6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[AD-FRL-____]

Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of regulatory finding.

SUMMARY: This notice presents EPA's finding required by section 112(n)(1)(A) of the Clean Air Act (CAA) as to whether regulation of emissions of hazardous air pollutants (HAP) from fossil fuel-fired electric utility steam generating units (as defined in section 112(a)(8) of the CAA) is appropriate and necessary. This finding is based on the results of EPA's February 1998 "Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units--Final Report to Congress" (utility RTC), and on information obtained subsequent to the utility RTC concerning HAP emissions to the atmosphere from electric utility steam generating units. In the utility RTC, the EPA indicated that coal- and oil-fired electric utility steam generating units are significant emitters of HAP, including mercury which is emitted from coal-fired units, and which EPA identified as the HAP of greatest concern to public health from the industry. Based on the available information, the Administrator finds that regulation of HAP emissions from coal- and oil-fired electric utility steam generating units under section 112 of the CAA is appropriate

and necessary. As a result, this notice adds coal- and oil-fired electric utility steam generating units to the list of source categories under section 112(c) of the CAA. Also in the utility RTC, the EPA indicated that the impacts due to HAP emissions from natural gas-fired electric utility steam generating units were negligible based on the results of the study. The Administrator finds that regulation of HAP emissions from natural gas-fired electric utility steam generating units is not appropriate or necessary. The EPA does not believe that the definition of electric utility steam generating unit found in section 112(a)(8) of the CAA encompasses stationary combustion turbines. Therefore, the finding concerning natural-gas fired electric utility steam generating units does not apply to stationary combustion turbines.

ADDRESSES: Docket No. A-92-55, containing information used in development of this notice, is available for public inspection and copying between 8:00 a.m. and 5:30 p.m., Monday through Friday, excluding legal holidays. The docket is located in EPA's Air and Radiation Docket and Information Center, Waterside Mall, Room M-1500, 401 M Street, SW, Washington, DC 20460, or by calling (202) 260-7548. A reasonable fee may be charged for copying docket materials.

FOR FURTHER INFORMATION CONTACT: Mr. William Maxwell, Emission Standards Division (MD-13), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919)

541-5430, facsimile number (919) 541-5450, electronic mail address <maxwell.bill@epa.gov>.

SUPPLEMENTARY INFORMATION:

Docket. The docket is an organized file of all the information submitted to or otherwise relied upon by EPA in the development of this regulatory finding. The principal purpose of the docket is to allow interested parties to identify and locate documents that serve as a record of the process engaged in by EPA which resulted in the publication of today's finding.

World Wide Web. In addition to being available in the docket, an electronic copy of today's notice will be posted on the Technology Transfer Network's (TTN) policy and guidance information page <http://www.epa.gov/ttn/oarpg> under "Recent Actions." The TTN provides information and technology exchange in various areas of air pollution control. If more information regarding the TTN is needed, call the TTN HELP line at (919) 541-5384.

I. What is the statutory authority and background of this finding?

Today's finding is issued under the authority of section 112(n)(1)(A) and 112(c) of the CAA. Section 112(n)(1)(A) requires that, after considering the results of the study mandated by the same section and reported in the utility RTC, the Administrator determine whether regulation

of HAP emissions from electric utility steam generating units is appropriate and necessary. The study was initiated following enactment of the 1990 Amendments to the CAA, which included section 112(n)(1)(A). Data were gathered, and the utility RTC was prepared. Section 112(c) provides that the Administrator shall list categories of sources of the air pollutants contained in the section 112(b) list. The listing of source categories under section 112(c) is a dynamic process. (See "Initial List of Categories of sources under Section 112(c)(1) of the Clean Air Act Amendments of 1990," 57 FR 31576.) Decisions as to the description and scope of source categories listed will be perfected during the course of the rulemaking process for each listed category and will take account of improvements in available information and analysis during the rulemaking. A draft utility RTC was submitted for scientific peer review in July 1995, and, concurrently, was made available for public review (60 FR 35393). A public meeting to obtain comments from the scientific peer review panel was held on July 11-12, 1995 in Research Triangle Park, North Carolina. In addition, a public outreach meeting was held on July 13, 1995 in Durham, North Carolina, at which time the public was invited to present oral comments on its interpretation of the "results of the study." The utility RTC was finalized in February 1998 and released to Congress and the public. In the final utility RTC, the EPA stated that, for the

