

**ORAL ARGUMENT NOT YET SCHEDULED**  
**IN THE UNITED STATES COURT OF APPEALS**  
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

No. 12-1100 (and consolidated cases)

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WHITE STALLION ENERGY CENTER, LLC,  
Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,  
Respondent.

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Petition for Review of Final Administrative Action of the  
United States Environmental Protection Agency

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**PROOF OPENING BRIEF OF ENVIRONMENTAL PETITIONERS**

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**Dated: October 23, 2012**

**ENVIRONMENTAL PETITIONERS' CERTIFICATE AS TO  
PARTIES, RULINGS, AND RELATED CASES**

In accordance with Circuit Rules 27(a)(4) and 28(a)(1), the Chesapeake Climate Action Network, Conservation Law Foundation, Environmental Integrity Project, and Sierra Club (collectively, "Environmental Petitioners") hereby certify as follows:

**(A) Parties and Amici:**

Petitioners:

12-1100	White Stallion Energy Center, LLC
12-1101	National Mining Association
12-1102	National Black Chamber of Commerce, Institute for Liberty
12-1147	Utility Air Regulatory Group
12-1170	Eco Power Solutions (USA) Corporation
12-1172	Midwest Ozone Group
12-1173	American Public Power Association
12-1174	Julander Energy Company
12-1175	Peabody Energy Corporation
12-1176	Desert Power Electric Cooperative
12-1177	Sunflower Electric Power Corporation

12-1178 Tri-State Generation and Transmission Association, Inc.

12-1180 Tenaska Trailblazer Partners, LLC

12-1181 ARIPPA

12-1182 West Virginia Chamber of Commerce, Inc., Georgia Association of Manufacturers, Inc., Indiana Chamber of Commerce, Inc., Indiana Coal Council, Inc., Kentucky Chamber of Commerce, Inc., North Carolina Chamber, Ohio Chamber of Commerce, Pennsylvania Coal Association, South Carolina Chamber of Commerce, The Virginia Chamber of Commerce, The Virginia Coal Association, Inc., West Virginia Coal Association, Inc., and Wisconsin Industrial Energy Group, Inc.

12-1183 United Mine Workers of America

12-1184 Power4Georgians, LLC

12-1185 State of Texas, Texas Commission on Environmental Quality, Texas Public Utility Commission, and Railroad Commission of Texas

12-1186 Kansas City Board of Public Utilities, Unified Government of Wyandotte County, Kansas City, Kansas,

12-1187 Oak Grove Management Company, LLC

12-1188 Gulf Coast Lignite Coalition

12-1189 Puerto Rico Electric Power Authority

12-1190	State of Arkansas, <i>ex rel.</i> Dustin McDaniel, Attorney General
12-1191	Chase Power Development, LLC
12-1192	FirstEnergy Generation Corp.
12-1193	Edgecombe Genco, LLC and Spruance Genco, LLC
12-1194	Chesapeake Climate Action Network, Conservation Law Foundation, Environmental Integrity Project, and Sierra Club
12-1195	Wolverine Power Supply Cooperative, Inc.
12-1196	States of Michigan, Alabama, Alaska, Arizona, Florida, Idaho, Indiana, Kansas, Mississippi, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, Commonwealth of Pennsylvania, South Carolina, Utah, Commonwealth of Virginia, West Virginia, and Wyoming, and Terry E. Branstad, Governor of the State of Iowa on behalf of the People of Iowa, and Jack Conway, Attorney General of Kentucky

Respondents:

United States Environmental Protection Agency

Intervenors:

American Academy of Pediatrics  
American Lung Association

American Nurses Association  
American Public Health Association  
Calpine Corporation  
Chase Power Development, LLC  
Chesapeake Bay Foundation  
Citizens for Pennsylvania's Future  
City of Baltimore in the State of Maryland  
City of Chicago in the State of Illinois  
City of New York  
Clean Air Council  
Commonwealth of Massachusetts  
Conservation Law Foundation  
County of Erie in the State of New York  
District of Columbia  
Eco Power Solutions (USA) Corporation  
Environment America  
Environmental Defense Fund  
Exelon Corporation  
Gulf Coast Lignite Coalition  
Institute for Liberty  
Izaak Walton League of America  
The Lignite Energy Council  
NAACP  
National Black Chamber of Commerce  
National Grid Generation LLC  
National Mining Association  
National Resources Council of Maine  
Natural Resources Defense Council  
Oak Grove Management Company LLC  
Ohio Environmental Council  
Peabody Energy Corporation  
Physicians for Social Responsibility  
Public Service Enterprise Group, Inc.  
Sierra Club  
State of California  
State of Connecticut  
State of Delaware  
State of Illinois  
State of Iowa  
State of Maine

State of Maryland  
State of Minnesota  
State of New Hampshire  
State of New Mexico  
State of New York  
State of North Carolina  
State of Oregon  
State of Rhode Island  
State of Vermont  
Sunflower Electric Power Corporation  
Utility Air Regulatory Group  
Waterkeeper Alliance

Movant-Intervenors

Oak Grove Management Company, LLC  
Utility Air Regulatory Group

Amici:

Chamber of Commerce of the United States of America

Institute for Policy Integrity at New York University School of Law

Circuit Rule 26.1 Disclosures for Proposed Intervenor:

See Environmental Petitioners' Rule 26.1 Disclosure Statement.

**(B) Ruling Under Review**

The present cases seek review of the final rule promulgated by EPA titled “National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units,” published at 77 Fed.

Reg. 9304 (Feb. 16, 2012) (“Mercury and Air Toxics Standards” or “MATS Rule”).

**(C) Related Cases**

Petitioners are aware of two related cases pending before this court. First, the Court severed White Stallion Energy Center, LLC v. EPA (dealing with certain issues related to EPA’s air toxics standards applicable to newly constructed electricity generating units), from this Case No. 12-1100 and assigned it new Case No. 12-1272, by Order dated June 28, 2012 (Doc. No. 1381112) assigning it new Case No. 12-1272. Second, the Court severed claims related to the Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, into a new case UARG v. EPA, Case No. 12-1166, by Order dated August 24, 2012 (Doc. No. 1391295).

## PETITIONERS' RULE 26.1 DISCLOSURE STATEMENT

Pursuant to Fed. R. App. P. 26.1 and D.C. Circuit Rule 26.1, Petitioners make the following disclosures.

**Conservation Law Foundation.** Conservation Law Foundation is a not-for-profit corporation organized under the laws of the Commonwealth of Massachusetts that uses law, science, policy, and the business market to find pragmatic, innovative solutions to New England's toughest environmental problems. Conservation Law Foundation has no parent corporations, and no publicly held company has a 10% or greater ownership interest in Conservation Law Foundation.

**Chesapeake Climate Action Network.** Chesapeake Climate Action Network is a nonprofit corporation organized and existing under the laws of the State of Maryland founded to transition its region towards clean energy solutions to climate change, specifically in Maryland, Virginia, and Washington, D.C. Chesapeake Climate Action Network has no parent corporations, and no publicly held company has a 10% or greater ownership interest in Chesapeake Climate Action Network.

**Environmental Integrity Project.** Environmental Integrity Project is a national nonprofit corporation organized and existing under the laws of the District of Columbia that advocates for more effective enforcement of environmental laws. Environmental Integrity Project has no parent corporations and no publicly held



company has a 10% or greater ownership interest in Environmental Integrity Project.

**Sierra Club.** Sierra Club is a national nonprofit corporation organized and existing under the laws of the State of California that is dedicated to the protection and enjoyment of the environment. Sierra Club has no parent corporations and no publicly held company has a 10% or greater ownership interest in Sierra Club.

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**GLOSSARY OF ACRONYMS AND ABBREVIATIONS**

<b>Acronym</b>	<b>English</b>
CAM	Compliance Assurance Monitoring
CEMS	Continuous emissions monitoring
EGU	Electric Generating Unit
EPA	Environmental Protection Agency
HON Rule	59 Fed. Reg. 19,402 (April 22, 1994)
MACT	Maximum Achievable Control Technology
MATS Rule	<i>National Emission Standards for Hazardous Air Pollutants from Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 77 Fed. Reg. 9,304 (Feb. 16, 2012)</i>
NESHAP	National Emission Standards for Hazardous Air Pollutants
PM	Filterable particulate matter
RTC	Response to Comments
UPL	Upper Prediction Limit formula

## JURISDICTION

Petitioners seek review of a final action of the Environmental Protection Agency (EPA): *National Emission Standards for Hazardous Air Pollutants from Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units*, 77 Fed. Reg. 9,304 (Feb. 16, 2012) (the “MATS Rule,” or “Rule”), JA \_\_\_\_\_. This Court has jurisdiction under 42 U.S.C. §7607(b)(1). Petitioners timely filed their petition for review on April 16, 2011. *Id.*

## STATUTES AND REGULATIONS

Pertinent statutes and regulations appear in an addendum to this brief.

## ISSUES FOR REVIEW

1. EPA set all but one of the Rule’s existing unit air toxics emission standards at levels the Agency found to reflect the “average emission limitation achieved by the best performing 12 percent of the existing sources.” 42 U.S.C. §7412(d)(3)(A). The Rule also permits adjacent, existing units to comply with the standards on a combined, average basis. Those multi-unit averaging provisions render the standards less stringent. Did EPA thereby violate 42 U.S.C. §7412(d)(3)(A), which requires that EPA’s standards must “not be less stringent” than the “average emission limitation achieved by the best-performing 12 percent



of the existing sources”? Alternatively, was EPA’s failure to impose a “discount factor” and other restrictions to units complying on a combined, average basis arbitrary under the “maximum achievable control technology” standards of 42 U.S.C. §7412(d)(2)?

2. Did EPA act arbitrarily or unlawfully by failing to require monitoring sufficient to determine compliance with emission standards established for non-mercury metals?

## BACKGROUND

### I. The Utility Mercury and Air Toxics Standards

The Rule sets air toxics standards governing coal- and oil-fired “electric steam generating units”: large boilers which burn coal or oil to produce electricity for sale. 77 Fed.Reg. at 9,485 (40 C.F.R. §63.10042), JA\_\_\_\_; 76 Fed.Reg. 24,976 (May 3, 2011) (proposal), JA\_\_\_\_. Most power plants include several such units, and many include units built in different years. EPA-HQ-OAR-2009-0234-3044 (identifying plants, units, and on-line dates), JA\_\_\_\_. These units often deploy different controls, and may be subject to stricter emission limits under other provisions of the Act. Units built between 2005 and 2011, for example, must meet a particulate matter standard twice as protective as the standard in the Rule. Compare 40 C.F.R. §60.42Da(c)(2) with 77 Fed.Reg. at 9,490 (40 C.F.R. §UUUUU Table 2).

EPA set standards for (1) mercury; (2) acid gases (satisfied through a limit on hydrogen chloride emissions, or a limit on sulfur dioxide emissions); and (3) non-mercury metallic toxics (satisfied through compliance with a filterable particulate matter (“PM”) limit, or a series of limits on individual metallic pollutants). 77 Fed.Reg. at 9,367-69, JA\_\_\_\_-\_\_\_. EPA established distinct new and existing source standards within each subcategory for each pollutant. *Id.*

**A. Numerical Rates, Averaging Periods, and Stringency**

The Rule’s standards governing existing sources are emission rates. 77 Fed. Reg. at 9,490-93, JA\_\_\_\_-\_\_\_. The standards’ stringency – like that of any emissions rate – depends on two basic elements: the numerical emissions rate and averaging period. 64 Fed. Reg. 52,828, 52,930-31 (Sept. 30, 1999) (“[T]he stringency of a standard is a function of both the numerical value of the standard and the averaging period”), JA\_\_\_\_-\_\_.

The standards’ numerical emissions rates define the amount of pollution that may be emitted when an electric generating unit consumes (or produces) energy – akin to a baseball player’s batting average (hits produced when a player appears at the plate). As a batting average can be calculated over a single game, a month, or a full season, a numerical emission rate can be calculated over varying periods of

time – hours or days of boiler operations (“boiler operating” hours or days).<sup>1</sup> That period of time is the “averaging period.”

Stringency depends upon averaging period because over longer averaging periods, numerical rates – like batting averages – tend (or regress) towards a central, mean value. See Robert S. Witte & John S. Witte, *Statistics: Ninth Edition* (2010) 165-66 (noting “tendency of scores, especially high scores, to shrink towards the mean”), JA \_\_\_\_-\_\_\_. Since 1940, tens of thousands of players have achieved a perfect batting average of 1.000 over the three or four at-bats which occur during a single game.<sup>2</sup> Over that time, only one player has achieved a batting average over 0.400 over the five hundred or more at bats that occur over an entire season. See Stephen Jay Gould, *Full House* 98-110 (1996), JA \_\_\_\_-\_\_.

The same principle governs numerical emissions rates (although 42 U.S.C. § 7412 demands low emissions rates, while batters attempt high batting averages). A spike in pollution may result in a very high short-term emission rate over a few hours, or a few days – just as a flurry of hits creates a high batting average in a single game. But over sixty or ninety days, such short-term spikes are offset by

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<sup>1</sup> A “boiler operating day” is a calendar day in which the unit operates under normal conditions. 77 Fed. Reg. 9,484 (40 C.F.R. § 63.10042).

<sup>2</sup> [http://www.baseball-reference.com/play-index/game\\_finder.cgi?year=0&n1=&id=&type=b](http://www.baseball-reference.com/play-index/game_finder.cgi?year=0&n1=&id=&type=b) (last visited October 23, 2012) (searchable compilation of baseball statistics, including both hits and at-bats).

other values closer to (or below) the mean, in the same manner that a single game is offset as a season progresses.

As a result, the maximum numerical emissions rate for generating units declines as the averaging period increases. As EPA explained in the Rule:

[L]onger-term averages allow particularly high (or low) measurements to be averaged with many more measurements closer to the mean. This results in the highest averages from a longer-term averaging period (e.g., 90 days) being lower than the highest averages in a shorter term averaging period (e.g., 30 days).

77 Fed.Reg. at 9,385, JA\_\_\_\_\_.

Put differently, a standard with a longer averaging period permits short-term spikes in pollution that are prohibited by a shorter averaging period, even with the same numerical emission rate. A short-term averaging period can require a plant to meet the numerical emissions rate *all* the time, while a longer averaging period allows the plant to meet that rate only *some* of the time.<sup>3</sup> Consequently, at any given numerical rate, extending the averaging period's length decreases the stringency of the limit – as EPA has consistently recognized. *Id. See, e.g.,* 77 Fed.Reg. 39,943, 39,946 (July 6, 2012) (“[A] limit expressed as an annual average is inherently less stringent than the same limit expressed as a 30-day average.”),

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<sup>3</sup> EPA concluded that emissions rates for the toxics regulated by the Rule are highly variable, confirming the existence of emissions spikes for this industry. EPA's Response to Public Comments, Volume 1 (December 2011) at 499, Docket Id. No. EPA-HQ-OAR-2009-0234-20126 (“RTC”), JA\_\_\_\_\_.

JA\_\_\_\_, \_\_\_\_\_. Conversely, maintaining the stringency of a standard while increasing the averaging period requires a decrease in numerical emissions rate.

### **B. EPA's Floor Analysis**

EPA began its standard-setting process for existing sources by determining the “floor” (the least stringent standards permitted by the statute): the “average emission limitation achieved by the best performing 12 percent of existing sources in the category,” 42 U.S.C. §7412(d)(3)(A). 77 Fed.Reg. at 9,307, JA\_\_\_\_. EPA collected data primarily comprised of stack tests, which measured pollution during three test-runs of each unit, each lasting a handful of hours. From that data, EPA selected the units it believed representative of the best-performing twelve percent of existing units, and sought to determine the numerical emissions rate and averaging period reflecting their maximum, variable emissions. Maximum Achievable Control Technology (MACT) Floor Analysis for Coal- and Oil-fired Electric Utility Steam Generating Units for Final Rule (Dec. 16, 2011) at 3-4, Docket ID No. EPA-HQ-OAR-2009-0234-20132) (“Floor Memo”) JA\_\_\_\_-\_\_.

To determine the numerical emissions rate achieved by those best-performing units, EPA used “a statistical formula,” the “upper prediction limit” (“UPL”) which, according to EPA, determined the maximum rates any of those units would likely reach. 76 Fed.Reg. 25,041 ( “[I]f [EPA] were to randomly select a future...average of 3 runs...we can be 99 percent confident that the reported

level will fall at or below” the value generated by the UPL), JA \_\_\_\_\_. *See* Floor Memo at 4-5, JA \_\_\_\_-\_\_.

EPA selected 30 boiler operating days as the averaging period, finding that period to be the longest necessary to “account for . . . process and fuel variability,” RTC Vol. 1 at 564, JA \_\_\_\_-\_\_. The Agency determined that the resulting standards – the unit-specific emissions rates resulting from these calculations, with a thirty boiler operating day averaging period – represented the floor, or the “minimum stringency” permitted by the Act, 77 Fed.Reg. 9,307. RTC Vol. 1 at 459-60, JA \_\_-\_\_. *See also* 76 Fed.Reg. at 25,045, JA \_\_\_\_\_.

EPA set almost all the Rule’s standards at those floor levels. The agency imposed stricter limits (using §112(d)(2)’s “beyond the floor” process) for only one pollutant, in one subcategory (the mercury standard, for the subcategory of coal-fired units burning lower energy coals). Beyond the Maximum Achievable Control Technology (MACT) Floor Analysis for Coal- and Oil-fired Electric Utility Steam Generating EGUs (March 14, 2011) at 1, Docket ID No. EPA-HQ-OAR-2009-0234-2924 (“Beyond the floor Memo”), JA \_\_\_\_\_; 77 Fed.Reg. at 9,307, JA\_\_\_\_\_.

### C. **The Averaging Alternative**

The Rule provides a “compliance alternative” allowing adjacent existing units under common ownership to combine their emissions rates into a single,

multi-unit average. Plant owners may “averag[e] the emissions from an individual affected [unit] that is emitting above the ... limits with other affected [units] at the same facility that are emitting below the ... limits.” *Id.* at 9,385, JA\_\_\_\_; *see id.* at 9,473-75 (40 C.F.R. §63.10009(a)-(j)) (the “Averaging Alternative”), JA\_\_\_\_-\_\_.

The Averaging Alternative thereby allows units to calculate their emissions rate over a much longer averaging period than the 30 boiler operating day averaging period at which, according to EPA, the Rule’s numerical emissions rates are the floor. For example, if three adjacent units cannot all comply individually with the Rule’s numerical emissions rates over the prescribed 30 boiler operating day averaging period, the Averaging Alternative allows the owner to combine 30 boiler operating days from *each* unit into a single, combined average calculated over a total of 90 boiler operating days. 77 Fed.Reg. at 9,385, JA\_\_\_\_.

