources which section 112 was intended to regulate, and that, at this time, EPA does not believe that further emissions standards or control measures under section 112(m)(6) to prevent such effects, beyond those that are

authorized or required by the other provisions of section 112, are necessary or appropriate for stationary sources of HAP. These draft determinations in no way represent a conclusion on EPA's part that air deposition of HAP does not currently cause or contribute to adverse effects to the public health or the environment.

Dated:

Carol Browner
Administrator