utility industry, mercury from coal-fired electric utility steam generating units was the HAP of greatest concern for public health.

To further inform the regulatory finding, the EPA issued an information collection request under the authority of section 114 of the CAA to all coal-fired electric utility steam generating units requesting coal data from such units for calendar year 1999. Certain units were also required to conduct stack tests to evaluate their HAP emissions. In addition, the EPA solicited data from the public through a February 29, 2000 notice (65 FR 10783). Another public meeting was held on June 13, 2000 in Chicago, Illinois, where the public was invited to provide EPA with their views on what the regulatory finding should be (65 FR 18992).

Further, the EPA undertook an evaluation of the mercury control performance of various emission control technologies that are either currently in use on electric utility steam generating units for pollutants other than mercury or that could be applied to such units for mercury control. The evaluation was conducted along with other parties, including the Department of Energy (DOE).

In addition, at the direction of Congress, the EPA funded the National Academy of Sciences (NAS) to perform an independent evaluation of the available data related to the health impacts of methylmercury and provide recommendations for EPA's reference dose (RfD--the amount of a chemical

which, when ingested daily over a lifetime, is anticipated to be without adverse health effects to humans, including sensitive subpopulations). The NAS conducted an 18-month study of the available data on the health effects of methylmercury and provided EPA a report of its findings in July 2000.

II. What has EPA learned from the utility RTC and the subsequent data-gathering activities?

The following four sections present a summary of the information and conclusions presented in the utility RTC along with the information obtained subsequent to publishing the utility RTC.

A. Health Hazard Assessment

The EPA evaluated exposures, hazards, and risks due to HAP emissions from coal-, oil-, and natural gas-fired electric utility steam generating units. Much of the assessment focused on inhalation exposure. However, multipathway exposures (e.g., inhalation plus ingestion) were considered for six HAP (mercury, radionuclides, arsenic, cadmium, lead, and dioxins). The assessment for radionuclides was relatively extensive and included multipathway modeling for all facilities identified in the utility RTC. The analysis for mercury was primarily based on information obtained from EPA's December 1997 “Mercury Study Report to Congress” (mercury RTC) and included a multipathway modeling assessment of mercury from four model

electric utility plants. Screening level multipathway exposure modeling analyses were also conducted for arsenic and dioxins. For the other two HAP (cadmium and lead), a qualitative assessment of potential concerns for multipathway exposure was presented; multipathway modeling was not conducted for those two HAP. The methods and results of the analyses are presented in the utility RTC.

Based on the assessment of hazards and risks due to emissions of HAP from electric utility steam generating units, mercury is the HAP of greatest concern. Mercury is highly toxic, persistent, and bioaccumulates in food chains. Mercury emitted from electric utility steam generating units (and other sources), primarily in the elemental or divalent forms, is transported through the atmosphere and eventually deposits onto land or water bodies (with the divalent form depositing nearer the source than the elemental form). Once deposited, the chemical form of mercury can change (through a methylation process) into methylmercury which is a highly toxic, more bioavailable, form that biomagnifies in the aquatic food chain (e.g., fish). Nearly all the mercury that accumulates in fish is methylmercury. Fish consumption dominates the pathway for human and wildlife exposure to mercury. As of July 2000, 40 States and American Samoa have issued fish advisories for mercury. Thirteen of those States have issued advisories for all water bodies in their

State, and the other 27 States have issued advisories for over 1,900 specific water bodies.