That increase in averaging period renders the limit less stringent, as adding 60 days to the averaging period for a single unit would. By analogy, an entire baseball team’s batting average includes many more at bats than a single player’s batting average; as a result, the highest *team-wide* average over any game, or season, will be lower than the highest *single player’s* batting average. Similarly, the additional boiler operating days included under the Averaging Alternative make the standard less stringent than the unit-specific floor. The Alternative masks high unit-specific emissions that would otherwise be prohibited; rather than meet

the specified numerical emissions rate all (or most of) the time, units need only meet them some of the time.

EPA has previously acknowledged that multi-unit averaging renders emission standards less stringent. Where the Agency has allowed such averaging, it has simultaneously provided a “discount factor” that lowers the numerical emissions rate to compensate for the increase in averaging period. For example, in the Hazardous Organic rulemaking (“HON Rule”) (which EPA cites in support of the Averaging Alternative, 77 Fed.Reg. at 9,386, JA\_\_\_\_) EPA concluded that, to “ensure at least the same air quality benefit as point by point compliance,” multi-source averaging requires, *inter alia*, “a discount factor” requiring plants complying on a combined, average basis to meet a lower numerical emission rate. 59 Fed.Reg. 19,402, 19,425 (April 22, 1994), JA\_\_\_\_, \_\_\_. *See also* 76 Fed.Reg. 80,598 (Dec. 23, 2011), JA\_\_\_\_, & 75 Fed.Reg. 32,006, 32,035 (June 4, 2010) (discount factor “ensure[s] averaging will be at least as stringent as the MACT floor limits”), JA\_\_\_\_, \_\_\_\_; 64 Fed.Reg. 33,550, 33,622 (June 23, 1999) (imposing discount factor), JA\_\_\_\_, \_\_\_\_; 63 Fed. 50,280, 50286 (Sept. 21, 1998) (same)JA\_\_\_\_, \_\_\_\_; 60 Fed.Reg. 43,244, 43,254 (Aug. 18, 1995) (same), JA\_\_\_\_, \_\_\_\_; 60 Fed.Reg. 16,090, 16,104 (March 29, 1995) (same), JA\_\_\_\_, \_\_\_\_; 60 Fed.Reg. 30,801, 30,812 (June 12, 1995) (same), JA\_\_\_\_, \_\_\_\_\_. *See also* 73 Fed.Reg. 58,481, 58,484 (Oct. 7, 2008) (permitting states to “consider the use



of averaging” *only* “in conjunction with more stringent limits”), JA\_\_\_\_, \_\_\_\_; 73 Fed.Reg. 40,230, 40,233 (July 14, 2008) (same), JA\_\_\_\_, \_\_\_\_; 66 Fed.Reg. 51,098, 51,124 (Oct. 5, 2001) (Agency would need “to set more stringent emissions standards” to allow averaging while still “achiev[ing] the ‘greatest degree of emission reduction’” identified), JA\_\_\_\_, \_\_\_\_.

The Agency provided no corresponding “discount” in the MATS Rule. The resulting relaxation in the stringency of the Rule’s emission standards poses real risks to the health and well-being of those near power plants. The Alternative relieves plant owners of the obligation of meeting the specified numerical rates during *every* 30 days those units operate; it thereby allows periods of high emissions that would be otherwise prohibited. *See* 77 Fed.Reg. at 9,385 (noting that alternative allows units to exceed the short-term emissions limit), JA\_\_\_\_. EPA has found that such short-term spikes in air toxics from oil- and coal-fired generating units pose substantial threats to human health. *See, e.g.*, 76 Fed.Reg. at 25,004 (describing harm resulting from “short-term” exposure to acid gases), JA\_\_\_\_.

In addition to permitting higher rates of pollution, the Averaging Alternative will, as a practical matter, allow power plants to emit a greater quantity of toxic air pollution. Many older, highly-polluting units are located next to newer units subject to limits that are significantly more stringent than those prescribed by the

MATS Rule. EPA-HQ-OAR-2009-0234-3044 (spreadsheet identifying plants, units, and on-line dates), JA\_\_\_\_. Allowing older and dirtier units to emit at rates higher than those in the Rule – by averaging their emissions with those from newer and cleaner units subject to lower emission standards than the Rule’s, for example – increases the overall amount of pollution that existing plants can emit. *See supra* at 2-3 (citing 40 C.F.R. § 60.42Da(c)(2)).

**D. The Rule’s Monitoring Provisions for Non-Mercury Metallic Toxics**

For major sources (including the power plants governed by the Rule) EPA “shall” “require enhanced monitoring.” 42 U.S.C. §7414(a)(3). EPA must require continuous emissions monitoring (“CEMS”) unless alternative methods “provide sufficiently reliable and timely information for determining compliance.” *Id.* §7661c(b). EPA’s monitoring regime “must ‘provide a reasonable assurance of compliance with emissions standards.’” *Sierra Club v. EPA*, 353 F.3d 976, 990-91 (D.C. Cir. 2004) (quoting *NRDC v. EPA*, 194 F.3d 130, 136 (D.C. Cir.1999)).

Although EPA found that continuous monitoring of particulate matter emissions was feasible, the Rule does not require it. 77 Fed.Reg. at 9,384, 9,466 (40 C.F.R. §63.10000(c)(1)(iv)), JA\_\_\_\_, \_\_\_\_\_. Instead, the Rule allows sources to elect one of several options, three of which are challenged here.

First, plant owners may measure particulates or metals through quarterly stack tests comprised of three test runs averaging three hours per run. *Id.* at 9,372, 9,384, 9481 (40 C.F.R. § 63.10023(a)), JA\_\_\_\_,\_\_\_\_, \_\_\_\_\_. The Rule deems units compliant where the average of the emission rates measured during the stack tests' runs meets the relevant emission limits at each unit (or on a plant-wide basis, if the source qualifies for emissions averaging). *See id.* (40 C.F.R. §63.10023(c)), JA\_\_\_\_, \_\_\_\_\_.

Second, the Rule allows much less frequent testing – once every three years – for any unit that demonstrates during three successive years of stack testing that its emissions are 50 percent or less of the limit. 77 Fed.Reg. at 9,371, 9,384, 9470-72 (40 C.F.R. §§63.10005(h), 63.10006(b)), JA\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_-\_\_\_\_. The Rule (unlike EPA's initial proposal) requires no monitoring of operating limits or other parameters in between the quarterly or once-in-three-year stack tests under these two options. 77 Fed.Reg. at 9,371, 9,384, JA\_\_\_\_, \_\_\_\_\_.

Third, plant owners installing a “Continuous Parametric Monitoring System” are allowed to conduct a stack test once a year, rather than quarterly. In between the annual test, the source must try to meet an operating limit derived from a raw data signal (e.g., milliamps) that corresponds to the highest single hour of emissions measured during the most recent nine hour test. *Id.* at 9466, 9481 (40 C.F.R. §§63.10000(c)(1)(iv), 63.10023), JA\_\_\_\_, \_\_\_\_\_. EPA expects this

monitoring option to be adopted by most sources. 77 Fed.Reg. at 9,304, 9,370, JA\_\_\_\_, \_\_\_\_.

### SUMMARY OF ARGUMENT

All petitioners seek vacatur of the Averaging Alternative, which is severable from the rest of the Rule. The Environmental Integrity Project and Chesapeake Climate Action Network seek remand of the monitoring provisions for non-mercury metals.

EPA defined unit-specific emission standards – specific numerical emissions rates over a 30 boiler operating day averaging period – as the “MACT floor,” representing the “minimum stringency” permitted by 42 U.S.C. §7412(d)(3)(A). 76 Fed.Reg. at 24,981, 25,044-45, JA\_\_\_\_, \_\_\_\_-\_\_. The Averaging Alternative unlawfully relaxes the standards’ stringency below that statutory minimum, by extending their averaging period. Furthermore, EPA provided no rational basis for its refusal to provide a “discount factor,” either to maintain the stringency of its standards as required by §112(d)(3), or under §112(d)(2)’s “beyond-the-floor” requirements, 42 U.S.C. §7412(d)(2).

The Rule’s monitoring provisions unlawfully fail to provide “sufficiently reliable and timely information for determining compliance,” thereby allowing facilities to emit non-mercury metals at significantly higher levels than the statute allows. The Parametric Monitoring Alternative measures compliance with a

parameter that corresponds to emissions *above* the emissions limit. And stack tests conducted as infrequently as once every three years cannot ensure compliance with a 30-day standard.

### STANDING

Petitioners have a central interest in environmental and public health, including the dangers posed by the air toxics regulated by the Rule. *See e.g.*, Addendum (Wall ¶¶ 4, Harwood ¶ 5; Tidwell ¶ 5; Schaeffer ¶¶ 3-4). Petitioners' members live, work, and recreate in communities where existing multi-unit coal- and oil-fired power plants are located. *Id.* (Wall ¶¶ 7-11, Eno ¶¶ 3, 15); Pannone ¶ 10; Daniels ¶ 1). Those members are directly exposed to the air toxics emitted by such plants, including arsenic, cadmium, lead, mercury and acid gases, and to the accompanying risk of adverse health effects of such exposures, including, *inter alia*, severe respiratory and carcinogenic effects.

The Averaging Alternative permits existing plants to emit acid gases and other air toxics beyond the amounts permitted by the statute, and beyond what would be emitted if unit-by-unit compliance were required. *Id.* (Sahu Decl. ¶¶ 18-21, describing increased pollution affecting petitioners' members; Wall ¶ 18; Eno ¶¶ 12-14). Those harms would be remedied by this Court's vacatur of the Averaging Alternative. *Id.* (Wall ¶ 19; Tidwell ¶ 8).

The Rule's unlawful monitoring provisions also permit more particulate matter and metallic air toxics pollution from coal- and oil-fired power plants than is lawful. *Id.* (Tidwell ¶ 8; Daniels ¶¶ 5-6). Chesapeake Climate Action Network's members are exposed to and harmed by that excess pollution. *Id.* (Daniels ¶¶ 1-3). The requested relief would allow EPA to strengthen the Rule and redress that harm.

## ARGUMENT

### I. EPA's Averaging Alternative is Unlawful.

#### A. The Averaging Alternative Violates §112(d)(3).

##### 1. The Averaging Alternative Relaxes the Stringency of Limits That EPA Set At the Statutory Floor.

EPA's floor analysis sought the maximum numerical emission rates of the best performing units. Floor Memo 4-5, JA \_\_\_\_\_. The Agency concluded that those numerical rates, *measured over a 30-day averaging period*, were "the average emission limitation achieved by the best performing 12 percent of the existing sources," 42 U.S.C. §7412(d)(3)(A), and therefore the "floor," or "minimum stringency" permitted by the Act, *Nat'l Lime v. EPA*, 233 F.3d 625, 629 (D.C. Cir. 2000). 77 Fed. Reg. at 9479-80 (establishing 30 boiler operating day averaging time for limits), JA \_\_\_\_\_ - \_\_\_\_\_. *See* RTC Vol. 2 at 31, JA \_\_\_\_\_ ("an averaging period of 30 boiler operating days...is sufficient to account for normal variability, as well

as other brief, inadvertent occurrences.”). The Agency set all of the standards (save one) at that floor.

The statute does not permit EPA to relax its limits below the floor. 42 U.S.C. §7412(d)(3)(A). But the Averaging Alternative does exactly that; it increases the standards’ averaging period from 30 boiler operating days to 60 (for two units), 90 (for three), or more. 77 Fed.Reg. at 9,385, JA\_\_\_\_. The Alternative thereby reduces the standards’ stringency – and violates the statutory floor. *See supra* at 8-11.

The Rule itself confirms that by adding boiler operating days to the standards’ averaging period, EPA relaxes their stringency. 77 Fed.Reg. at 9,385 (to comply with §112’s floor, a longer-term compliance period would require a lower emissions rate), JA\_\_\_\_. *See* Memo re Hg averaging, JA \_\_\_\_\_. The Agency “illustrated” that relaxation by demonstrating that, as the averaging period increases, units’ maximum mercury emission rates decrease. *Id.*, JA \_\_\_\_\_.<sup>4</sup> *See*

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<sup>4</sup> For mercury only, EPA permitted adjacent units not only to combine their emissions, but to use 90 boiler operating days from *each* unit (rather than 30 operating days) to generate that combined average (so that three units would calculate their mercury average over 270 boiler operating days – 90 from each unit). *See* 77 Fed.Reg. at 9,385-86, 40 C.F.R. §63.10009(a)(2), JA\_\_\_\_-\_\_\_\_. EPA provided a “discounted” mercury limit that applies to units using this averaging period of 90 (rather than 30) boiler operating days per unit. That discount does not, however, address reduction in stringency resulting from the addition of boiler

generally 77 Fed.Reg. at 39,946 (extending the averaging period of a limit, without reducing the numerical emissions rate, results in an “inherently less stringent” limit), JA\_\_\_\_; 62 Fed.Reg. 67,788, 67,797 (Dec. 30, 1997) (“At a fixed numerical value, a standard or limit is...less stringent as the averaging period increases...”), JA\_\_\_\_, \_\_\_\_; 61 Fed.Reg. 17,358, 17,431 (April 19, 1996) (“Changing the averaging period would necessitate changing the emission standard” to maintain equivalent stringency), JA\_\_\_\_, \_\_\_\_\_. See also *Mossville Env'tl. Action Now v. E.P.A.*, 370 F.3d 1232, 1241 (D.C. Cir. 2004) (upholding EPA decision to set more stringent standards than those contained in certain permits, because EPA explained that “a longer averaging time...require[s] a lower average limit”). The Averaging Alternative reduces the stringency of EPA’s standards below the emissions limitation identified by EPA as the floor. It is therefore unlawful. 42 U.S.C. §7412(d)(3)(A).

**2. EPA Has Not Demonstrated That the Averaging Alternative Comports With §112’s Floor Requirements.**

EPA bears the burden of “demonstrat[ing] with substantial evidence – not mere assertions” that its standards satisfy §112’s floor requirements. *Cement Kiln Recycling Coalition v. EPA*, 255 F.3d 855, 866 (D.C. Cir. 2001). See *Northeast*

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operating days from multiple units; it compensates only for the extension of a single unit’s averaging time from 30 to 90 days. 77 Fed. Reg. at 9,386, JA\_\_\_\_\_.



*Maryland Waste Disposal Authority v. EPA*, 358 F.3d 936, 954-955 (D.C. Cir. 2004). EPA has not even attempted to show that the Averaging Alternative conforms with §112(d)(3).

EPA claims that inter-unit averaging is permitted because “the total quantity of any particular HAP that may be emitted by that portion of a contiguous major source...will not be greater under the averaging mechanism than it could be if each individual EGU in the subcategory complied separately with the applicable standard.” 77 Fed.Reg. at 9,385, JA\_\_\_\_. But EPA did not set standards limiting the “total quantity” of emissions from a collection of averaged units; it set standards limiting the *rate* of emissions from individual electric generating units. The total quantity of emissions does not define an emissions rate’s stringency; as EPA has repeatedly acknowledged, the stringency of a standard set as an emissions rate “is a function of *both* the numerical value of the standard and the averaging period.” 64 Fed.Reg. 52,828, 52,930-31 (emphasis added), JA\_\_\_\_, \_\_\_\_ - \_\_. That the “total quantity” of emissions from combined units may not increase is thus irrelevant to the stringency of standards that control the rate of emissions.<sup>5</sup>

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<sup>5</sup> In real-world effect, too, the Averaging Alternative will increase the total quantity of emissions from existing plants. Many units are, as a matter of law, bound by emission limits much lower than the Rule’s. By allowing adjacent units to “credit” those lower emissions against their own, the Averaging Alternative permits pollution that would otherwise be illegal. *See supra* at 10-11; *infra* at 21-22.

EPA also contends that it does not need to provide a “discount factor,” reducing the standards’ numerical emissions rate to compensate for the increase in averaging period resulting from the Averaging Alternative, 77 Fed.Reg. at 9,386, JA\_\_\_\_\_ – even though it has routinely included such a discount in prior rules, to maintain compliance with the statutory floor. *Supra* at 9-10 (citing rules providing discount factors). EPA claims a discount factor was “unwarranted” in this Rule due to “other,” unspecified, “emissions averaging criteria,” and “the homogeneity of fuels within the rules [sic] subcategories.” 77 Fed.Reg. at 9,386, JA\_\_\_\_\_. EPA offers nothing to explain how these elements of its Rule would sustain the stringency of its floor standards – and, in fact, they do not.

The “criteria” associated with the Averaging Alternative do not prevent the relaxed stringency that results from an increased averaging period.<sup>6</sup> Those criteria address unrelated statutory constraints on EPA’s authority – such as the prohibition on multi-unit averaging for new units, and the incoherence that would result from combining emissions of different pollutants or governed by different standards. 77 Fed.Reg. at 9,386, JA\_\_\_\_\_.

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<sup>6</sup> The Rule nominally prohibits: averaging between different types of pollutants; averaging between sources that are not part of the same affected source; averaging between sources that “are not subject to the same [air toxics standard]”; and “averaging between existing sources and new sources.” 77 Fed.Reg. at 9,385, JA\_\_\_\_\_.

Contrary to EPA's claim, moreover, existing units in the same subcategories can burn dramatically *non*-homogenous fuels. Under the Rule's definitions, units in the "coal-fired" subcategories can include units that burn up to 89.9 percent biomass, or other non-coal fuel (over 3 years), as well as units burning coal exclusively; the oil-fired subcategory is equally broad. *Id.* at 9,484, 9,486 (40 C.F.R. §63.10042), JA\_\_\_\_, \_\_\_\_\_. And homogeneity in fuels is, at any rate, irrelevant unless it eliminates the variability of units' *emissions* (because it is variability in emissions – the difference between "particularly high" rates and the mean – that makes the averaging period a central component of emission standards' stringency, 77 Fed.Reg. at 9,385, JA\_\_\_\_\_). EPA has concluded that the units within EPA's subcategories have widely varying emissions; according to the Agency the highest emission rates even among the "best performers" are ten times the mean. 76 Fed.Reg. at 25,041, JA\_\_\_\_; Floor Memo at B-2 (comparing mean emissions of best-performing twelve percent with UPL), JA\_\_\_\_. Given that variation, fuel homogeneity is irrelevant to the Averaging Alternative's effect on stringency.