Because the developing fetus is the most sensitive to the effects of methylmercury, the greatest concern is the consumption of mercury contaminated fish by women of childbearing age. Also of particular concern are subsistence fish-eating populations that may be consuming fish from contaminated waterbodies. The EPA estimates that about 7 percent of women of childbearing age (i.e., between the ages of 15 and 44 years) are exposed to methylmercury at levels exceeding its RfD of 0.1 microgram per kilogram body weight per day (0.1 *u*g/kg/day). The risk following exposures above the RfD is uncertain, but risk increases with increasing exposure. About 1 percent of women have methylmercury exposures 3 to 4 times the methylmercury RfD. The NAS, in its July 2000 report "Toxicological Effects of Methylmercury," affirmed EPA's assessment of methylmercury toxicity and the level of its RfD.

Most of the mercury currently entering U.S. water bodies and contaminating fish is the result of air emissions which, following atmospheric transport, deposit onto watersheds or directly to water bodies. Wastewater discharges also contribute to environmental loadings, but to a much lesser degree than air emissions. Based on modeling conducted for the mercury RTC, the EPA estimates that roughly 60 percent of the total mercury deposited in the

U.S. comes from U.S. anthropogenic air emission sources; the percentage is estimated to be even higher in certain regions (e.g., northeast U.S.). The remainder of the mercury deposited from the air comes from natural emission sources, reemissions of historic global anthropogenic mercury releases, and from anthropogenic sources outside the U.S. In the mercury RTC, the EPA concluded that, given the total mass of mercury estimated to be emitted from all anthropogenic sources and EPA's modeling of the atmospheric transport of emitted mercury, coal combustion and waste incineration most likely bear the greatest responsibility for direct anthropogenic mercury deposition to the continental U.S. Mercury emissions from waste incineration (including municipal waste combustors and hospital/medical/infectious waste incinerators) have been declining substantially over the last decade largely due to regulations issued by EPA. Electric utility steam generating units (which are not currently regulated for mercury emissions) are the largest source of mercury emissions in the U.S., estimated to emit about 30 percent of current U.S. anthropogenic emissions. There is a plausible link between emissions of mercury from anthropogenic sources (including coal-fired electric utility steam generating units) and methylmercury in fish. Therefore, mercury emissions from electric utility steam generating units are considered a threat to public health and the environment.

It is acknowledged that there are uncertainties regarding the extent of the risks due to electric utility mercury emissions. For example, there is no quantification of how much of the methylmercury in fish consumed by the U.S. population is due to electric utility emissions relative to other mercury sources (e.g., natural and other anthropogenic sources). Nonetheless, the available information indicates that mercury emissions from electric utility steam generating units comprise a substantial portion of the environmental loadings and are a threat to public health and the environment. The EPA believes that it is not necessary to quantify the amount of mercury in fish due to electric utility steam generating unit emissions relative to other sources for the purposes of this finding.

With regard to the other HAP, arsenic and a few other metals (e.g., chromium, nickel, cadmium) are of potential concern for carcinogenic effects. Although the results of the risk assessment indicate that cancer risks are not high, they are not low enough to eliminate those metals as a potential concern for public health. Dioxins, hydrogen chloride, and hydrogen fluoride are three additional HAP that are of potential concern and may be evaluated further during the regulatory development process.

The other HAP studied in the risk assessment do not appear to be a concern for public health based on the available information. However, because of data gaps and

uncertainties, it is possible that future data collection efforts or analyses may identify other HAP of potential concern.

B. Emissions

In developing the utility RTC, the EPA examined HAP emissions test data acquired by the DOE, electric utility companies and organizations, and EPA itself. Further, using section 114 authority, the EPA obtained data from each coal-fired electric utility unit to update and refine the information on mercury emissions from such units. After evaluating various methods to estimate the emissions, the EPA estimates that the industry emitted 43 tons of mercury in 1999 from 1,149 units at 464 coal-fired plants.

The analyses of the data obtained are explained in the utility RTC and in subsequent documentation. Table 1 of this notice presents estimated 1990 and 2010 nationwide HAP emissions from electric utility steam generating units as presented in the utility RTC. The estimates account for projected changes in the population of units, fuel consumption, and control device configurations. Coal- and oil-fired electric utility steam generating units are major sources (as defined in section 112(a)(1) of the CAA) of hydrogen chloride and hydrogen fluoride emissions, emit a significant number of the 188 HAP on the section 112(b) list, and are the leading anthropogenic sources of mercury emissions in the U.S.

Table 1. Selected Nationwide Estimated HAP Emissions

HAP	Selected nationwide HAP emissions estimates (tons/year)					
	Coal		Oil		Natural gas	
	1990	2010	1990	2010	1990	2010
Arsenic	61	71	5	3	0.15	0.25
Beryllium	7.1	8.2	0.5	0.4		
Cadmium	3.3	3.8	1.7	0.9		
Chromium	73	87	4.7	2.4		
Dioxins	0.000097	0.000108	2×10^{-5}	3×10^{-6}		
Formaldehyde					36	57
Hydrogen chloride	143,000	155,000	2,860	1,450		
Hydrogen fluoride	19,500	27,500				
Lead	75	87	10.6	5.4		
Manganese	164	219	9.3	4.7		
Mercury	46	60	0.25	0.13		
Nickel			393	198	2.2	3.5

For mercury, it was estimated in the utility RTC that the industry emitted approximately 46 tons in 1990 (51 tons in 1994) and was projected to emit approximately 60 tons in 2010 from 1,026 units at 426 coal-fired plants. The new information obtained under section 114 authority corroborates the emissions estimates. The increase in the number of units over that of the utility RTC results primarily from the identification of additional co-generation facilities meeting the section 112(a)(8)

definition. The quality of the 1999 data is considered to be significantly better than that of the data reported in the utility RTC. Specific coal data, including the mercury content, were obtained for each coal-fired unit in the U.S. over the entire year; previously, State-average data were used. In addition, the control performance of existing control devices for each of the three major species of mercury (divalent, elemental, and particulate) were available; for the utility RTC, only total mercury values were available. The new data allowed EPA to significantly refine and improve its analyses and evaluate various methodologies in estimating nationwide mercury emissions from coal-fired electric utility steam generating units.

C. Alternative Control Strategies

Recent data show the technologies used to control criteria pollutants (particulate matter (PM), nitrogen oxides (NO_x) and sulfur dioxide (SO_2)) are effective in controlling emissions of nearly all HAP except mercury. In addition, combinations of controls for criteria pollutants can lead to varying levels of control, and in some cases full control, of mercury emissions. The application of technologies used to control mercury emissions in conjunction with technologies used to control other pollutants, an approach called multipollutant control, can substantially reduce or offset the costs of HAP control.

Potential strategies for controlling mercury and other HAP emissions include the use of: precombustion controls (e.g., fuel switching, coal switching, coal cleaning); combustion modification methods used to control NO_x emissions; flue gas cleaning technologies that can be used to control emissions of criteria pollutants and HAP; and nontraditional controls such as demand side management and energy conservation.

Conversion of coal- and oil-fired units to natural gas firing effectively eliminates HAP emissions. Although conversion of coal-fired units to oil combustion will decrease emissions of some HAP, including mercury, it could increase emissions of others (especially nickel). Because of the wide variability in the trace metal contents of coals, switching coals generally may not result in consistently reduced HAP emissions. Current methods of coal cleaning remove portions of the trace metals contained within the coal; the average emissions reductions range from approximately 30 percent for mercury to approximately 50 percent for lead.