The agency also asserts (without explanation) that its "UPL analyses [were] developed to take" the decreased stringency resulting from an increased averaging period "into account." RTC Vol. 2 at 363, JA \_\_\_\_\_. But the UPL analyses contain nothing that would eliminate (or even mitigate) the Averaging Alternative's

additional relaxation of the standards. EPA explicitly concluded that “an averaging period of *30 boiler operating days* ...is sufficient to account for normal variability," following application of its UPL formula. RTC Vol. 2 at 31, JA \_\_\_\_ (emphasis added). The UPL, by its terms, predicts the maximum numerical emissions rate only over the three stack tests required at a single unit; had EPA applied it to the larger number of stack tests that occur when multiple units comply on a combined, average basis, the agency’s UPL formula would have produced more stringent floors. 76 Fed.Reg. at 25,041-42 (UPL formula “estimate[s] [the] MACT floor level” only “if the best performing sources were able to replicate the compliance tests in our data base” – a three-run test from a single unit), JA \_\_\_\_; *see also* RTC Vol. 1 at p.518 (floor calculation assumed that “it will be the average of a 3-run test that will determine compliance”), JA \_\_\_\_.

**B. The Averaging Alternative Violates §112(d)(2)’s “Beyond-the-Floor” Requirements.**

The Averaging Alternative also violates §112(d)(2), which requires the Agency to craft emissions standards reflecting the “maximum” reductions achievable. 42 U.S.C. §7412(d)(2). EPA has previously acknowledged (in the HON Rule) that where it authorizes averaging among units, “the mandate of section 112(d)(2)” demands that “some portion of [the cost savings realized through averaging] should be shared with the environment by requiring sources

using averaging to achieve more emission reductions,” through a discount factor.

59 Fed.Reg. at 19,430, JA\_\_\_\_; *see also supra* at 9-10.

EPA also concluded, in the HON Rule, that, “controls applied to comply with a state or Federal rule or statute (other than the HON) cannot be used to generate emission averaging credits,” 59 Fed.Reg. at 19,433, JA\_\_\_\_. Absent that restriction, EPA noted that multi-unit averaging allows a “windfall” that is inconsistent with §112(d)(2), and “more total emissions.” *Id.*, JA\_\_\_\_ (noting that “credits for controls applied to comply with another rule increase the source’s ability to generate [pollution], but do not generate new emission reductions”). The MATS Rule contains no such limitation.

Having acknowledged that §112(d)(2)’s mandate for the “maximum” achievable reduction in toxic pollution applies when it permits multi-source averaging, and having established a prior norm of imposing these restrictions to satisfy that mandate, EPA provides no rational explanation for its failure to impose them here. The Agency never applied the various factors set out in §112(d)(2). *See* 77 Fed.Reg. at 9,385-86, JA\_\_\_\_-\_\_\_\_. And (for the reasons set forth above), EPA has provided no clear and “reasoned explanation” for its failure to ““adhere to its precedents”” to ensure that the Averaging Alternative complies with §112(d)(2). *Jicarilla Apache Nation v. U.S. DOI*, 613 F.3d 1112, 1119-20 (D.C. Cir. 2010) (citation omitted). *See Atchison v. Wichita Bd. of Trade*, 412 U.S. 800, 808 (1973).

## II. EPA's Monitoring Alternatives for Non-Mercury Metals Are Unlawful.

### A. The Parametric Monitoring Alternative Fails to Provide Reasonable Assurance of Compliance.

The Parametric Monitoring Alternative allows sources to demonstrate compliance with the non-mercury metal standard through annual stack tests, so long as they do not exceed a raw data “signal” between annual tests. Stack test compliance determinations are based on the *average* of emissions measured during the nine hour test. But because the signal is set to correspond to the *highest* hour of emissions from the most recent annual test, even if emissions during that hour were *above* the limit, 77 Fed.Reg. at 9,481 (40 C.F.R. §63.10023), JA\_\_\_\_, the Parametric Monitoring Alternative does not “provide a reasonable assurance of compliance with” the standard, as it must. *Sierra Club*, 353 F.3d at 990-91; 42 U.S.C. § 7661c(b).

For example, PM concentrations during the first eight hours of a nine-hour annual stack test might average 0.025 lbs/MMbtu, while peaking at 0.06 lbs during the ninth hour. In this example, the unit would meet the applicable limit, because the stack test's *average* emission rate would fall below 0.030 lb/MMbtu, the limit for non-mercury metals. But EPA's final Rule would allow the facility to show “compliance” until the next yearly stack test based on a raw data signal corresponding to PM concentrations two times higher than the limit the source is

required to meet. EPA has not explained how adherence to a signal that corresponds to emissions levels *above* the limit assures compliance with the limit, and therefore has not “reasonably articulated the basis” for parametric monitoring. *Cf. Sierra Club*, 353 F.3d at 991.

Also, the emission limits for non-mercury metals are based on a “floor” that EPA established by evaluating average emissions during stack tests that are conducted over several hours, not by analyzing a single hour of test results. *See, e.g., Floor Memo, supra.* EPA’s monitoring approach is therefore inconsistent with the method it used to develop the standard, and opens the door to emissions higher than the floor. This Court has remanded particulate matter standards before when test methods used to set the standard conflicted with those used to measure compliance. *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 396-97 (D.C. Cir. 1973); *see also Clean Air Implementation Project v. EPA*, 150 F.3d 1200, 1203 (1998).

EPA suggests that gaps in this monitoring can be filled by the compliance assurance monitoring (CAM) requirements at 40 C.F.R. part 64 and Title V requirements at part 70. 77 Fed.Reg. at 9384. But the CAM rules do not apply to the MATS Rule or to any “emission limits or standards proposed by the Administrator after November 15, 1990, pursuant to section 111 or 112 of the Act.” 40 C.F.R. §64.2(b)(1)(i). It is unclear whether the state-administered Title V

rules would apply, as Part 70 kicks in only “[w]here the applicable requirement does not require periodic testing.” 40 C.F.R. §70.6(a)(3)(B). EPA does not conclude in the Rule that Title V would be applicable. In any event, 42 U.S.C. §7414(a) directs EPA, not the states, to “require enhanced monitoring” “in the development of any . . . emission standard under section 7412,” including the MATS Rule. EPA cannot satisfy this requirement by alluding to monitoring requirements that may or may not be applied by the states in individual permitting decisions.

**B. Stack Testing Conducted Quarterly or Every Three Years Fails to Provide Reasonable Assurance of Compliance.**

The final Rule eliminates operating limits that EPA included at proposal to assure compliance with emission limits for non-mercury metals between stack tests. 77 Fed.Reg. at 9,371, 9,384, JA\_\_\_\_,\_\_\_\_. Under the final Rule, sources that show compliance with the non-mercury metals standard through quarterly stack testing (or, in certain cases, testing once every three years) need not take any steps to demonstrate compliance with the 30-day standard in between stack tests. Such infrequent stack testing cannot “provide a reasonable assurance of compliance with emissions standards” given EPA’s determination that stack test results are highly variable.



EPA's standards for power plants are premised on a high degree of variability in levels of toxic pollutants emitted by power plants. For example, the mean of the stack test results for particulate matter that EPA used to define the floor was 0.00216 lbs/mmbtu, but EPA set the limit at more than 1000 percent of that mean value in the final Rule after adjusting upwards to accommodate expected variability in the emissions of the best performers. Floor Memo, *supra*, at B-2 (comparing mean emissions of best-performing twelve percent with UPL). EPA has not explained how stack testing separated by intervals far longer than the 30-day averaging period of the standard, and without any control of operating conditions in between tests, provides "sufficiently . . . timely" or "sufficiently reliable" information, 42 U.S.C. §7661c(b), to reasonably assure compliance.

Nor does the procedure for designating "low emitting" sources assure that those sources will comply during the three years that separate their stack tests. Sources qualify as low emitting when their emissions are 50 percent of the limit or less during three successive years of stack testing. But testing at 50 percent of the limit does not provide reasonable assurance of compliance with the limit when variability is expected to increase emissions by more than 1000 percent above the mean, even among the best performers. Floor Memo at B-2, JA \_\_\_. The source could take advantage of this option even if its own parametric monitoring showed that it had not met the standard in between stack tests.

## CONCLUSION

Petitioners respectfully request that the Court vacate the Averaging Alternative. 77 Fed.Reg. 9,473-75 (40 C.F.R. §63.10009(a)-(i)), JA\_\_\_\_. *See North Carolina v. FERC*, 730 F.2d 790, 795-96 (D.C. Cir. 1984). The Alternative is entirely severable; there is no substantial doubt that an agency would have adopted the remaining portion on its own, *Davis County Solid Waste Mgmt. v. EPA*, 108 F.3d 1454, 1459 (D.C. Cir. 1997), and severance and vacatur “will not impair the function of the [remaining regulation] as a whole.” *K Mart Corp. v. Cartier, Inc.*, 486 U.S. 281, 282 (1988).

Chesapeake Climate Action Network and Environmental Integrity Project further request remand without vacatur of the Rule’s enhanced monitoring provisions, to enable EPA to fix the identified problems with those provisions. Because those petitioners’ purpose is the “enhanced protection of the environmental values” provided by the Clean Air Act, and because some monitoring requirements are essential to continued implementation of the Rule, those petitioners request that the monitoring provisions should remain in place during the remand. *See Environmental Defense Fund v. EPA*, 898 F.2d 183, 190 (D.C. Cir. 1990).

Dated: October 23, 2012

Respectfully submitted,

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**CERTIFICATE REGARDING WORD LIMITATION**

Counsel hereby certifies that, in accordance with Federal Rule of Appellate Procedure 32(a)(7)(C), the foregoing **Proof Opening Brief of Environmental Petitioners** contains 5,961 words, as counted by counsel's word processing system.

DATED: October 23, 2012

/s/ James S. Pew  
James S. Pew

**CERTIFICATE OF SERVICE**

I hereby certify that on this 23<sup>rd</sup> day of October, 2012 I have served the foregoing **Proof Opening Brief of Environmental Petitioners** on all registered counsel through the Court's electronic filing system (ECF).

/s/James S. Pew  
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**ORAL ARGUMENT NOT YET SCHEDULED**  
**IN THE UNITED STATES COURT OF APPEALS**  
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

No. 12-1100 (and consolidated cases)

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WHITE STALLION ENERGY CENTER, LLC,  
Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,  
Respondent.

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Petition for Review of Final Administrative Action of the  
United States Environmental Protection Agency

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**ENVIRONMENTAL PETITIONERS' STATUTORY  
AND REGULATORY ADDENDUM**

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**Dated: October 23, 2012**

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Title 42. The Public Health and Welfare

Chapter 85. Air Pollution Prevention and Control (Refs & Annos)

Subchapter I. Programs and Activities

Part A. Air Quality and Emissions Limitations (Refs & Annos)

42 U.S.C.A. § 7412

§ 7412. Hazardous air pollutants

Effective: August 5, 1999

Currentness

**(a) Definitions**

For purposes of this section, except subsection (r) of this section--

**(1) Major source**

The term “major source” means 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 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.

**(2) Area source**

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.

**(3) Stationary source**

The term “stationary source” shall have the same meaning as such term has under [section 7411\(a\)](#) of this title.

**(4) New source**

The term “new source” means a stationary source the construction or reconstruction of which is commenced after the Administrator first proposes regulations under this section establishing an emission standard applicable to such source.

**(5) Modification**

The term “modification” means any physical change in, or change in the method of operation of, a major source which increases the actual emissions of any hazardous air pollutant emitted by such source by more than a de minimis amount or which results in the emission of any hazardous air pollutant not previously emitted by more than a de minimis amount.

**(6) Hazardous air pollutant**

The term “hazardous air pollutant” means any air pollutant listed pursuant to subsection (b) of this section.



**(7) Adverse environmental effect**

The term “adverse environmental effect” means 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.

**(8) Electric utility steam generating unit**

The term “electric utility steam generating unit” means any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electrical output to any utility power distribution system for sale shall be considered an electric utility steam generating unit.

**(9) Owner or operator**

The term “owner or operator” means any person who owns, leases, operates, controls, or supervises a stationary source.

**(10) Existing source**

The term “existing source” means any stationary source other than a new source.

**(11) Carcinogenic effect**

Unless revised, the term “carcinogenic effect” shall have the meaning provided by the Administrator under Guidelines for Carcinogenic Risk Assessment as of the date of enactment. Any revisions in the existing Guidelines shall be subject to notice and opportunity for comment.

**(b) List of pollutants**

**(1) Initial list**

The Congress establishes for purposes of this section a list of hazardous air pollutants as follows:

<b>CAS number</b>	<b>Chemical name</b>
75070	Acetaldehyde
60355	Acetamide
75058	Acetonitrile
98862	Acetophenone
53963	2-Acetylaminofluorene
107028	Acrolein
79061	Acrylamide
79107	Acrylic acid
107131	Acrylonitrile

107051 Allyl chloride  
92671 4-Aminobiphenyl  
62533 Aniline  
90040 o-Anisidine  
1332214 Asbestos  
71432 Benzene (including benzene from gasoline)  
92875 Benzidine  
98077 Benzotrichloride  
100447 Benzyl chloride  
92524 Biphenyl  
117817 Bis(2-ethylhexyl)phthalate (DEHP)  
542881 Bis(chloromethyl)ether  
75252 Bromoform  
106990 1,3-Butadiene  
156627 Calcium cyanamide  
105602 Caprolactam  
133062 Captan  
63252 Carbaryl  
75150 Carbon disulfide  
56235 Carbon tetrachloride  
463581 Carbonyl sulfide  
120809 Catechol  
133904 Chloramben  
57749 Chlordane  
7782505 Chlorine  
79118 Chloroacetic acid  
532274 2-Chloroacetophenone  
108907 Chlorobenzene  
510156 Chlorobenzilate

67663 Chloroform

107302 Chloromethyl methyl ether

126998 Chloroprene

1319773 Cresols/Cresylic acid (isomers and mixture)

95487 o-Cresol

108394 m-Cresol

106445 p-Cresol

98828 Cumene

94757 2,4-D, salts and esters

3547044 DDE

334883 Diazomethane

132649 Dibenzofurans

96128 1,2-Dibromo-3-chloropropane

84742 Dibutylphthalate

106467 1,4-Dichlorobenzene(p)

91941 3,3-Dichlorobenzidene

111444 Dichloroethyl ether (Bis(2-chloroethyl)ether)

542756 1,3-Dichloropropene

62737 Dichlorvos

111422 Diethanolamine

121697 N,N-Diethyl aniline (N,N-Dimethylaniline)

64675 Diethyl sulfate

119904 3,3-Dimethoxybenzidine

60117 Dimethyl aminoazobenzene

119937 3,3#-Dimethyl benzidine

79447 Dimethyl carbamoyl chloride

68122 Dimethyl formamide

57147 1,1-Dimethyl hydrazine

131113 Dimethyl phthalate

77781 Dimethyl sulfate

534521 4,6-Dinitro-o-cresol, and salts

51285 2,4-Dinitrophenol

121142 2,4-Dinitrotoluene

123911 1,4-Dioxane (1,4-Diethyleneoxide)

122667 1,2-Diphenylhydrazine

106898 Epichlorohydrin (1-Chloro-2,3-epoxypropane)

106887 1,2-Epoxybutane

140885 Ethyl acrylate

100414 Ethyl benzene

51796 Ethyl carbamate (Urethane)

75003 Ethyl chloride (Chloroethane)

106934 Ethylene dibromide (Dibromoethane)

107062 Ethylene dichloride (1,2-Dichloroethane)

107211 Ethylene glycol

151564 Ethylene imine (Aziridine)

75218 Ethylene oxide

96457 Ethylene thiourea

75343 Ethylidene dichloride (1,1-Dichloroethane)

50000 Formaldehyde

76448 Heptachlor

118741 Hexachlorobenzene

87683 Hexachlorobutadiene

77474 Hexachlorocyclopentadiene

67721 Hexachloroethane

822060 Hexamethylene-1,6-diisocyanate

680319 Hexamethylphosphoramide

110543 Hexane

302012 Hydrazine

7647010 Hydrochloric acid

7664393 Hydrogen fluoride (Hydrofluoric acid)

123319 Hydroquinone

78591 Isophorone

58899 Lindane (all isomers)

108316 Maleic anhydride

67561 Methanol

72435 Methoxychlor

74839 Methyl bromide (Bromomethane)

74873 Methyl chloride (Chloromethane)

71556 Methyl chloroform (1,1,1-Trichloroethane)

78933 Methyl ethyl ketone (2-Butanone)

60344 Methyl hydrazine

74884 Methyl iodide (Iodomethane)

108101 Methyl isobutyl ketone (Hexone)

624839 Methyl isocyanate

80626 Methyl methacrylate

1634044 Methyl tert butyl ether

101144 4,4-Methylene bis(2-chloroaniline)

75092 Methylene chloride (Dichloromethane)

101688 Methylene diphenyl diisocyanate (MDI)

101779 4,4'-Methylenedianiline

91203 Naphthalene

98953 Nitrobenzene

92933 4-Nitrobiphenyl

100027 4-Nitrophenol

79469 2-Nitropropane

684935 N-Nitroso-N-methylurea

62759 N-Nitrosodimethylamine

59892 N-Nitrosomorpholine  
56382 Parathion  
82688 Pentachloronitrobenzene (Quintobenzene)  
87865 Pentachlorophenol  
108952 Phenol  
106503 p-Phenylenediamine  
75445 Phosgene  
7803512 Phosphine  
7723140 Phosphorus  
85449 Phthalic anhydride  
1336363 Polychlorinated biphenyls (Aroclors)  
1120714 1,3-Propane sultone  
57578 beta-Propiolactone  
123386 Propionaldehyde  
114261 Propoxur (Baygon)  
78875 Propylene dichloride (1,2-Dichloropropane)  
75569 Propylene oxide  
75558 1,2-Propylenimine (2-Methyl aziridine)  
91225 Quinoline  
106514 Quinone  
100425 Styrene  
96093 Styrene oxide  
1746016 2,3,7,8-Tetrachlorodibenzo-p-dioxin  
79345 1,1,2,2-Tetrachloroethane  
127184 Tetrachloroethylene (Perchloroethylene)  
7550450 Titanium tetrachloride  
108883 Toluene  
95807 2,4-Toluene diamine  
584849 2,4-Toluene diisocyanate

- 95534 o-Toluidine
- 8001352 Toxaphene (chlorinated camphene)
- 120821 1,2,4-Trichlorobenzene
- 79005 1,1,2-Trichloroethane
- 79016 Trichloroethylene
- 95954 2,4,5-Trichlorophenol
- 88062 2,4,6-Trichlorophenol
- 121448 Triethylamine
- 1582098 Trifluralin
- 540841 2,2,4-Trimethylpentane
- 108054 Vinyl acetate
- 593602 Vinyl bromide
- 75014 Vinyl chloride
- 75354 Vinylidene chloride (1,1-Dichloroethylene)
- 1330207 Xylenes (isomers and mixture)
  - 95476 o-Xylenes
  - 108383 m-Xylenes
  - 106423 p-Xylenes
- 0 Antimony Compounds
- 0 Arsenic Compounds (inorganic including arsine)
- 0 Beryllium Compounds
- 0 Cadmium Compounds
- 0 Chromium Compounds
- 0 Cobalt Compounds
- 0 Coke Oven Emissions
- 0 Cyanide Compounds<sup>1</sup>
- 0 Glycol ethers<sup>2</sup>
- 0 Lead Compounds

- 0 Manganese Compounds
- 0 Mercury Compounds
- 0 Fine mineral fibers<sup>3</sup>
- 0 Nickel Compounds
- 0 Polycyclic Organic Matter<sup>4</sup>
- 0 Radionuclides (including radon)<sup>5</sup>
- 0 Selenium Compounds

NOTE: For all listings above which contain the word “compounds” and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.