Nontraditional control methods (e.g., demand side management, energy conservation, pollution prevention) have the potential to result in reduced HAP emissions, but the extent to which that is possible is currently uncertain. The nontraditional controls reduce HAP emissions through the

avoided generation of HAP rather than by their removal from the exhaust gas stream.

Mercury in the flue gas from coal combustion may be present in three different forms. The forms, called species, include elemental mercury, divalent oxidized forms, and mercury adsorbed onto the surface of fly ash or other particles. The capture of mercury is highly dependent on the relative amount of mercury species that are present in the flue gas. Particulate bound mercury can easily be removed in conventional PM emission control devices such as electrostatic precipitators (ESP) and fabric filters (FF). Divalent forms of mercury are generally soluble in water and can be captured in wet scrubbers. Wet flue gas desulfurization (FGD) systems generally capture more than 90 percent of the divalent mercury, which may represent a 20 to 80 percent removal of the total mercury. Elemental mercury is insoluble in water, does not react with alkaline reagents used in FGD systems, and cannot be captured in wet scrubbers. Both the elemental and divalent forms of mercury can be adsorbed onto porous solids (e.g., fly ash, powdered activated carbon, calcium-based acid gas sorbents) for subsequent removal in a PM control device, although elemental mercury is more difficult to adsorb onto solid surfaces than are the divalent forms of mercury. Bituminous coals contain higher concentrations of chlorine and other constituents that promote the oxidation and capture of

mercury in conventional air pollution control devices. In contrast, flue gas from the combustion of subbituminous and lignite coals typically have higher amounts of the more difficult to control elemental form of mercury.

The available data indicate that installation of low-NO_x burners and other combustion modification methods in pulverized coal-fired units may increase the carbon content of the fly ash. Mercury emissions may then be reduced through adsorption onto the fly ash carbon and subsequent capture in the PM control device. The improved mercury capture may come at the expense of slightly higher emissions of organic HAP. Cyclone-fired units emit low amounts of fly ash and reduce the chances of mercury adsorption and capture as particle-bound mercury. Fluidized bed combustion systems typically have high flue gas concentrations of high carbon-content fly ash and high levels of mercury capture in PM emission control devices.

Electrostatic precipitators and FF generally remove greater than 90 percent of all trace metallic HAP, with the exception of mercury. They are not effective in reducing emissions of gas-phase HAP, which include trace organic HAP and HAP such as hydrogen chloride and hydrogen fluoride.

Mechanical collectors and wet PM scrubbers are not generally effective in reducing HAP emissions. Mechanical collectors capture only HAP that are associated with large particles; fine-particle HAP and gas-phase HAP pass through

and are emitted to the atmosphere. Wet PM scrubbers are moderately effective in reducing water-soluble HAP but do not effectively reduce HAP emissions associated with fine particulate or hydrophobic volatile organic HAP.

Dry scrubbers which employ a spray dryer adsorber (SDA) in conjunction with an ESP or FF are typically very effective in reducing HAP emissions. In SDA systems, water containing an acid gas sorbent is sprayed into a reaction vessel where the acid gases and other pollutants are reacted to form solid particles that can be collected in a downstream PM control device. Some coal-fired utilities that use bituminous coal in pulverized coal-fired units have shown mercury capture in excess of 90 percent in SDA/FF systems.

Wet FGD systems are capable of capturing nearly all HAP other than mercury and more than 90 percent of the divalent and particle bound mercury. Mercury removal in wet FGD systems may range from less than 20 to more then 80 percent, depending on the type of coal and combustion system used. Mercury capture in such units can be improved by the use of catalysts or reagents to increase the conversion of elemental mercury to soluble divalent forms of mercury.

Recent research indicates that mercury removal may be enhanced through the use of oxidizing agents (that convert elemental mercury to the ionized form) or through the use of sorbents (that adsorb the mercury onto solid particles).

Enhanced mercury removal may also be achieved through greater use of multipollutant control options. Recent data indicate that the use of selective catalytic or noncatalytic reduction for NO_x control may also oxidize mercury and, therefore, enhance mercury control.

Thus, EPA's analysis of potential HAP control strategies allows EPA to conclude that, during the regulatory development process, effective controls for mercury and other HAP can be shown to be feasible.

D. Conclusions

The following conclusions summarize those presented in the utility RTC and those based on the information subsequently obtained and are based on the currently available scientific data. The conclusions, as a whole, support a finding that regulation of coal- and oil-fired electric utility steam generating units for HAP is appropriate and necessary.

1. Fossil fuel-fired electric utility steam generating units (coal- and oil-fired units in particular) emit a significant number of the 188 HAP included on the section 112(b) list. Estimated growth in the number of, and fuel use by, electric utility steam generating units (particularly coal-fired units) during the period 1990 to 2010 will result in an overall increase in HAP emissions. The new data gathered to date corroborate the previous nationwide mercury emissions estimate and confirm that

electric utility steam generating units are the largest anthropogenic source of mercury in the U.S.

2. Mercury is highly toxic, persistent, and bioaccumulates in the food chain. Mercury emissions are transported through the atmosphere and eventually deposit onto land or water bodies. The deposition can occur locally near the source or at long distances (e.g., hundreds or thousands of miles away). The air transport and deposition patterns of mercury emissions depend on various factors, including: the form of mercury released (divalent mercury deposits nearer to the source whereas elemental mercury enters the global pool and deposits farther from the source); the stack height and meteorology; and chemical transformations during transport in the atmosphere. Once deposited, the chemical form of mercury can change into methylmercury (through a methylation process), which is a more toxic form that biomagnifies up the aquatic food chain. Fish consumption dominates the pathway for human and wildlife exposure to mercury. There is a plausible link between emissions of mercury from anthropogenic sources (including coal-fired electric utility units) and methylmercury in fish.

3. Neurotoxicity is the health effect of greatest concern with methylmercury exposure. Methylmercury has a relatively long half-life in the human body (averaging about 70 to 80 days). Dietary methylmercury is almost completely absorbed into the blood and distributed to all tissues including the

brain; it also readily passes through the placenta to the fetus and fetal brain. The developing fetus is considered most sensitive to the effects from methylmercury; therefore, women of childbearing age are the population of greatest concern. Offspring born of women exposed to relatively high levels of methylmercury during pregnancy have exhibited a variety of developmental neurological abnormalities, including delayed developmental milestones, cerebral palsy, and reduced neurological test scores. Studies suggest that far lower levels of in utero exposures have resulted in delays and deficits in learning abilities. It is also possible that children exposed after birth are also potentially more sensitive to the toxic effects of methylmercury than adults because their nervous systems are still developing.

4. Extrapolating from high-dose exposure incidents, the EPA derived an RfD for methylmercury of 0.1 *u*g/kg/day based on developmental neurological effects observed in children born to mothers exposed to methylmercury during their pregnancy. The NAS study determined that EPA's RfD is a scientifically justifiable level for the protection of public health. At the RfD or below, exposures are expected to be safe. The risks following exposures above the RfD are uncertain, but risk increases as exposures to methylmercury increase.

5. The results of recent dietary surveys indicate that most of the U.S. population consumes fish and is exposed to

methylmercury as a result. Based on the surveys, about 85 percent of adults in the U.S. consume fish at least once a month, about 40 percent of adults consume fish once a week, and 1 to 2 percent of adults consume fish almost daily.

6. The EPA estimates that about 7 percent of women of childbearing age (i.e., between the ages of 15 and 44 years) are exposed to methylmercury at levels exceeding the RfD and about 1 percent of women have methylmercury exposures 3 to 4 times that level.