<sup>1</sup> X#CN where X = H# or any other group where a formal dissociation may occur. For example KCN or Ca(CN)<sub>2</sub>

<sup>2</sup> Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>-OR# where n = 1, 2, or 3

R = alkyl or aryl groups

R# = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH<sub>2</sub>CH)<sub>n</sub>-OH. Polymers are excluded from the glycol category.

<sup>3</sup> Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

<sup>4</sup> Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100°C.

<sup>5</sup> A type of atom which spontaneously undergoes radioactive decay.

## (2) Revision of the list

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.



**(3) Petitions to modify the list**

(A) Beginning at any time after 6 months after November 15, 1990, any person may petition the Administrator to modify the list of hazardous air pollutants under this subsection by adding or deleting a substance or, in case of listed pollutants without CAS numbers (other than coke oven emissions, mineral fibers, or polycyclic organic matter) removing certain unique substances. Within 18 months after receipt of a petition, the Administrator shall either grant or deny the petition by publishing a written explanation of the reasons for the Administrator's decision. Any such petition shall include a showing by the petitioner that there is adequate data on the health or environmental defects<sup>1</sup> of the pollutant or other evidence adequate to support the petition. The Administrator may not deny a petition solely on the basis of inadequate resources or time for review.

(B) The Administrator shall add a substance to the list upon a showing by the petitioner or on the Administrator's own 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.

(C) The Administrator shall delete a substance from the list upon a showing by the petitioner or on the Administrator's own determination that there is adequate data on the health and environmental effects of the substance to determine that emissions, ambient concentrations, bioaccumulation or deposition of the substance may not reasonably be anticipated to cause any adverse effects to the human health or adverse environmental effects.

(D) The Administrator shall delete one or more unique chemical substances that contain a listed hazardous air pollutant not having a CAS number (other than coke oven emissions, mineral fibers, or polycyclic organic matter) upon a showing by the petitioner or on the Administrator's own determination that such unique chemical substances that contain the named chemical of such listed hazardous air pollutant meet the deletion requirements of subparagraph (C). The Administrator must grant or deny a deletion petition prior to promulgating any emission standards pursuant to subsection (d) of this section applicable to any source category or subcategory of a listed hazardous air pollutant without a CAS number listed under subsection (b) of this section for which a deletion petition has been filed within 12 months of November 15, 1990.

**(4) Further information**

If the Administrator determines that information on the health or environmental effects of a substance is not sufficient to make a determination required by this subsection, the Administrator may use any authority available to the Administrator to acquire such information.

**(5) Test methods**

The Administrator may establish, by rule, test measures and other analytic procedures for monitoring and measuring emissions, ambient concentrations, deposition, and bioaccumulation of hazardous air pollutants.

**(6) Prevention of significant deterioration**

The provisions of part C of this subchapter (prevention of significant deterioration) shall not apply to pollutants listed under this section.

**(7) Lead**

The Administrator may not list elemental lead as a hazardous air pollutant under this subsection.

**(c) List of source categories**

**(1) In general**

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.

**(2) Requirement for emissions standards**

For the categories and subcategories the Administrator lists, the Administrator shall establish emissions standards under subsection (d) of this section, according to the schedule in this subsection and subsection (e) of this section.

**(3) Area sources**

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 regulations shall be promulgated not later than 10 years after November 15, 1990.

**(4) Previously regulated categories**

The Administrator may, in the Administrator's discretion, list any category or subcategory of sources previously regulated under this section as in effect before November 15, 1990.

**(5) Additional categories**

In addition to those categories and subcategories of sources listed for regulation 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.

**(6) Specific pollutants**

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.

**(7) Research facilities**

The Administrator shall establish a separate category covering research or laboratory facilities, as necessary to assure the equitable treatment of such facilities. For purposes of this section, "research or laboratory facility" means any stationary source whose primary purpose is to conduct research and development into new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

**(8) Boat manufacturing**

When establishing emissions standards for styrene, the Administrator shall list boat manufacturing as a separate subcategory unless the Administrator finds that such listing would be inconsistent with the goals and requirements of this chapter.

**(9) Deletions from the list**

(A) Where the sole reason for the inclusion of a source category on the list required under this subsection is the emission of a unique chemical substance, the Administrator shall delete the source category from the list if it is appropriate because of action taken under either subparagraphs (C) or (D) of subsection (b)(3) of this section.

(B) The Administrator may delete any source category from the list under this subsection, on petition of any person or on the Administrator's own motion, whenever the Administrator makes the following determination or determinations, as applicable:

(i) In the case of hazardous air pollutants emitted by sources in the category that may result in cancer in humans, a determination that no source in the category (or group of sources in the case of area sources) emits such hazardous air pollutants in quantities which may cause a lifetime risk of cancer greater than one in one million to the individual in the population who is most exposed to emissions of such pollutants from the source (or group of sources in the case of area sources).

(ii) In the case of hazardous air pollutants that may result in adverse health effects in humans other than cancer or adverse environmental effects, a determination that emissions from no source in the category or subcategory concerned (or group of sources in the case of area sources) exceed a level which is adequate to protect public health with an ample margin of safety and no adverse environmental effect will result from emissions from any source (or from a group of sources in the case of area sources).

The Administrator shall grant or deny a petition under this paragraph within 1 year after the petition is filed.

**(d) Emission standards**

**(1) In general**

The Administrator shall promulgate regulations establishing emission standards for each category or subcategory of major sources and area sources of hazardous air pollutants listed for regulation pursuant to subsection (c) of this section in accordance with the schedules provided in subsections (c) and (e) of this section. The Administrator may distinguish among classes, types, and sizes of sources within a category or subcategory in establishing such standards except that, there shall be no delay in the compliance date for any standard applicable to any source under subsection (i) of this section as the result of the authority provided by this sentence.

**(2) Standards and methods**

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\(c\)](#) 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.

**(3) New and existing sources**

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. Emission 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 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.

**(4) Health threshold**

With respect to pollutants for which a health threshold has been established, the Administrator may consider such threshold level, with an ample margin of safety, when establishing emission standards under this subsection.

**(5) Alternative standard for area sources**

With respect only to categories and subcategories of area sources listed pursuant to subsection (c) of this section, the Administrator may, in lieu of the authorities provided in paragraph (2) and subsection (f) of this section, elect to promulgate standards or requirements applicable to sources in such categories or subcategories which provide for the use of generally available control technologies or management practices by such sources to reduce emissions of hazardous air pollutants.

**(6) Review and revision**

The Administrator shall review, and revise as necessary (taking into account developments in practices, processes, and control technologies), emission standards promulgated under this section no less often than every 8 years.

**(7) Other requirements preserved**

No emission standard or other requirement promulgated under this section shall be interpreted, construed or applied to diminish or replace the requirements of a more stringent emission limitation or other applicable requirement established pursuant to [section 7411](#) of this title, part C or D of this subchapter, or other authority of this chapter or a standard issued under State authority.

**(8) Coke ovens**

**(A)** Not later than December 31, 1992, the Administrator shall promulgate regulations establishing emission standards under paragraphs (2) and (3) of this subsection for coke oven batteries. In establishing such standards, the Administrator shall evaluate--

(i) the use of sodium silicate (or equivalent) luting compounds to prevent door leaks, and other operating practices and technologies for their effectiveness in reducing coke oven emissions, and their suitability for use on new and existing coke oven batteries, taking into account costs and reasonable commercial door warranties; and

(ii) as a basis for emission standards under this subsection for new coke oven batteries that begin construction after the date of proposal of such standards, the Jewell design Thompson non-recovery coke oven batteries and other non-recovery coke oven technologies, and other appropriate emission control and coke production technologies, as to their effectiveness in reducing coke oven emissions and their capability for production of steel quality coke.

Such regulations shall require at a minimum that coke oven batteries will not exceed 8 per centum leaking doors, 1 per centum leaking lids, 5 per centum leaking oftakes, and 16 seconds visible emissions per charge, with no exclusion for emissions during the period after the closing of self-sealing oven doors. Notwithstanding subsection (i) of this section, the compliance date for such emission standards for existing coke oven batteries shall be December 31, 1995.

**(B)** The Administrator shall promulgate work practice regulations under this subsection for coke oven batteries requiring, as appropriate--

(i) the use of sodium silicate (or equivalent) luting compounds, if the Administrator determines that use of sodium silicate is an effective means of emissions control and is achievable, taking into account costs and reasonable commercial warranties for doors and related equipment; and

(ii) door and jam cleaning practices.

Notwithstanding subsection (i) of this section, the compliance date for such work practice regulations for coke oven batteries shall be not later than the date 3 years after November 15, 1990.

(C) For coke oven batteries electing to qualify for an extension of the compliance date for standards promulgated under subsection (f) of this section in accordance with subsection (i)(8) of this section, the emission standards under this subsection for coke oven batteries shall require that coke oven batteries not exceed 8 per centum leaking doors, 1 per centum leaking lids, 5 per centum leaking offtakes, and 16 seconds visible emissions per charge, with no exclusion for emissions during the period after the closing of self-sealing doors. Notwithstanding subsection (i) of this section, the compliance date for such emission standards for existing coke oven batteries seeking an extension shall be not later than the date 3 years after November 15, 1990.

**(9) Sources licensed by the Nuclear Regulatory Commission**

No standard for radionuclide emissions from any category or subcategory of facilities licensed by the Nuclear Regulatory Commission (or an Agreement State) is required to be promulgated under this section if the Administrator determines, by rule, and after consultation with the Nuclear Regulatory Commission, that the regulatory program established by the Nuclear Regulatory Commission pursuant to the Atomic Energy Act [42 U.S.C.A. § 2011 et seq.] for such category or subcategory provides an ample margin of safety to protect the public health. Nothing in this subsection shall preclude or deny the right of any State or political subdivision thereof to adopt or enforce any standard or limitation respecting emissions of radionuclides which is more stringent than the standard or limitation in effect under [section 7411](#) of this title or this section.

**(10) Effective date**

Emission standards or other regulations promulgated under this subsection shall be effective upon promulgation.

**(e) Schedule for standards and review**

**(1) In general**

The Administrator shall promulgate regulations establishing emission standards for categories and subcategories of sources initially listed for regulation pursuant to subsection (c)(1) of this section as expeditiously as practicable, assuring that--

(A) emission standards for not less than 40 categories and subcategories (not counting coke oven batteries) shall be promulgated not later than 2 years after November 15, 1990;

(B) emission standards for coke oven batteries shall be promulgated not later than December 31, 1992;

(C) emission standards for 25 per centum of the listed categories and subcategories shall be promulgated not later than 4 years after November 15, 1990;

(D) emission standards for an additional 25 per centum of the listed categories and subcategories shall be promulgated not later than 7 years after November 15, 1990; and

(E) emission standards for all categories and subcategories shall be promulgated not later than 10 years after November 15, 1990.

**(2) Priorities**

In determining priorities for promulgating standards under subsection (d) of this section, the Administrator shall consider--

(A) the known or anticipated adverse effects of such pollutants on public health and the environment;

(B) the quantity and location of emissions or reasonably anticipated emissions of hazardous air pollutants that each category or subcategory will emit; and

(C) the efficiency of grouping categories or subcategories according to the pollutants emitted, or the processes or technologies used.

**(3) Published schedule**

Not later than 24 months after November 15, 1990, and after opportunity for comment, the Administrator shall publish a schedule establishing a date for the promulgation of emission standards for each category and subcategory of sources listed pursuant to subsection (c)(1) and (3) of this section which shall be consistent with the requirements of paragraphs (1) and (2). The determination of priorities for the promulgation of standards pursuant to this paragraph is not a rulemaking and shall not be subject to judicial review, except that, failure to promulgate any standard pursuant to the schedule established by this paragraph shall be subject to review under [section 7604](#) of this title.

**(4) Judicial review**

Notwithstanding [section 7607](#) of this title, no action of the Administrator adding a pollutant to the list under subsection (b) of this section or listing a source category or subcategory under subsection (c) of this section shall be a final agency action subject to judicial review, except that any such action may be reviewed under such [section 7607](#) of this title when the Administrator issues emission standards for such pollutant or category.

**(5) Publicly owned treatment works**

The Administrator shall promulgate standards pursuant to subsection (d) of this section applicable to publicly owned treatment works (as defined in title II of the Federal Water Pollution Control Act [[33 U.S.C.A. § 1281 et seq.](#)] ) not later than 5 years after November 15, 1990.

**(f) Standard to protect health and environment**

**(1) Report**

Not later than 6 years after November 15, 1990, the Administrator shall investigate and report, after consultation with the Surgeon General and after opportunity for public comment, to Congress on--

(A) methods of calculating the risk to public health remaining, or likely to remain, from sources subject to regulation under this section after the application of standards under subsection (d) of this section;

(B) the public health significance of such estimated remaining risk and the technologically and commercially available methods and costs of reducing such risks;

(C) the actual health effects with respect to persons living in the vicinity of sources, any available epidemiological or other health studies, risks presented by background concentrations of hazardous air pollutants, any uncertainties in risk assessment methodology or other health assessment technique, and any negative health or environmental consequences to the community of efforts to reduce such risks; and

(D) recommendations as to legislation regarding such remaining risk.

## (2) Emission standards

(A) 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 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.

(B) Nothing in subparagraph (A) or in any other provision of this section shall be construed as affecting, or applying to the Administrator's interpretation of this section, as in effect before November 15, 1990, and set forth in the Federal Register of September 14, 1989 ([54 Federal Register 38044](#)).

(C) The Administrator shall determine whether or not to promulgate such standards and, if the Administrator decides to promulgate such standards, shall promulgate the standards 8 years after promulgation of the standards under subsection (d) of this section for each source category or subcategory concerned. In the case of categories or subcategories for which standards under subsection (d) of this section are required to be promulgated within 2 years after November 15, 1990, the Administrator shall have 9 years after promulgation of the standards under subsection (d) of this section to make the determination under the preceding sentence and, if required, to promulgate the standards under this paragraph.

## (3) Effective date

Any emission standard established pursuant to this subsection shall become effective upon promulgation.

## (4) Prohibition



No air pollutant to which a standard under this subsection applies may be emitted from any stationary source in violation of such standard, except that in the case of an existing source--

(A) such standard shall not apply until 90 days after its effective date, and

(B) the Administrator may grant a waiver permitting such source a period of up to 2 years after the effective date of a standard to comply with the standard if the Administrator finds that such period is necessary for the installation of controls and that steps will be taken during the period of the waiver to assure that the health of persons will be protected from imminent endangerment.

**(5) Area sources**

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 subsection (d)(5) of this section.

**(6) Unique chemical substances**

In establishing standards for the control of unique chemical substances of listed pollutants without CAS numbers under this subsection, the Administrator shall establish such standards with respect to the health and environmental effects of the substances actually emitted by sources and direct transformation byproducts of such emissions in the categories and subcategories.

**(g) Modifications**

**(1) Offsets**

(A) A physical change in, or change in the method of operation of, a major source which results in a greater than de minimis increase in actual emissions of a hazardous air pollutant shall not be considered a modification, if such increase in the quantity of actual emissions of any hazardous air pollutant from such source will be offset by an equal or greater decrease in the quantity of emissions of another hazardous air pollutant (or pollutants) from such source which is deemed more hazardous, pursuant to guidance issued by the Administrator under subparagraph (B). The owner or operator of such source shall submit a showing to the Administrator (or the State) that such increase has been offset under the preceding sentence.

(B) The Administrator shall, after notice and opportunity for comment and not later than 18 months after November 15, 1990, publish guidance with respect to implementation of this subsection. Such guidance shall include an identification, to the extent practicable, of the relative hazard to human health resulting from emissions to the ambient air of each of the pollutants listed under subsection (b) of this section sufficient to facilitate the offset showing authorized by subparagraph (A). Such guidance shall not authorize offsets between pollutants where the increased pollutant (or more than one pollutant in a stream of pollutants) causes adverse effects to human health for which no safety threshold for exposure can be determined unless there are corresponding decreases in such types of pollutant(s).

**(2) Construction, reconstruction and modifications**

(A) After the effective date of a permit program under subchapter V of this chapter in any State, no person may modify a major source of hazardous air pollutants in such State, unless the Administrator (or the State) determines that the maximum

achievable control technology emission limitation under this section for existing sources will be met. Such determination shall be made on a case-by-case basis where no applicable emissions limitations have been established by the Administrator.

(B) After the effective date of a permit program under subchapter V of this chapter in any State, no person may construct or reconstruct any major source of hazardous air pollutants, unless the Administrator (or the State) determines that the maximum achievable control technology emission limitation under this section for new sources will be met. Such determination shall be made on a case-by-case basis where no applicable emission limitations have been established by the Administrator.

**(3) Procedures for modifications**

The Administrator (or the State) shall establish reasonable procedures for assuring that the requirements applying to modifications under this section are reflected in the permit.

**(h) Work practice standards and other requirements**

**(1) In general**

For purposes of this section, if it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard for control of a hazardous air pollutant or pollutants, the Administrator may, in lieu thereof, promulgate a design, equipment, work practice, or operational standard, or combination thereof, which in the Administrator's judgment is consistent with the provisions of subsection (d) or (f) of this section. In the event the Administrator promulgates a design or equipment standard under this subsection, the Administrator shall include as part of such standard such requirements as will assure the proper operation and maintenance of any such element of design or equipment.

**(2) Definition**

For the purpose of this subsection, the phrase "not feasible to prescribe or enforce an emission standard" means any situation in which the Administrator determines that--

(A) a hazardous air pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State or local law, or

(B) the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.

**(3) Alternative standard**

If after notice and opportunity for comment, the owner or operator of any source establishes to the satisfaction of the Administrator that an alternative means of emission limitation will achieve a reduction in emissions of any air pollutant at least equivalent to the reduction in emissions of such pollutant achieved under the requirements of paragraph (1), the Administrator shall permit the use of such alternative by the source for purposes of compliance with this section with respect to such pollutant.

**(4) Numerical standard required**

Any standard promulgated under paragraph (1) shall be promulgated in terms of an emission standard whenever it is feasible to promulgate and enforce a standard in such terms.

**(i) Schedule for compliance**

**(1) Preconstruction and operating requirements**

After the effective date of any emission standard, limitation, or regulation under subsection (d), (f) or (h) of this section, no person may construct any new major source or reconstruct any existing major source subject to such emission standard, regulation or limitation unless the Administrator (or a State with a permit program approved under subchapter V of this chapter) determines that such source, if properly constructed, reconstructed and operated, will comply with the standard, regulation or limitation.

**(2) Special rule**

Notwithstanding the requirements of paragraph (1), a new source which commences construction or reconstruction after a standard, limitation or regulation applicable to such source is proposed and before such standard, limitation or regulation is promulgated shall not be required to comply with such promulgated standard until the date 3 years after the date of promulgation if--

(A) the promulgated standard, limitation or regulation is more stringent than the standard, limitation or regulation proposed; and

(B) the source complies with the standard, limitation, or regulation as proposed during the 3-year period immediately after promulgation.

**(3) Compliance schedule for existing sources**

(A) After the effective date of any emissions standard, limitation or regulation promulgated under this section and applicable to a source, no person may operate such source in violation of such standard, limitation or regulation except, in the case of an existing source, the Administrator shall establish a compliance date or dates for each category or subcategory of existing sources, which shall provide for compliance as expeditiously as practicable, but in no event later than 3 years after the effective date of such standard, except as provided in subparagraph (B) and paragraphs (4) through (8).

(B) The Administrator (or a State with a program approved under subchapter V of this chapter) may issue a permit that grants an extension permitting an existing source up to 1 additional year to comply with standards under subsection (d) of this section if such additional period is necessary for the installation of controls. An additional extension of up to 3 years may be added for mining waste operations, if the 4-year compliance time is insufficient to dry and cover mining waste in order to reduce emissions of any pollutant listed under subsection (b) of this section.

**(4) Presidential exemption**

The President may exempt any stationary source from compliance with any standard or limitation under this section for a period of not more than 2 years if the President determines that the technology to implement such standard is not available and that it is in the national security interests of the United States to do so. An exemption under this paragraph may be extended for 1 or more additional periods, each period not to exceed 2 years. The President shall report to Congress with respect to each exemption (or extension thereof) made under this paragraph.

**(5) Early reduction**

(A) The Administrator (or a State acting pursuant to a permit program approved under subchapter V of this chapter) shall issue a permit allowing an existing source, for which the owner or operator demonstrates that the source has achieved a reduction of 90 per centum or more in emissions of hazardous air pollutants (95 per centum in the case of hazardous air pollutants which are particulates) from the source, to meet an alternative emission limitation reflecting such reduction in lieu of an emission limitation promulgated under subsection (d) of this section for a period of 6 years from the compliance date for the otherwise applicable standard, provided that such reduction is achieved before the otherwise applicable standard under subsection (d) of this section is first proposed. Nothing in this paragraph shall preclude a State from requiring reductions in excess of those specified in this subparagraph as a condition of granting the extension authorized by the previous sentence.

(B) An existing source which achieves the reduction referred to in subparagraph (A) after the proposal of an applicable standard but before January 1, 1994, may qualify under subparagraph (A), if the source makes an enforceable commitment to achieve such reduction before the proposal of the standard. Such commitment shall be enforceable to the same extent as a regulation under this section.

(C) The reduction shall be determined with respect to verifiable and actual emissions in a base year not earlier than calendar year 1987, provided that, there is no evidence that emissions in the base year are artificially or substantially greater than emissions in other years prior to implementation of emissions reduction measures. The Administrator may allow a source to use a baseline year of 1985 or 1986 provided that the source can demonstrate to the satisfaction of the Administrator that emissions data for the source reflects verifiable data based on information for such source, received by the Administrator prior to November 15, 1990, pursuant to an information request issued under [section 7414](#) of this title.

(D) For each source granted an alternative emission limitation under this paragraph there shall be established by a permit issued pursuant to subchapter V of this chapter an enforceable emission limitation for hazardous air pollutants reflecting the reduction which qualifies the source for an alternative emission limitation under this paragraph. An alternative emission limitation under this paragraph shall not be available with respect to standards or requirements promulgated pursuant to subsection (f) of this section and the Administrator shall, for the purpose of determining whether a standard under subsection (f) of this section is necessary, review emissions from sources granted an alternative emission limitation under this paragraph at the same time that other sources in the category or subcategory are reviewed.

(E) With respect to pollutants for which high risks of adverse public health effects may be associated with exposure to small quantities including, but not limited to, chlorinated dioxins and furans, the Administrator shall by regulation limit the use of offsetting reductions in emissions of other hazardous air pollutants from the source as counting toward the 90 per centum reduction in such high-risk pollutants qualifying for an alternative emissions limitation under this paragraph.

**(6) Other reductions**

Notwithstanding the requirements of this section, no existing source that has installed--

(A) best available control technology (as defined in [section 7479\(3\)](#) of this title), or

(B) technology required to meet a lowest achievable emission rate (as defined in [section 7501](#) of this title),

prior to the promulgation of a standard under this section applicable to such source and the same pollutant (or stream of pollutants) controlled pursuant to an action described in subparagraph (A) or (B) shall be required to comply with such

standard under this section until the date 5 years after the date on which such installation or reduction has been achieved, as determined by the Administrator. The Administrator may issue such rules and guidance as are necessary to implement this paragraph.

**(7) Extension for new sources**

A source for which construction or reconstruction is commenced after the date an emission standard applicable to such source is proposed pursuant to subsection (d) of this section but before the date an emission standard applicable to such source is proposed pursuant to subsection (f) of this section shall not be required to comply with the emission standard under subsection (f) of this section until the date 10 years after the date construction or reconstruction is commenced.

**(8) Coke ovens**

(A) Any coke oven battery that complies with the emission limitations established under subsection (d)(8)(C) of this section, subparagraph (B), and subparagraph (C), and complies with the provisions of subparagraph (E), shall not be required to achieve emission limitations promulgated under subsection (f) of this section until January 1, 2020.

(B)(i) Not later than December 31, 1992, the Administrator shall promulgate emission limitations for coke oven emissions from coke oven batteries. Notwithstanding paragraph (3) of this subsection, the compliance date for such emission limitations for existing coke oven batteries shall be January 1, 1998. Such emission limitations shall reflect the lowest achievable emission rate as defined in [section 7501](#) of this title for a coke oven battery that is rebuilt or a replacement at a coke oven plant for an existing battery. Such emission limitations shall be no less stringent than--

(I) 3 per centum leaking doors (5 per centum leaking doors for six meter batteries);

(II) 1 per centum leaking lids;

(III) 4 per centum leaking offtakes; and

(IV) 16 seconds visible emissions per charge,

with an exclusion for emissions during the period after the closing of self-sealing oven doors (or the total mass emissions equivalent). The rulemaking in which such emission limitations are promulgated shall also establish an appropriate measurement methodology for determining compliance with such emission limitations, and shall establish such emission limitations in terms of an equivalent level of mass emissions reduction from a coke oven battery, unless the Administrator finds that such a mass emissions standard would not be practicable or enforceable. Such measurement methodology, to the extent it measures leaking doors, shall take into consideration alternative test methods that reflect the best technology and practices actually applied in the affected industries, and shall assure that the final test methods are consistent with the performance of such best technology and practices.

(ii) If the Administrator fails to promulgate such emission limitations under this subparagraph prior to the effective date of such emission limitations, the emission limitations applicable to coke oven batteries under this subparagraph shall be--

(I) 3 per centum leaking doors (5 per centum leaking doors for six meter batteries);

(II) 1 per centum leaking lids;

(III) 4 per centum leaking offtakes; and

(IV) 16 seconds visible emissions per charge,

or the total mass emissions equivalent (if the total mass emissions equivalent is determined to be practicable and enforceable), with no exclusion for emissions during the period after the closing of self-sealing oven doors.

(C) Not later than January 1, 2007, the Administrator shall review the emission limitations promulgated under subparagraph (B) and revise, as necessary, such emission limitations to reflect the lowest achievable emission rate as defined in [section 7501](#) of this title at the time for a coke oven battery that is rebuilt or a replacement at a coke oven plant for an existing battery. Such emission limitations shall be no less stringent than the emission limitation promulgated under subparagraph (B). Notwithstanding paragraph (2) of this subsection, the compliance date for such emission limitations for existing coke oven batteries shall be January 1, 2010.

(D) At any time prior to January 1, 1998, the owner or operator of any coke oven battery may elect to comply with emission limitations promulgated under subsection (f) of this section by the date such emission limitations would otherwise apply to such coke oven battery, in lieu of the emission limitations and the compliance dates provided under subparagraphs (B) and (C) of this paragraph. Any such owner or operator shall be legally bound to comply with such emission limitations promulgated under subsection (f) of this section with respect to such coke oven battery as of January 1, 2003. If no such emission limitations have been promulgated for such coke oven battery, the Administrator shall promulgate such emission limitations in accordance with subsection (f) of this section for such coke oven battery.

(E) Coke oven batteries qualifying for an extension under subparagraph (A) shall make available not later than January 1, 2000, to the surrounding communities the results of any risk assessment performed by the Administrator to determine the appropriate level of any emission standard established by the Administrator pursuant to subsection (f) of this section.

(F) Notwithstanding the provisions of this section, reconstruction of any source of coke oven emissions qualifying for an extension under this paragraph shall not subject such source to emission limitations under subsection (f) of this section more stringent than those established under subparagraphs (B) and (C) until January 1, 2020. For the purposes of this subparagraph, the term "reconstruction" includes the replacement of existing coke oven battery capacity with new coke oven batteries of comparable or lower capacity and lower potential emissions.

**(j) Equivalent emission limitation by permit**

**(1) Effective date**

The requirements of this subsection shall apply in each State beginning on the effective date of a permit program established pursuant to subchapter V of this chapter in such State, but not prior to the date 42 months after November 15, 1990.

**(2) Failure to promulgate a standard**

In the event that the Administrator fails to promulgate a standard for a category or subcategory of major sources by the date established pursuant to subsection (e)(1) and (3) of this section, and beginning 18 months after such date (but not prior to the effective date of a permit program under subchapter V of this chapter), the owner or operator of any major source in such category or subcategory shall submit a permit application under paragraph (3) and such owner or operator shall also comply with paragraphs (5) and (6).

**(3) Applications**

By the date established by paragraph (2), the owner or operator of a major source subject to this subsection shall file an application for a permit. If the owner or operator of a source has submitted a timely and complete application for a permit required by this subsection, any failure to have a permit shall not be a violation of paragraph (2), unless the delay in final action is due to the failure of the applicant to timely submit information required or requested to process the application. The Administrator shall not later than 18 months after November 15, 1990, and after notice and opportunity for comment, establish requirements for applications under this subsection including a standard application form and criteria for determining in a timely manner the completeness of applications.

**(4) Review and approval**

Permit applications submitted under this subsection shall be reviewed and approved or disapproved according to the provisions of [section 7661d](#) of this title. In the event that the Administrator (or the State) disapproves a permit application submitted under this subsection or determines that the application is incomplete, the applicant shall have up to 6 months to revise the application to meet the objections of the Administrator (or the State).

**(5) Emission limitation**

The permit shall be issued pursuant to subchapter V of this chapter and shall contain emission limitations for the hazardous air pollutants subject to regulation under this section and emitted by the source that the Administrator (or the State) determines, on a case-by-case basis, to be equivalent to the limitation that would apply to such source if an emission standard had been promulgated in a timely manner under subsection (d) of this section. In the alternative, if the applicable criteria are met, the permit may contain an emissions limitation established according to the provisions of subsection (i)(5) of this section. For purposes of the preceding sentence, the reduction required by subsection (i)(5)(A) of this section shall be achieved by the date on which the relevant standard should have been promulgated under subsection (d) of this section. No such pollutant may be emitted in amounts exceeding an emission limitation contained in a permit immediately for new sources and, as expeditiously as practicable, but not later than the date 3 years after the permit is issued for existing sources or such other compliance date as would apply under subsection (i) of this section.

**(6) Applicability of subsequent standards**

If the Administrator promulgates an emission standard that is applicable to the major source prior to the date on which a permit application is approved, the emission limitation in the permit shall reflect the promulgated standard rather than the emission limitation determined pursuant to paragraph (5), provided that the source shall have the compliance period provided under subsection (i) of this section. If the Administrator promulgates a standard under subsection (d) of this section that would be applicable to the source in lieu of the emission limitation established by permit under this subsection after the date on which the permit has been issued, the Administrator (or the State) shall revise such permit upon the next renewal to reflect the standard promulgated by the Administrator providing such source a reasonable time to comply, but no longer than 8 years after such standard is promulgated or 8 years after the date on which the source is first required to comply with the emissions limitation established by paragraph (5), whichever is earlier.

**(k) Area source program**



**(1) Findings and purpose**

The Congress finds that emissions of hazardous air pollutants from area sources may individually, or in the aggregate, present significant risks to public health in urban areas. Considering the large number of persons exposed and the risks of carcinogenic and other adverse health effects from hazardous air pollutants, ambient concentrations characteristic of large urban areas should be reduced to levels substantially below those currently experienced. It is the purpose of this subsection to achieve a substantial reduction in emissions of hazardous air pollutants from area sources and an equivalent reduction in the public health risks associated with such sources including a reduction of not less than 75 per centum in the incidence of cancer attributable to emissions from such sources.

**(2) Research program**

The Administrator shall, after consultation with State and local air pollution control officials, conduct a program of research with respect to sources of hazardous air pollutants in urban areas and shall include within such program--

(A) ambient monitoring for a broad range of hazardous air pollutants (including, but not limited to, volatile organic compounds, metals, pesticides and products of incomplete combustion) in a representative number of urban locations;

(B) analysis to characterize the sources of such pollution with a focus on area sources and the contribution that such sources make to public health risks from hazardous air pollutants; and

(C) consideration of atmospheric transformation and other factors which can elevate public health risks from such pollutants.

Health effects considered under this program shall include, but not be limited to, carcinogenicity, mutagenicity, teratogenicity, neurotoxicity, reproductive dysfunction and other acute and chronic effects including the role of such pollutants as precursors of ozone or acid aerosol formation. The Administrator shall report the preliminary results of such research not later than 3 years after November 15, 1990.

**(3) National strategy**

(A) Considering information collected pursuant to the monitoring program authorized by paragraph (2), the Administrator shall, not later than 5 years after November 15, 1990, and after notice and opportunity for public comment, prepare and transmit to the Congress a comprehensive strategy to control emissions of hazardous air pollutants from area sources in urban areas.

(B) The strategy shall--

(i) identify not less than 30 hazardous air pollutants which, as the result of emissions from area sources, present the greatest threat to public health in the largest number of urban areas and that are or will be listed pursuant to subsection (b) of this section, and

(ii) identify the source categories or subcategories emitting such pollutants that are or will be listed pursuant to subsection (c) of this section. When identifying categories and subcategories of sources under this subparagraph, the Administrator



shall assure that sources accounting for 90 per centum or more of the aggregate emissions of each of the 30 identified hazardous air pollutants are subject to standards pursuant to subsection (d) of this section.

(C) The strategy shall include a schedule of specific actions to substantially reduce the public health risks posed by the release of hazardous air pollutants from area sources that will be implemented by the Administrator under the authority of this or other laws (including, but not limited to, the Toxic Substances Control Act [15 U.S.C.A. § 2601 et seq.], the Federal Insecticide, Fungicide and Rodenticide Act [7 U.S.C.A. § 136 et seq.] and the Resource Conservation and Recovery Act [42 U.S.C.A. § 6901 et seq.]) or by the States. The strategy shall achieve a reduction in the incidence of cancer attributable to exposure to hazardous air pollutants emitted by stationary sources of not less than 75 per centum, considering control of emissions of hazardous air pollutants from all stationary sources and resulting from measures implemented by the Administrator or by the States under this or other laws.

(D) The strategy may also identify research needs in monitoring, analytical methodology, modeling or pollution control techniques and recommendations for changes in law that would further the goals and objectives of this subsection.

(E) Nothing in this subsection shall be interpreted to preclude or delay implementation of actions with respect to area sources of hazardous air pollutants under consideration pursuant to this or any other law and that may be promulgated before the strategy is prepared.

(F) The Administrator shall implement the strategy as expeditiously as practicable assuring that all sources are in compliance with all requirements not later than 9 years after November 15, 1990.

(G) As part of such strategy the Administrator shall provide for ambient monitoring and emissions modeling in urban areas as appropriate to demonstrate that the goals and objectives of the strategy are being met.

#### **(4) Areawide activities**

In addition to the national urban air toxics strategy authorized by paragraph (3), the Administrator shall also encourage and support areawide strategies developed by State or local air pollution control agencies that are intended to reduce risks from emissions by area sources within a particular urban area. From the funds available for grants under this section, the Administrator shall set aside not less than 10 per centum to support areawide strategies addressing hazardous air pollutants emitted by area sources and shall award such funds on a demonstration basis to those States with innovative and effective strategies. At the request of State or local air pollution control officials, the Administrator shall prepare guidelines for control technologies or management practices which may be applicable to various categories or subcategories of area sources.

#### **(5) Report**

The Administrator shall report to the Congress at intervals not later than 8 and 12 years after November 15, 1990, on actions taken under this subsection and other parts of this chapter to reduce the risk to public health posed by the release of hazardous air pollutants from area sources. The reports shall also identify specific metropolitan areas that continue to experience high risks to public health as the result of emissions from area sources.

#### **(I) State programs**

##### **(1) In general**

Each State may develop and submit to the Administrator for approval a program for the implementation and enforcement (including a review of enforcement delegations previously granted) of emission standards and other requirements for air pollutants subject to this section or requirements for the prevention and mitigation of accidental releases pursuant to subsection (r) of this section. A program submitted by a State under this subsection may provide for partial or complete delegation of the Administrator's authorities and responsibilities to implement and enforce emissions standards and prevention requirements but shall not include authority to set standards less stringent than those promulgated by the Administrator under this chapter.