7. Exposure to methylmercury can have serious toxicologic effects on wildlife as well as on humans. Adverse effects to avian species and wildlife have been observed in laboratory studies at levels corresponding to fish tissue methylmercury concentrations that are exceeded by a significant percentage of fish sampled in lake surveys. Generally, wildlife consume fish from a much more limited geographic area than do humans which can result in elevated levels of mercury in certain fish-eating species in localized geographic areas. Those species can include kingfisher, river otter, racoon, loon, as well as some endangered species such as the Florida panther.

8. The EPA predicts that increased mercury deposition will lead to increased levels of methylmercury in fish, and that increased levels in fish will lead to toxicity in fish-eating birds and mammals, including humans. The NAS, in its July 2000 report, stated that “because of the beneficial

effects of fish consumption, the long-term goal needs to be a reduction in the concentrations of methylmercury in fish." The EPA agrees with that goal and believes that reducing emissions of mercury from electric utility steam generating units is an important step toward achieving the goal.

9. There are a number of alternative control strategies that are effective in controlling some of the HAP emitted from electric utility steam generating units. Recent data indicate that mercury, perhaps the hardest HAP to remove from the exhaust gas stream, can be effectively removed by using oxidizing agents or sorbents injected into the gas stream. Recent data also indicate the possibility for multipollutant control with other pollutants (e.g., NO_x, SO_2, and PM), greatly reducing mercury control costs.

III. What is EPA's regulatory finding?

Based on the results of the study documented in the utility RTC, as well as subsequent analyses and other available information, the Administrator has concluded that mercury is both a public health concern and a concern in the environment. The Administrator has concluded that there is a plausible link between methylmercury concentrations in fish and mercury emissions from coal-fired electric utility steam generating units. Although the degree to which that linkage occurs cannot be estimated quantitatively now, the facts are that: there is a linkage between coal consumption and mercury emissions; electric utility steam generating

units are the largest domestic source of mercury emissions; and certain segments of the U.S. population (i.e., the developing fetus, subsistence fish-eating populations) are believed to be at potential risk of adverse health effects due to mercury exposures resulting from consumption of contaminated fish. Further, there remain uncertainties regarding the extent of the public health impact from HAP emissions from oil-fired electric utility steam generating units. Those facts and uncertainties lead the Administrator to find that regulation of HAP emissions from coal- and oil-fired electric utility steam generating units under section 112 is appropriate and necessary. It is appropriate to regulate HAP emissions from coal- and oil-fired electric utility steam generating units under section 112 of the CAA because, as documented in the utility RTC and stated above, electric utility steam generating units are the largest domestic source of mercury emissions, and mercury in the environment presents significant hazards to public health and the environment. The NAS study confirms that mercury in the environment presents significant hazards to public health. Further, it is appropriate to regulate HAP emissions from such units because EPA has identified a number of control options which EPA anticipates will effectively reduce HAP emissions from such units. It is necessary to regulate HAP emissions from coal- and oil-fired electric utility steam generating units under section 112 of

the CAA because the implementation of other requirements under the CAA will not adequately address the serious public health and environmental hazards arising from such emissions identified in the utility RTC and confirmed by the NAS study, and which section 112 is intended to address. Therefore, the EPA is adding coal- and oil-fired electric utility steam generating units to the list of source categories under section 112(c) of the CAA. As a part of developing a regulation, the effectiveness and costs of controls will be examined along with the level(s) of control that may be technically feasible.

In developing a regulation under section 112(d), the statute authorizes EPA to consider subcategorization of a source category. The emissions standard for existing sources cannot be less stringent than the average emissions limitation achieved by the best performing 12 percent of existing sources in the category or subcategory (the "floor"). However, the EPA intends to develop a record to facilitate consideration of subcategorization of the source category in setting the "floor." Based on the information that EPA has to date, the EPA anticipates that a factual record will allow EPA to propose appropriate subcategories for this source category. In developing standards under section 112(d) to date, the EPA has based subcategorization on considerations such as: the size of a facility; the type of fuel used at the facility; and the plant type. The EPA

also may consider other relevant factors such as geographic conditions in establishing subcategories. Once the source category is divided into subcategories, the EPA determines the "floor" for each subcategory and, in turn, the emissions standard independently for each subcategory. This approach has helped build flexibility in meeting environmental objectives in the past.

Once the floor is determined, the EPA can set an emissions standard that is more stringent than the floor if a tighter level of control is technically achievable and is justified. Factors that must be considered in deciding whether a more stringent standard than the floor is justified include: the cost of a more stringent standard; the energy requirements; and any non-air quality health and environmental factors.

Every source has to meet the level of a standard set under section 112(d), but not necessarily every individual unit at a source. Most electric generating plants have several units and so in meeting the standard there may be opportunity for lower cost solutions because the law allows for differences in reductions among units as long as the source as a whole is in compliance.

There is considerable interest in an approach to mercury regulation for power plants that would incorporate economic incentives such as emissions trading. Such an approach can reduce the cost of pollution controls by

allowing for least-cost solutions among a universe of facilities that face different control costs. Trading also can allow for a greater level of control overall because it offers the opportunity for greater efficiency in achieving control. The EPA, however, recognizes and shares concerns about the local impacts of mercury emissions and any regulatory scheme for mercury that incorporates trading or other approaches that involve economic incentives must be constructed in a way that assures that communities near the sources of emissions are adequately protected. Thus, in developing a standard for utilities, the EPA should consider the legal potential for, and the economic effects of, incorporating a trading regime under section 112 in a manner that protects local populations.

The Administrator finds that regulation of HAP emissions from natural gas-fired electric utility steam generating units is not appropriate or necessary because the impacts due to HAP emissions from such units are negligible based on the results of the study documented in the utility RTC.

The EPA has previously indicated that it construes the term "electric utility steam generating unit," as defined in section 112(a)(8) of the CAA and 40 CFR 63.41, to exclude all stationary combustion turbines, regardless of whether such turbines are used to generate electricity or used by an electric utility, and regardless of whether such turbines

are used in conjunction with waste heat recovery units (65 FR 34010). Therefore, the finding concerning natural-gas fired electric utility steam generating units does not apply to stationary combustion turbines.

IV. Is this action subject to judicial review?

Today's finding that it is appropriate and necessary to regulate coal- and oil-fired electric utility steam generating units adds these units to the list of source categories under section 112(c). Section 112(e)(4) of the CAA states that, notwithstanding section 307 of the CAA, no action of the Administrator listing a source category or subcategory under section 112(c) shall be a final EPA action subject to judicial review, except that any such action may be reviewed under section 307 when the Administrator issues emissions standards for such pollutant or category. Therefore, today's finding is not subject to judicial review. As specified by section 112(e)(4), judicial review would be available on both the listing decision and the subsequent regulation at the time that such final regulation is promulgated. At such time, the exact dimensions of the source category and the nature of the control required would be sufficiently clear to allow for judicial review.

V. Is EPA asking for public comment?

The EPA has held several public meetings wherein oral and written public input were solicited and obtained regarding the regulatory finding. In addition, numerous

opportunities for written comment relating to both the study and the regulatory finding have been provided. The EPA has decided that it is unnecessary to solicit additional public comment on today's finding. The regulation developed subsequent to the finding will be subject to public review and comment.

VI. Administrative Requirements

Today's notice does not impose regulatory requirements or costs. Therefore, the requirements of Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks), Executive Order 13084 (Consultation and Coordination with Indian Tribal Governments), Executive Order 13132 (Federalism), the Regulatory Flexibility Act, the National Technology Transfer and Advancement Act, and the Unfunded Mandates Reform Act do not apply to today's notice. Also, this notice does not contain any information collection requirements and, therefore, is not subject to the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. This

notice was reviewed by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993).

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Dated:

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Carol M. Browner,
Administrator.