**(2) Guidance**

Not later than 12 months after November 15, 1990, the Administrator shall publish guidance that would be useful to the States in developing programs for submittal under this subsection. The guidance shall also provide for the registration of all facilities producing, processing, handling or storing any substance listed pursuant to subsection (r) of this section in amounts greater than the threshold quantity. The Administrator shall include as an element in such guidance an optional program begun in 1986 for the review of high-risk point sources of air pollutants including, but not limited to, hazardous air pollutants listed pursuant to subsection (b) of this section.

**(3) Technical assistance**

The Administrator shall establish and maintain an air toxics clearinghouse and center to provide technical information and assistance to State and local agencies and, on a cost recovery basis, to others on control technology, health and ecological risk assessment, risk analysis, ambient monitoring and modeling, and emissions measurement and monitoring. The Administrator shall use the authority of [section 7403](#) of this title to examine methods for preventing, measuring, and controlling emissions and evaluating associated health and ecological risks. Where appropriate, such activity shall be conducted with not-for-profit organizations. The Administrator may conduct research on methods for preventing, measuring and controlling emissions and evaluating associated health and environment risks. All information collected under this paragraph shall be available to the public.

**(4) Grants**

Upon application of a State, the Administrator may make grants, subject to such terms and conditions as the Administrator deems appropriate, to such State for the purpose of assisting the State in developing and implementing a program for submittal and approval under this subsection. Programs assisted under this paragraph may include program elements addressing air pollutants or extremely hazardous substances other than those specifically subject to this section. Grants under this paragraph may include support for high-risk point source review as provided in paragraph (2) and support for the development and implementation of areawide area source programs pursuant to subsection (k) of this section.

**(5) Approval or disapproval**

Not later than 180 days after receiving a program submitted by a State, and after notice and opportunity for public comment, the Administrator shall either approve or disapprove such program. The Administrator shall disapprove any program submitted by a State, if the Administrator determines that--

(A) the authorities contained in the program are not adequate to assure compliance by all sources within the State with each applicable standard, regulation or requirement established by the Administrator under this section;

(B) adequate authority does not exist, or adequate resources are not available, to implement the program;

(C) the schedule for implementing the program and assuring compliance by affected sources is not sufficiently expeditious;  
or

(D) the program is otherwise not in compliance with the guidance issued by the Administrator under paragraph (2) or is not likely to satisfy, in whole or in part, the objectives of this chapter.

If the Administrator disapproves a State program, the Administrator shall notify the State of any revisions or modifications necessary to obtain approval. The State may revise and resubmit the proposed program for review and approval pursuant to the provisions of this subsection.

**(6) Withdrawal**

Whenever the Administrator determines, after public hearing, that a State is not administering and enforcing a program approved pursuant to this subsection in accordance with the guidance published pursuant to paragraph (2) or the requirements of paragraph (5), the Administrator shall so notify the State and, if action which will assure prompt compliance is not taken within 90 days, the Administrator shall withdraw approval of the program. The Administrator shall not withdraw approval of any program unless the State shall have been notified and the reasons for withdrawal shall have been stated in writing and made public.

**(7) Authority to enforce**

Nothing in this subsection shall prohibit the Administrator from enforcing any applicable emission standard or requirement under this section.

**(8) Local program**

The Administrator may, after notice and opportunity for public comment, approve a program developed and submitted by a local air pollution control agency (after consultation with the State) pursuant to this subsection and any such agency implementing an approved program may take any action authorized to be taken by a State under this section.

**(9) Permit authority**

Nothing in this subsection shall affect the authorities and obligations of the Administrator or the State under subchapter V of this chapter.

**(m) Atmospheric deposition to Great Lakes and coastal waters**

**(1) Deposition assessment**

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.

## (2) Great Lakes monitoring network

The Administrator shall oversee, in accordance with Annex 15 of the Great Lakes Water Quality Agreement, the establishment and operation of a Great Lakes atmospheric deposition network to monitor atmospheric deposition of hazardous air pollutants (and in the Administrator's discretion, other air pollutants) to the Great Lakes.

(A) As part of the network provided for in this paragraph, and not later than December 31, 1991, the Administrator shall establish in each of the 5 Great Lakes at least 1 facility capable of monitoring the atmospheric deposition of hazardous air pollutants in both dry and wet conditions.

(B) The Administrator shall use the data provided by the network to identify and track the movement of hazardous air pollutants through the Great Lakes, to determine the portion of water pollution loadings attributable to atmospheric deposition of such pollutants, and to support development of remedial action plans and other management plans as required by the Great Lakes Water Quality Agreement.

(C) The Administrator shall assure that the data collected by the Great Lakes atmospheric deposition monitoring network is in a format compatible with databases sponsored by the International Joint Commission, Canada, and the several States of the Great Lakes region.

## (3) Monitoring for the Chesapeake Bay and Lake Champlain

The Administrator shall establish at the Chesapeake Bay and Lake Champlain atmospheric deposition stations to monitor deposition of hazardous air pollutants (and in the Administrator's discretion, other air pollutants) within the Chesapeake Bay and Lake Champlain watersheds. The Administrator shall determine the role of air deposition in the pollutant loadings of the Chesapeake Bay and Lake Champlain, investigate the sources of air pollutants deposited in the watersheds, evaluate the health and environmental effects of such pollutant loadings, and shall sample such pollutants in biota, fish and wildlife within the watersheds, as necessary to characterize such effects.

## (4) Monitoring for coastal waters

The Administrator shall design and deploy atmospheric deposition monitoring networks for coastal waters and their watersheds and shall make any information collected through such networks available to the public. As part of this effort, the Administrator shall conduct research to develop and improve deposition monitoring methods, and to determine the relative contribution of atmospheric pollutants to pollutant loadings. For purposes of this subsection, “coastal waters” shall mean estuaries selected pursuant to section 320(a)(2)(A) of the Federal Water Pollution Control Act [33 U.S.C.A. § 1330(a)(2) (A) ] or listed pursuant to section 320(a)(2)(B) of such Act [33 U.S.C.A. § 1330(a)(2)(B) ] or estuarine research reserves designated pursuant to [section 1461 of Title 16](#).

**(5) Report**

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 coastal 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<sup>2</sup> 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.A. § 1251 et seq.] or, with respect to the Great Lakes, exceedances<sup>2</sup> 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 are necessary to assure protection of human health and the environment.

**(6) Additional regulation**

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 atmospheric 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.

**(n) Other provisions**

**(1) Electric utility steam generating units**

(A) 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.

(B) 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.

(C) The National Institute of Environmental Health Sciences shall conduct, and transmit to the Congress not later than 3 years after November 15, 1990, a study to determine the threshold level of mercury exposure below which adverse human health effects are not expected to occur. Such study shall include a threshold for mercury concentrations in the tissue of fish which may be consumed (including consumption by sensitive populations) without adverse effects to public health.

**(2) Coke oven production technology study**

(A) The Secretary of the Department of Energy and the Administrator shall jointly undertake a 6-year study to assess coke oven production emission control technologies and to assist in the development and commercialization of technically practicable and economically viable control technologies which have the potential to significantly reduce emissions of hazardous air pollutants from coke oven production facilities. In identifying control technologies, the Secretary and the Administrator shall consider the range of existing coke oven operations and battery design and the availability of sources of materials for such coke ovens as well as alternatives to existing coke oven production design.

(B) The Secretary and the Administrator are authorized to enter into agreements with persons who propose to develop, install and operate coke production emission control technologies which have the potential for significant emissions reductions of hazardous air pollutants provided that Federal funds shall not exceed 50 per centum of the cost of any project assisted pursuant to this paragraph.

(C) On completion of the study, the Secretary shall submit to Congress a report on the results of the study and shall make recommendations to the Administrator identifying practicable and economically viable control technologies for coke oven production facilities to reduce residual risks remaining after implementation of the standard under subsection (d) of this section.

(D) There are authorized to be appropriated \$5,000,000 for each of the fiscal years 1992 through 1997 to carry out the program authorized by this paragraph.

**(3) Publicly owned treatment works**

The Administrator may conduct, in cooperation with the owners and operators of publicly owned treatment works, studies to characterize emissions of hazardous air pollutants emitted by such facilities, to identify industrial, commercial and residential discharges that contribute to such emissions and to demonstrate control measures for such emissions. When promulgating any standard under this section applicable to publicly owned treatment works, the Administrator may provide for control measures that include pretreatment of discharges causing emissions of hazardous air pollutants and process or product substitutions or limitations that may be effective in reducing such emissions. The Administrator may prescribe uniform sampling, modeling and risk assessment methods for use in implementing this subsection.

**(4) Oil and gas wells; pipeline facilities**

(A) Notwithstanding the provisions of subsection (a) of this section, emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources, and in the case of any oil or gas exploration or production well (with its associated equipment), such emissions shall not be aggregated for any purpose under this section.

(B) The Administrator shall not list oil and gas production wells (with its associated equipment) as an area source category under subsection (c) of this section, except that the Administrator may establish an area source category for oil and gas production wells located in any metropolitan statistical area or consolidated metropolitan statistical area with a population in excess of 1 million, if the Administrator determines that emissions of hazardous air pollutants from such wells present more than a negligible risk of adverse effects to public health.

**(5) Hydrogen sulfide**

The Administrator is directed to assess the hazards to public health and the environment resulting from the emission of hydrogen sulfide associated with the extraction of oil and natural gas resources. To the extent practicable, the assessment shall build upon and not duplicate work conducted for an assessment pursuant to section 8002(m) of the Solid Waste Disposal Act [42 U.S.C.A. § 6982(m)] and shall reflect consultation with the States. The assessment shall include a review of existing State and industry control standards, techniques and enforcement. The Administrator shall report to the Congress within 24 months after November 15, 1990, with the findings of such assessment, together with any recommendations, and shall, as appropriate, develop and implement a control strategy for emissions of hydrogen sulfide to protect human health and the environment, based on the findings of such assessment, using authorities under this chapter including sections<sup>3</sup> 7411 of this title and this section.

**(6) Hydrofluoric acid**

Not later than 2 years after November 15, 1990, the Administrator shall, for those regions of the country which do not have comprehensive health and safety regulations with respect to hydrofluoric acid, complete a study of the potential hazards of hydrofluoric acid and the uses of hydrofluoric acid in industrial and commercial applications to public health and the environment considering a range of events including worst-case accidental releases and shall make recommendations to the Congress for the reduction of such hazards, if appropriate.

**(7) RCRA facilities**

In the case of any category or subcategory of sources the air emissions of which are regulated under subtitle C of the Solid Waste Disposal Act [42 U.S.C.A. § 6921 et seq.], the Administrator shall take into account any regulations of such emissions which are promulgated under such subtitle and shall, to the maximum extent practicable and consistent with the provisions of this section, ensure that the requirements of such subtitle and this section are consistent.



**(o) National Academy of Sciences study**

**(1) Request of the Academy**

Within 3 months of November 15, 1990, the Administrator shall enter into appropriate arrangements with the National Academy of Sciences to conduct a review of--

(A) risk assessment methodology used by the Environmental Protection Agency to determine the carcinogenic risk associated with exposure to hazardous air pollutants from source categories and subcategories subject to the requirements of this section; and

(B) improvements in such methodology.

**(2) Elements to be studied**

In conducting such review, the National Academy of Sciences should consider, but not be limited to, the following--

(A) the techniques used for estimating and describing the carcinogenic potency to humans of hazardous air pollutants; and

(B) the techniques used for estimating exposure to hazardous air pollutants (for hypothetical and actual maximally exposed individuals as well as other exposed individuals).

**(3) Other health effects of concern**

To the extent practicable, the Academy shall evaluate and report on the methodology for assessing the risk of adverse human health effects other than cancer for which safe thresholds of exposure may not exist, including, but not limited to, inheritable genetic mutations, birth defects, and reproductive dysfunctions.

**(4) Report**

A report on the results of such review shall be submitted to the Senate Committee on Environment and Public Works, the House Committee on Energy and Commerce, the Risk Assessment and Management Commission established by section 303 of the Clean Air Act Amendments of 1990 and the Administrator not later than 30 months after November 15, 1990.

**(5) Assistance**

The Administrator shall assist the Academy in gathering any information the Academy deems necessary to carry out this subsection. The Administrator may use any authority under this chapter to obtain information from any person, and to require any person to conduct tests, keep and produce records, and make reports respecting research or other activities conducted by such person as necessary to carry out this subsection.

**(6) Authorization**

Of the funds authorized to be appropriated to the Administrator by this chapter, such amounts as are required shall be available to carry out this subsection.

**(7) Guidelines for carcinogenic risk assessment**



The Administrator shall consider, but need not adopt, the recommendations contained in the report of the National Academy of Sciences prepared pursuant to this subsection and the views of the Science Advisory Board, with respect to such report. Prior to the promulgation of any standard under subsection (f) of this section, and after notice and opportunity for comment, the Administrator shall publish revised Guidelines for Carcinogenic Risk Assessment or a detailed explanation of the reasons that any recommendations contained in the report of the National Academy of Sciences will not be implemented. The publication of such revised Guidelines shall be a final Agency action for purposes of [section 7607](#) of this title.

**(p) Mickey Leland National Urban Air Toxics Research Center**

**(1) Establishment**

The Administrator shall oversee the establishment of a National Urban Air Toxics Research Center, to be located at a university, a hospital, or other facility capable of undertaking and maintaining similar research capabilities in the areas of epidemiology, oncology, toxicology, pulmonary medicine, pathology, and biostatistics. The center shall be known as the Mickey Leland National Urban Air Toxics Research Center. The geographic site of the National Urban Air Toxics Research Center should be further directed to Harris County, Texas, in order to take full advantage of the well developed scientific community presence on-site at the Texas Medical Center as well as the extensive data previously compiled for the comprehensive monitoring system currently in place.

**(2) Board of Directors**

The National Urban Air Toxics Research Center shall be governed by a Board of Directors to be comprised of 9 members, the appointment of which shall be allocated pro rata among the Speaker of the House, the Majority Leader of the Senate and the President. The members of the Board of Directors shall be selected based on their respective academic and professional backgrounds and expertise in matters relating to public health, environmental pollution and industrial hygiene. The duties of the Board of Directors shall be to determine policy and research guidelines, submit views from center sponsors and the public and issue periodic reports of center findings and activities.

**(3) Scientific Advisory Panel**

The Board of Directors shall be advised by a Scientific Advisory Panel, the 13 members of which shall be appointed by the Board, and to include eminent members of the scientific and medical communities. The Panel membership may include scientists with relevant experience from the National Institute of Environmental Health Sciences, the Center for Disease Control, the Environmental Protection Agency, the National Cancer Institute, and others, and the Panel shall conduct peer review and evaluate research results. The Panel shall assist the Board in developing the research agenda, reviewing proposals and applications, and advise on the awarding of research grants.

**(4) Funding**

The center shall be established and funded with both Federal and private source funds.

**(q) Savings provision**

**(1) Standards previously promulgated**

Any standard under this section in effect before the date of enactment of the Clean Air Act Amendments of 1990 [Nov. 15, 1990] shall remain in force and effect after such date unless modified as provided in this section before the date of enactment of such Amendments or under such Amendments. Except as provided in paragraph (4), any standard under this section which has been promulgated, but has not taken effect, before such date shall not be affected by such Amendments unless modified as provided in this section before such date or under such Amendments. Each such standard shall be reviewed and, if appropriate, revised, to comply with the requirements of subsection (d) of this section within 10 years after the date of

enactment of the Clean Air Act Amendments of 1990. If a timely petition for review of any such standard under [section 7607](#) of this title is pending on such date of enactment, the standard shall be upheld if it complies with this section as in effect before that date. If any such standard is remanded to the Administrator, the Administrator may in the Administrator's discretion apply either the requirements of this section, or those of this section as in effect before the date of enactment of the Clean Air Act Amendments of 1990.

**(2) Special rule**

Notwithstanding paragraph (1), no standard shall be established under this section, as amended by the Clean Air Act Amendments of 1990, for radionuclide emissions from (A) elemental phosphorous plants, (B) grate calcination elemental phosphorous plants, (C) phosphogypsum stacks, or (D) any subcategory of the foregoing. This section, as in effect prior to the date of enactment of the Clean Air Act Amendments of 1990 [November 15, 1990], shall remain in effect for radionuclide emissions from such plants and stacks.

**(3) Other categories**

Notwithstanding paragraph (1), this section, as in effect prior to the date of enactment of the Clean Air Act Amendments of 1990 [Nov. 15, 1990], shall remain in effect for radionuclide emissions from non-Department of Energy Federal facilities that are not licensed by the Nuclear Regulatory Commission, coal-fired utility and industrial boilers, underground uranium mines, surface uranium mines, and disposal of uranium mill tailings piles, unless the Administrator, in the Administrator's discretion, applies the requirements of this section as modified by the Clean Air Act Amendments of 1990 to such sources of radionuclides.

**(4) Medical facilities**

Notwithstanding paragraph (1), no standard promulgated under this section prior to November 15, 1990, with respect to medical research or treatment facilities shall take effect for two years following November 15, 1990, unless the Administrator makes a determination pursuant to a rulemaking under subsection (d)(9) of this section. If the Administrator determines that the regulatory program established by the Nuclear Regulatory Commission for such facilities does not provide an ample margin of safety to protect public health, the requirements of this section shall fully apply to such facilities. If the Administrator determines that such regulatory program does provide an ample margin of safety to protect the public health, the Administrator is not required to promulgate a standard under this section for such facilities, as provided in subsection (d)(9) of this section.

**(r) Prevention of accidental releases**

**(1) Purpose and general duty**

It shall be the objective of the regulations and programs authorized under this subsection to prevent the accidental release and to minimize the consequences of any such release of any substance listed pursuant to paragraph (3) or any other extremely hazardous substance. The owners and operators of stationary sources producing, processing, handling or storing such substances have a general duty in the same manner and to the same extent as [section 654 of Title 29](#) to identify hazards which may result from such releases using appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur. For purposes of this paragraph, the provisions of [section 7604](#) of this title shall not be available to any person or otherwise be construed to be applicable to this paragraph. Nothing in this section shall be interpreted, construed, implied or applied to create any liability or basis for suit for compensation for bodily injury or any other injury or property damages to any person which may result from accidental releases of such substances.

**(2) Definitions**

(A) The term “accidental release” means an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source.

(B) The term “regulated substance” means a substance listed under paragraph (3).

(C) The term “stationary source” means any buildings, structures, equipment, installations or substance emitting stationary activities (i) which belong to the same industrial group, (ii) which are located on one or more contiguous properties, (iii) which are under the control of the same person (or persons under common control), and (iv) from which an accidental release may occur.

(D) The term “retail facility” means a stationary source at which more than one-half of the income is obtained from direct sales to end users or at which more than one-half of the fuel sold, by volume, is sold through a cylinder exchange program.

**(3) List of substances**

The Administrator shall promulgate not later than 24 months after November 15, 1990, an initial list of 100 substances which, in the case of an accidental release, are known to cause or may reasonably be anticipated to cause death, injury, or serious adverse effects to human health or the environment. For purposes of promulgating such list, the Administrator shall use, but is not limited to, the list of extremely hazardous substances published under the Emergency Planning and Community Right-to-Know Act of 1986 [42 U.S.C.A. § 11001 et seq.], with such modifications as the Administrator deems appropriate. The initial list shall include chlorine, anhydrous ammonia, methyl chloride, ethylene oxide, vinyl chloride, methyl isocyanate, hydrogen cyanide, ammonia, hydrogen sulfide, toluene diisocyanate, phosgene, bromine, anhydrous hydrogen chloride, hydrogen fluoride, anhydrous sulfur dioxide, and sulfur trioxide. The initial list shall include at least 100 substances which pose the greatest risk of causing death, injury, or serious adverse effects to human health or the environment from accidental releases. Regulations establishing the list shall include an explanation of the basis for establishing the list. The list may be revised from time to time by the Administrator on the Administrator's own motion or by petition and shall be reviewed at least every 5 years. No air pollutant for which a national primary ambient air quality standard has been established shall be included on any such list. No substance, practice, process, or activity regulated under subchapter VI of this chapter shall be subject to regulations under this subsection. The Administrator shall establish procedures for the addition and deletion of substances from the list established under this paragraph consistent with those applicable to the list in subsection (b) of this section.

**(4) Factors to be considered**

In listing substances under paragraph (3), the Administrator--

(A) shall consider--

(i) the severity of any acute adverse health effects associated with accidental releases of the substance;

(ii) the likelihood of accidental releases of the substance; and

(iii) the potential magnitude of human exposure to accidental releases of the substance; and

(B) shall not list a flammable substance when used as a fuel or held for sale as a fuel at a retail facility under this subsection solely because of the explosive or flammable properties of the substance, unless a fire or explosion caused by the substance will result in acute adverse health effects from human exposure to the substance, including the unburned fuel or its combustion byproducts, other than those caused by the heat of the fire or impact of the explosion.

**(5) Threshold quantity**

At the time any substance is listed pursuant to paragraph (3), the Administrator shall establish by rule, a threshold quantity for the substance, taking into account the toxicity, reactivity, volatility, dispersibility, combustibility, or flammability of the substance and the amount of the substance which, as a result of an accidental release, is known to cause or may reasonably be anticipated to cause death, injury or serious adverse effects to human health for which the substance was listed. The Administrator is authorized to establish a greater threshold quantity for, or to exempt entirely, any substance that is a nutrient used in agriculture when held by a farmer.

**(6) Chemical Safety Board**

(A) There is hereby established an independent safety board to be known as the Chemical Safety and Hazard Investigation Board.

(B) The Board shall consist of 5 members, including a Chairperson, who shall be appointed by the President, by and with the advice and consent of the Senate. Members of the Board shall be appointed on the basis of technical qualification, professional standing, and demonstrated knowledge in the fields of accident reconstruction, safety engineering, human factors, toxicology, or air pollution regulation. The terms of office of members of the Board shall be 5 years. Any member of the Board, including the Chairperson, may be removed for inefficiency, neglect of duty, or malfeasance in office. The Chairperson shall be the Chief Executive Officer of the Board and shall exercise the executive and administrative functions of the Board.

(C) The Board shall--

(i) investigate (or cause to be investigated), determine and report to the public in writing the facts, conditions, and circumstances and the cause or probable cause of any accidental release resulting in a fatality, serious injury or substantial property damages;

(ii) issue periodic reports to the Congress, Federal, State and local agencies, including the Environmental Protection Agency and the Occupational Safety and Health Administration, concerned with the safety of chemical production, processing, handling and storage, and other interested persons recommending measures to reduce the likelihood or the consequences of accidental releases and proposing corrective steps to make chemical production, processing, handling and storage as safe and free from risk of injury as is possible and may include in such reports proposed rules or orders which should be issued by the Administrator under the authority of this section or the Secretary of Labor under the Occupational Safety and Health Act [29 U.S.C.A. § 651 et seq.] to prevent or minimize the consequences of any release of substances that may cause death, injury or other serious adverse effects on human health or substantial property damage as the result of an accidental release; and

(iii) establish by regulation requirements binding on persons for reporting accidental releases into the ambient air subject to the Board's investigatory jurisdiction. Reporting releases to the National Response Center, in lieu of the Board directly,

shall satisfy such regulations. The National Response Center shall promptly notify the Board of any releases which are within the Board's jurisdiction.

**(D)** The Board may utilize the expertise and experience of other agencies.

**(E)** The Board shall coordinate its activities with investigations and studies conducted by other agencies of the United States having a responsibility to protect public health and safety. The Board shall enter into a memorandum of understanding with the National Transportation Safety Board to assure coordination of functions and to limit duplication of activities which shall designate the National Transportation Safety Board as the lead agency for the investigation of releases which are transportation related. The Board shall not be authorized to investigate marine oil spills, which the National Transportation Safety Board is authorized to investigate. The Board shall enter into a memorandum of understanding with the Occupational Safety and Health Administration so as to limit duplication of activities. In no event shall the Board forego an investigation where an accidental release causes a fatality or serious injury among the general public, or had the potential to cause substantial property damage or a number of deaths or injuries among the general public.

**(F)** The Board is authorized to conduct research and studies with respect to the potential for accidental releases, whether or not an accidental release has occurred, where there is evidence which indicates the presence of a potential hazard or hazards. To the extent practicable, the Board shall conduct such studies in cooperation with other Federal agencies having emergency response authorities, State and local governmental agencies and associations and organizations from the industrial, commercial, and nonprofit sectors.

**(G)** No part of the conclusions, findings, or recommendations of the Board relating to any accidental release or the investigation thereof shall be admitted as evidence or used in any action or suit for damages arising out of any matter mentioned in such report.

**(H)** Not later than 18 months after November 15, 1990, the Board shall publish a report accompanied by recommendations to the Administrator on the use of hazard assessments in preventing the occurrence and minimizing the consequences of accidental releases of extremely hazardous substances. The recommendations shall include a list of extremely hazardous substances which are not regulated substances (including threshold quantities for such substances) and categories of stationary sources for which hazard assessments would be an appropriate measure to aid in the prevention of accidental releases and to minimize the consequences of those releases that do occur. The recommendations shall also include a description of the information and analysis which would be appropriate to include in any hazard assessment. The Board shall also make recommendations with respect to the role of risk management plans as required by paragraph (8)(B)<sup>4</sup> in preventing accidental releases. The Board may from time to time review and revise its recommendations under this subparagraph.

**(I)** Whenever the Board submits a recommendation with respect to accidental releases to the Administrator, the Administrator shall respond to such recommendation formally and in writing not later than 180 days after receipt thereof. The response to the Board's recommendation by the Administrator shall indicate whether the Administrator will--

(i) initiate a rulemaking or issue such orders as are necessary to implement the recommendation in full or in part, pursuant to any timetable contained in the recommendation;

(ii) decline to initiate a rulemaking or issue orders as recommended.

Any determination by the Administrator not to implement a recommendation of the Board or to implement a recommendation only in part, including any variation from the schedule contained in the recommendation, shall be accompanied by a statement from the Administrator setting forth the reasons for such determination.

**(J)** The Board may make recommendations with respect to accidental releases to the Secretary of Labor. Whenever the Board submits such recommendation, the Secretary shall respond to such recommendation formally and in writing not later than 180 days after receipt thereof. The response to the Board's recommendation by the Administrator shall indicate whether the Secretary will--

**(i)** initiate a rulemaking or issue such orders as are necessary to implement the recommendation in full or in part, pursuant to any timetable contained in the recommendation;

**(ii)** decline to initiate a rulemaking or issue orders as recommended.

Any determination by the Secretary not to implement a recommendation or to implement a recommendation only in part, including any variation from the schedule contained in the recommendation, shall be accompanied by a statement from the Secretary setting forth the reasons for such determination.

**(K)** Within 2 years after November 15, 1990, the Board shall issue a report to the Administrator of the Environmental Protection Agency and to the Administrator of the Occupational Safety and Health Administration recommending the adoption of regulations for the preparation of risk management plans and general requirements for the prevention of accidental releases of regulated substances into the ambient air (including recommendations for listing substances under paragraph (3)) and for the mitigation of the potential adverse effect on human health or the environment as a result of accidental releases which should be applicable to any stationary source handling any regulated substance in more than threshold amounts. The Board may include proposed rules or orders which should be issued by the Administrator under authority of this subsection or by the Secretary of Labor under the Occupational Safety and Health Act [29 U.S.C.A. § 651 et seq.]. Any such recommendations shall be specific and shall identify the regulated substance or class of regulated substances (or other substances) to which the recommendations apply. The Administrator shall consider such recommendations before promulgating regulations required by paragraph (7)(B).

**(L)** The Board, or upon authority of the Board, any member thereof, any administrative law judge employed by or assigned to the Board, or any officer or employee duly designated by the Board, may for the purpose of carrying out duties authorized by subparagraph (C)--

**(i)** hold such hearings, sit and act at such times and places, administer such oaths, and require by subpoena or otherwise attendance and testimony of such witnesses and the production of evidence and may require by order that any person engaged in the production, processing, handling, or storage of extremely hazardous substances submit written reports and responses to requests and questions within such time and in such form as the Board may require; and

**(ii)** upon presenting appropriate credentials and a written notice of inspection authority, enter any property where an accidental release causing a fatality, serious injury or substantial property damage has occurred and do all things therein necessary for a proper investigation pursuant to subparagraph (C) and inspect at reasonable times records, files, papers, processes, controls, and facilities and take such samples as are relevant to such investigation.

Whenever the Administrator or the Board conducts an inspection of a facility pursuant to this subsection, employees and their representatives shall have the same rights to participate in such inspections as provided in the Occupational Safety and Health Act [29 U.S.C.A. § 651 et seq.].

(M) In addition to that described in subparagraph (L), the Board may use any information gathering authority of the Administrator under this chapter, including the subpoena power provided in [section 7607\(a\)\(1\)](#) of this title.

(N) The Board is authorized to establish such procedural and administrative rules as are necessary to the exercise of its functions and duties. The Board is authorized without regard to [section 6101 of Title 41](#) to enter into contracts, leases, cooperative agreements or other transactions as may be necessary in the conduct of the duties and functions of the Board with any other agency, institution, or person.

(O) After the effective date of any reporting requirement promulgated pursuant to subparagraph (C)(iii) it shall be unlawful for any person to fail to report any release of any extremely hazardous substance as required by such subparagraph. The Administrator is authorized to enforce any regulation or requirements established by the Board pursuant to subparagraph (C) (iii) using the authorities of [sections 7413 and 7414](#) of this title. Any request for information from the owner or operator of a stationary source made by the Board or by the Administrator under this section shall be treated, for purposes of [sections 7413, 7414, 7416, 7420, 7603, 7604 and 7607](#) of this title and any other enforcement provisions of this chapter, as a request made by the Administrator under [section 7414](#) of this title and may be enforced by the Chairperson of the Board or by the Administrator as provided in such section.

(P) The Administrator shall provide to the Board such support and facilities as may be necessary for operation of the Board.

(Q) Consistent with subsection (G)<sup>5</sup> and [section 7414\(c\)](#) of this title any records, reports or information obtained by the Board shall be available to the Administrator, the Secretary of Labor, the Congress and the public, except that upon a showing satisfactory to the Board by any person that records, reports, or information, or particular part thereof (other than release or emissions data) to which the Board has access, if made public, is likely to cause substantial harm to the person's competitive position, the Board shall consider such record, report, or information or particular portion thereof confidential in accordance with [section 1905 of Title 18](#), except that such record, report, or information may be disclosed to other officers, employees, and authorized representatives of the United States concerned with carrying out this chapter or when relevant under any proceeding under this chapter. This subparagraph does not constitute authority to withhold records, reports, or information from the Congress.

(R) Whenever the Board submits or transmits any budget estimate, budget request, supplemental budget request, or other budget information, legislative recommendation, prepared testimony for congressional hearings, recommendation or study to the President, the Secretary of Labor, the Administrator, or the Director of the Office of Management and Budget, it shall concurrently transmit a copy thereof to the Congress. No report of the Board shall be subject to review by the Administrator or any Federal agency or to judicial review in any court. No officer or agency of the United States shall have authority to require the Board to submit its budget requests or estimates, legislative recommendations, prepared testimony, comments, recommendations or reports to any officer or agency of the United States for approval or review prior to the submission of such recommendations, testimony, comments or reports to the Congress. In the performance of their functions as established by this chapter, the members, officers and employees of the Board shall not be responsible to or subject to supervision or direction, in carrying out any duties under this subsection, of any officer or employee or agent of the Environmental Protection Agency, the Department of Labor or any other agency of the United States except that the President may remove any member,



officer or employee of the Board for inefficiency, neglect of duty or malfeasance in office. Nothing in this section shall affect the application of Title 5 to officers or employees of the Board.

(S) The Board shall submit an annual report to the President and to the Congress which shall include, but not be limited to, information on accidental releases which have been investigated by or reported to the Board during the previous year, recommendations for legislative or administrative action which the Board has made, the actions which have been taken by the Administrator or the Secretary of Labor or the heads of other agencies to implement such recommendations, an identification of priorities for study and investigation in the succeeding year, progress in the development of risk-reduction technologies and the response to and implementation of significant research findings on chemical safety in the public and private sector.

#### **(7) Accident prevention**

(A) In order to prevent accidental releases of regulated substances, the Administrator is authorized to promulgate release prevention, detection, and correction requirements which may include monitoring, record-keeping, reporting, training, vapor recovery, secondary containment, and other design, equipment, work practice, and operational requirements. Regulations promulgated under this paragraph may make distinctions between various types, classes, and kinds of facilities, devices and systems taking into consideration factors including, but not limited to, the size, location, process, process controls, quantity of substances handled, potency of substances, and response capabilities present at any stationary source. Regulations promulgated pursuant to this subparagraph shall have an effective date, as determined by the Administrator, assuring compliance as expeditiously as practicable.

(B)(i) Within 3 years after November 15, 1990, the Administrator shall promulgate reasonable regulations and appropriate guidance to provide, to the greatest extent practicable, for the prevention and detection of accidental releases of regulated substances and for response to such releases by the owners or operators of the sources of such releases. The Administrator shall utilize the expertise of the Secretaries of Transportation and Labor in promulgating such regulations. As appropriate, such regulations shall cover the use, operation, repair, replacement, and maintenance of equipment to monitor, detect, inspect, and control such releases, including training of persons in the use and maintenance of such equipment and in the conduct of periodic inspections. The regulations shall include procedures and measures for emergency response after an accidental release of a regulated substance in order to protect human health and the environment. The regulations shall cover storage, as well as operations. The regulations shall, as appropriate, recognize differences in size, operations, processes, class and categories of sources and the voluntary actions of such sources to prevent such releases and respond to such releases. The regulations shall be applicable to a stationary source 3 years after the date of promulgation, or 3 years after the date on which a regulated substance present at the source in more than threshold amounts is first listed under paragraph (3), whichever is later.

(ii) The regulations under this subparagraph shall require the owner or operator of stationary sources at which a regulated substance is present in more than a threshold quantity to prepare and implement a risk management plan to detect and prevent or minimize accidental releases of such substances from the stationary source, and to provide a prompt emergency response to any such releases in order to protect human health and the environment. Such plan shall provide for compliance with the requirements of this subsection and shall also include each of the following:

(I) a hazard assessment to assess the potential effects of an accidental release of any regulated substance. This assessment shall include an estimate of potential release quantities and a determination of downwind effects, including potential exposures to affected populations. Such assessment shall include a previous release history of the past 5 years, including the size, concentration, and duration of releases, and shall include an evaluation of worst case accidental releases;



(II) a program for preventing accidental releases of regulated substances, including safety precautions and maintenance, monitoring and employee training measures to be used at the source; and

(III) a response program providing for specific actions to be taken in response to an accidental release of a regulated substance so as to protect human health and the environment, including procedures for informing the public and local agencies responsible for responding to accidental releases, emergency health care, and employee training measures.

At the time regulations are promulgated under this subparagraph, the Administrator shall promulgate guidelines to assist stationary sources in the preparation of risk management plans. The guidelines shall, to the extent practicable, include model risk management plans.

(iii) The owner or operator of each stationary source covered by clause (ii) shall register a risk management plan prepared under this subparagraph with the Administrator before the effective date of regulations under clause (i) in such form and manner as the Administrator shall, by rule, require. Plans prepared pursuant to this subparagraph shall also be submitted to the Chemical Safety and Hazard Investigation Board, to the State in which the stationary source is located, and to any local agency or entity having responsibility for planning for or responding to accidental releases which may occur at such source, and shall be available to the public under [section 7414\(c\)](#) of this title. The Administrator shall establish, by rule, an auditing system to regularly review and, if necessary, require revision in risk management plans to assure that the plans comply with this subparagraph. Each such plan shall be updated periodically as required by the Administrator, by rule.

(C) Any regulations promulgated pursuant to this subsection shall to the maximum extent practicable, consistent with this subsection, be consistent with the recommendations and standards established by the American Society of Mechanical Engineers (ASME), the American National Standards Institute (ANSI) or the American Society of Testing Materials (ASTM). The Administrator shall take into consideration the concerns of small business in promulgating regulations under this subsection.

(D) In carrying out the authority of this paragraph, the Administrator shall consult with the Secretary of Labor and the Secretary of Transportation and shall coordinate any requirements under this paragraph with any requirements established for comparable purposes by the Occupational Safety and Health Administration or the Department of Transportation. Nothing in this subsection shall be interpreted, construed or applied to impose requirements affecting, or to grant the Administrator, the Chemical Safety and Hazard Investigation Board, or any other agency any authority to regulate (including requirements for hazard assessment), the accidental release of radionuclides arising from the construction and operation of facilities licensed by the Nuclear Regulatory Commission.

(E) After the effective date of any regulation or requirement imposed under this subsection, it shall be unlawful for any person to operate any stationary source subject to such regulation or requirement in violation of such regulation or requirement. Each regulation or requirement under this subsection shall for purposes of [sections 7413](#), [7414](#), [7416](#), [7420](#), [7604](#), and [7607](#) of this title and other enforcement provisions of this chapter, be treated as a standard in effect under subsection (d) of this section.

(F) Notwithstanding the provisions of subchapter V of this chapter or this section, no stationary source shall be required to apply for, or operate pursuant to, a permit issued under such subchapter solely because such source is subject to regulations or requirements under this subsection.

(G) In exercising any authority under this subsection, the Administrator shall not, for purposes of [section 653\(b\)\(1\) of Title 29](#), be deemed to be exercising statutory authority to prescribe or enforce standards or regulations affecting occupational safety and health.

**(H) Public access to off-site consequence analysis information**

**(i) Definitions**

In this subparagraph:

**(I) Covered person**

The term “covered person” means--

(aa) an officer or employee of the United States;

(bb) an officer or employee of an agent or contractor of the Federal Government;

(cc) an officer or employee of a State or local government;

(dd) an officer or employee of an agent or contractor of a State or local government;

(ee) an individual affiliated with an entity that has been given, by a State or local government, responsibility for preventing, planning for, or responding to accidental releases;

(ff) an officer or employee or an agent or contractor of an entity described in item (ee); and

(gg) a qualified researcher under clause (vii).

**(II) Official use**

The term “official use” means an action of a Federal, State, or local government agency or an entity referred to in subclause (I)(ee) intended to carry out a function relevant to preventing, planning for, or responding to accidental releases.

**(III) Off-site consequence analysis information**

The term “off-site consequence analysis information” means those portions of a risk management plan, excluding the executive summary of the plan, consisting of an evaluation of 1 or more worst-case release scenarios or alternative release scenarios, and any electronic data base created by the Administrator from those portions.

**(IV) Risk management plan**

The term “risk management plan” means a risk management plan submitted to the Administrator by an owner or operator of a stationary source under subparagraph (B)(iii).

**(ii) Regulations**

Not later than 1 year after the date of enactment of this subparagraph, the President shall--

**(I) assess--**

**(aa)** the increased risk of terrorist and other criminal activity associated with the posting of off-site consequence analysis information on the Internet; and

**(bb)** the incentives created by public disclosure of off-site consequence analysis information for reduction in the risk of accidental releases; and

**(II)** based on the assessment under subclause (I), promulgate regulations governing the distribution of off-site consequence analysis information in a manner that, in the opinion of the President, minimizes the likelihood of accidental releases and the risk described in subclause (I)(aa) and the likelihood of harm to public health and welfare, and--

**(aa)** allows access by any member of the public to paper copies of off-site consequence analysis information for a limited number of stationary sources located anywhere in the United States, without any geographical restriction;

**(bb)** allows other public access to off-site consequence analysis information as appropriate;

**(cc)** allows access for official use by a covered person described in any of items (cc) through (ff) of clause (i)(I) (referred to in this subclause as a ‘State or local covered person’) to off-site consequence analysis information relating to stationary sources located in the person's State;

**(dd)** allows a State or local covered person to provide, for official use, off-site consequence analysis information relating to stationary sources located in the person's State to a State or local covered person in a contiguous State; and

**(ee)** allows a State or local covered person to obtain for official use, by request to the Administrator, off-site consequence analysis information that is not available to the person under item (cc).

**(iii) Availability under freedom of information act**

**(I) First year**

Off-site consequence analysis information, and any ranking of stationary sources derived from the information, shall not be made available under [section 552 of Title 5](#), during the 1-year period beginning on the date of enactment of this subparagraph.

**(II) After first year**

If the regulations under clause (ii) are promulgated on or before the end of the period described in subclause (I), off-site consequence analysis information covered by the regulations, and any ranking of stationary sources derived from the information, shall not be made available under [section 552 of Title 5](#), after the end of that period.

**(III) Applicability**

Subclauses (I) and (II) apply to off-site consequence analysis information submitted to the Administrator before, on, or after the date of enactment of this subparagraph.

**(iv) Availability of information during transition period**

The Administrator shall make off-site consequence analysis information available to covered persons for official use in a manner that meets the requirements of items (cc)through (ee) of clause (ii)(II), and to the public in a form that does not make available any information concerning the identity or location of stationary sources, during the period--

**(I)** beginning on the date of enactment of this subparagraph; and

**(II)** ending on the earlier of the date of promulgation of the regulations under clause (ii) or the date that is 1 year after the date of enactment of this subparagraph.

**(v) Prohibition on unauthorized disclosure of information by covered persons**

**(I) In general**

Beginning on the date of enactment of this subparagraph, a covered person shall not disclose to the public off-site consequence analysis information in any form, or any statewide or national ranking of identified stationary sources derived from such information, except as authorized by this subparagraph (including the regulations promulgated under clause (ii)). After the end of the 1-year period beginning on the date of enactment of this subparagraph, if regulations have not been promulgated under clause (ii), the preceding sentence shall not apply.

**(II) Criminal penalties**

Notwithstanding [section 7413](#) of this title, a covered person that willfully violates a restriction or prohibition established by this subparagraph (including the regulations promulgated under clause (ii)) shall, upon conviction, be fined for an infraction under [section 3571 of Title 18](#), (but shall not be subject to imprisonment) for each unauthorized disclosure of off-site consequence analysis information, except that subsection (d) of such section 3571 shall not

apply to a case in which the offense results in pecuniary loss unless the defendant knew that such loss would occur. The disclosure of off-site consequence analysis information for each specific stationary source shall be considered a separate offense. The total of all penalties that may be imposed on a single person or organization under this item shall not exceed \$1,000,000 for violations committed during any 1 calendar year.

**(III) Applicability**

If the owner or operator of a stationary source makes off-site consequence analysis information relating to that stationary source available to the public without restriction--

**(aa)** subclauses (I) and (II) shall not apply with respect to the information; and

**(bb)** the owner or operator shall notify the Administrator of the public availability of the information.

**(IV) List**

The Administrator shall maintain and make publicly available a list of all stationary sources that have provided notification under subclause (III)(bb).

**(vi) Notice**

The Administrator shall provide notice of the definition of official use as provided in clause (i)(III) and examples of actions that would and would not meet that definition, and notice of the restrictions on further dissemination and the penalties established by this Act to each covered person who receives off-site consequence analysis information under clause (iv) and each covered person who receives off-site consequence analysis information for an official use under the regulations promulgated under clause (ii).

**(vii) Qualified researchers**

**(I) In general**

Not later than 180 days after the date of enactment of this subparagraph, the Administrator, in consultation with the Attorney General, shall develop and implement a system for providing off-site consequence analysis information, including facility identification, to any qualified researcher, including a qualified researcher from industry or any public interest group.

**(II) Limitation on dissemination**

The system shall not allow the researcher to disseminate, or make available on the Internet, the off-site consequence analysis information, or any portion of the off-site consequence analysis information, received under this clause.

**(viii) Read-only information technology system**

In consultation with the Attorney General and the heads of other appropriate Federal agencies, the Administrator shall establish an information technology system that provides for the availability to the public of off-site consequence analysis information by means of a central data base under the control of the Federal Government that contains information that users may read, but that provides no means by which an electronic or mechanical copy of the information may be made.

**(ix) Voluntary industry accident prevention standards**

The Environmental Protection Agency, the Department of Justice, and other appropriate agencies may provide technical assistance to owners and operators of stationary sources and participate in the development of voluntary industry standards that will help achieve the objectives set forth in paragraph (1).

**(x) Effect on State or local law**

**(I) In general**

Subject to subclause (II), this subparagraph (including the regulations promulgated under this subparagraph) shall supersede any provision of State or local law that is inconsistent with this subparagraph (including the regulations).

**(II) Availability of information under State law**

Nothing in this subparagraph precludes a State from making available data on the off-site consequences of chemical releases collected in accordance with State law.

**(xi) Report**

**(I) In general**

Not later than 3 years after the date of enactment of this subparagraph, the Attorney General, in consultation with appropriate State, local, and Federal Government agencies, affected industry, and the public, shall submit to Congress a report that describes the extent to which regulations promulgated under this paragraph have resulted in actions, including the design and maintenance of safe facilities, that are effective in detecting, preventing, and minimizing the consequences of releases of regulated substances that may be caused by criminal activity. As part of this report, the Attorney General, using available data to the extent possible, and a sampling of covered stationary sources selected at the discretion of the Attorney General, and in consultation with appropriate State, local, and Federal governmental agencies, affected industry, and the public, shall review the vulnerability of covered stationary sources to criminal and terrorist activity, current industry practices regarding site security, and security of transportation of regulated substances. The Attorney General shall submit this report, containing the results of the review, together with recommendations, if any, for reducing vulnerability of covered stationary sources to criminal and terrorist activity, to the Committee on Commerce of the United States House of Representatives and the Committee on Environment and Public Works of the United States Senate and other relevant committees of Congress.

**(II) Interim report**

Not later than 12 months after the date of enactment of this subparagraph, the Attorney General shall submit to the Committee on Commerce of the United States House of Representatives and the Committee on Environment and Public Works of the United States Senate, and other relevant committees of Congress, an interim report that includes, at a minimum--

(aa) the preliminary findings under subclause (I);

(bb) the methods used to develop the findings; and

(cc) an explanation of the activities expected to occur that could cause the findings of the report under subclause (I) to be different than the preliminary findings.

**(III) Availability of information**

Information that is developed by the Attorney General or requested by the Attorney General and received from a covered stationary source for the purpose of conducting the review under subclauses(I) and (II) shall be exempt from disclosure under [section 552 of Title 5](#), if such information would pose a threat to national security.

**(xii) Scope**

This subparagraph--

(I) applies only to covered persons; and

(II) does not restrict the dissemination of off-site consequence analysis information by any covered person in any manner or form except in the form of a risk management plan or an electronic data base created by the Administrator from off-site consequence analysis information.

**(xiii) Authorization of appropriations**

There are authorized to be appropriated to the Administrator and the Attorney General such sums as are necessary to carry out this subparagraph (including the regulations promulgated under clause (ii)), to remain available until expended.

**(8) Research on hazard assessments**

The Administrator may collect and publish information on accident scenarios and consequences covering a range of possible events for substances listed under paragraph (3). The Administrator shall establish a program of long-term research to develop and disseminate information on methods and techniques for hazard assessment which may be useful in improving and validating the procedures employed in the preparation of hazard assessments under this subsection.

**(9) Order authority**

(A) In addition to any other action taken, when the Administrator determines that there may be an imminent and substantial endangerment to the human health or welfare or the environment because of an actual or threatened accidental release of a regulated substance, the Administrator may secure such relief as may be necessary to abate such danger or threat, and the district court of the United States in the district in which the threat occurs shall have jurisdiction to grant such relief as the public interest and the equities of the case may require. The Administrator may also, after notice to the State in which the stationary source is located, take other action under this paragraph including, but not limited to, issuing such orders as may be necessary to protect human health. The Administrator shall take action under [section 7603](#) of this title rather than this paragraph whenever the authority of such section is adequate to protect human health and the environment.

(B) Orders issued pursuant to this paragraph may be enforced in an action brought in the appropriate United States district court as if the order were issued under [section 7603](#) of this title.

(C) Within 180 days after November 15, 1990, the Administrator shall publish guidance for using the order authorities established by this paragraph. Such guidance shall provide for the coordinated use of the authorities of this paragraph with other emergency powers authorized by [section 9606](#) of this title, sections 311(c), 308, 309 and 504(a) of the Federal Water Pollution Control Act [[33 U.S.C.A. §§ 1321\(c\), 1318, 1319 and 1364\(a\)](#)], sections 3007, 3008, 3013, and 7003 of the Solid Waste Disposal Act [[42 U.S.C.A. §§ 6927, 6928, 6934, and 6973](#)], sections 1445 and 1431 of the Safe Drinking Water Act [[42 U.S.C.A. §§ 300j-4 and 300i](#)], sections 5 and 7 of the Toxic Substances Control Act [[15 U.S.C.A. §§ 2604, 2606](#)], and [sections 7413, 7414, and 7603](#) of this title.

**(10) Presidential review**

The President shall conduct a review of release prevention, mitigation and response authorities of the various Federal agencies and shall clarify and coordinate agency responsibilities to assure the most effective and efficient implementation of such authorities and to identify any deficiencies in authority or resources which may exist. The President may utilize the resources and solicit the recommendations of the Chemical Safety and Hazard Investigation Board in conducting such review. At the conclusion of such review, but not later than 24 months after November 15, 1990, the President shall transmit a message to the Congress on the release prevention, mitigation and response activities of the Federal Government making such recommendations for change in law as the President may deem appropriate. Nothing in this paragraph shall be interpreted, construed or applied to authorize the President to modify or reassign release prevention, mitigation or response authorities otherwise established by law.

**(11) State authority**

Nothing in this subsection shall preclude, deny or limit any right of a State or political subdivision thereof to adopt or enforce any regulation, requirement, limitation or standard (including any procedural requirement) that is more stringent than a regulation, requirement, limitation or standard in effect under this subsection or that applies to a substance not subject to this subsection.

**(s) Periodic report**

Not later than January 15, 1993 and every 3 years thereafter, the Administrator shall prepare and transmit to the Congress a comprehensive report on the measures taken by the Agency and by the States to implement the provisions of this section. The Administrator shall maintain a database on pollutants and sources subject to the provisions of this section and shall include aggregate information from the database in each annual report. The report shall include, but not be limited to--

(1) a status report on standard-setting under subsections (d) and (f) of this section;



(2) information with respect to compliance with such standards including the costs of compliance experienced by sources in various categories and subcategories;

(3) development and implementation of the national urban air toxics program; and

(4) recommendations of the Chemical Safety and Hazard Investigation Board with respect to the prevention and mitigation of accidental releases.

#### Credits

(July 14, 1955, c. 360, Title I, § 112, as added Dec. 31, 1970, Pub.L. 91-604, § 4(a), 84 Stat. 1685; amended Aug. 7, 1977, Pub.L. 95-95, Title I, §§ 109(d)(2), 110, Title IV, § 401(c), 91 Stat. 701, 703, 791; Nov. 9, 1978, Pub.L. 95-623, § 13(b), 92 Stat. 3458; Nov. 15, 1990, Pub.L. 101-549, Title III, § 301, 104 Stat. 2531; Dec. 4, 1991, Pub.L. 102-187, 105 Stat. 1285; Nov. 10, 1998, Pub.L. 105-362, Title IV, § 402(b), 112 Stat. 3283; Aug. 5, 1999, Pub.L. 106-40, §§ 2, 3(a), 113 Stat. 207.)

#### Editors' Notes

### MEMORANDA OF PRESIDENT

#### DELEGATION OF AUTHORITY TO REVIEW EMERGENCY RELEASE AUTHORITIES AND PREPARE AND TRANSMIT TO THE CONGRESS A MESSAGE CONCERNING SUCH AUTHORITIES

<Aug. 19, 1993, 58 F.R. 52397>

Memorandum for the Administrator of the Environmental Protection Agency

WHEREAS, the Environmental Protection Agency, the agencies and departments that are members of the National Response Team (authorized under Executive Order No. 12580, 52 Fed.Reg. 2923 (1987)) [set out as a note under section 9615 of this title], and other Federal agencies and departments undertake emergency release prevention, mitigation, and response activities pursuant to various authorities;

By the authority vested in me as President by the Constitution and the laws of the United States of America, including section 112(r)(10) of the Clean Air Act (the "Act") (section 7412(r)(10) of title 42 of the United States Code) [subsec. (r)(10) of this section] and section 301 of title 3 of the United States Code [section 301 of Title 3, The President], and in order to provide for the delegation of certain functions under the Act [42 U.S.C.A. § 7401 et seq.], I hereby:

(1) Authorize you, in coordination with agencies and departments that are members of the National Response Team and other appropriate agencies and departments, to conduct a review of release prevention, mitigation, and response authorities of Federal agencies in order to assure the most effective and efficient implementation of such authorities and to identify any deficiencies in authority or resources that may exist, to the extent such review is required by section 112(r)(10) of the Act; and

(2) Authorize you, in coordination with agencies and departments that are members of the National Response Team and other appropriate agencies and departments, to prepare and transmit a message to the Congress concerning the release prevention, mitigation, and response activities of the Federal Government with such recommendations for change in law as you deem appropriate, to the extent such message is required by section 112(r)(10) of the Act.

The authority delegated by this memorandum may be further redelegated within the Environmental Protection Agency.

You are hereby authorized and directed to publish this memorandum in the **Federal Register**.

WILLIAM J. CLINTON

**DELEGATION OF AUTHORITY TO CONDUCT ASSESSMENTS AND PROMULGATE  
REGULATIONS ON PUBLIC ACCESS TO OFF-SITE CONSEQUENCE ANALYSIS INFORMATION**

<Jan. 27, 2000, [65 F.R. 8631](#)>

Memorandum for the Attorney General[,] the Administrator of the Environmental Protection Agency[,] and the Director of the Office of Management and Budget

By the authority vested in me as President by the Constitution and laws of the United States of America, including section 112(r)(7)(H) of the Clean Air Act (“Act”) (42 U.S.C. 7412(r)(7)(H)) [subsec. (r)(7)(H) of this section], as added by section 3 of the Chemical Safety Information, Site Security and Fuels Regulatory Relief Act ([Public Law 106-40](#)), and [section 301 of title 3, United States Code](#), I hereby delegate to:

(1) the Attorney General the authority vested in the President under section 112(r)(7)(H)(i)(II)(aa) of the Act [subsec. (r)(7)(H)(i)(II)(aa) of this section] to assess the increased risk of terrorist and other criminal activity associated with the posting of off-site consequence analysis information on the Internet;

(2) the Administrator of the Environmental Protection Agency (EPA) the authority vested in the President under section 112(r)(7)(H)(ii)(I)(bb) of the Act [subsec. (r)(7)(H)(ii)(I)(bb) of this section] to assess the incentives created by public disclosure of off-site consequence analysis information for reduction in the risk of accidental releases; and

(3) the Attorney General and the Administrator of EPA, jointly, the authority vested in the President under section 112(r)(7)(H)(ii)(II) of the Act [subsec. (r)(7)(H)(ii)(II) of this section] to promulgate regulations, based on these assessments, governing the distribution of off-site consequence analysis information. These regulations, in proposed and final form, shall be subject to review and approval by the Director of the Office of Management and Budget.

The Administrator of EPA is authorized and directed to publish this memorandum in the Federal Register.

WILLIAM J. CLINTON

**PRESIDENTIAL MEMORANDUM**

<Dec. 21, 2011, [76 F.R. 80727](#)>

**FLEXIBLE IMPLEMENTATION OF THE MERCURY AND AIR TOXICS STANDARDS RULE**

Memorandum for the Administrator of the Environmental Protection Agency

Today's issuance, by the Environmental Protection Agency (EPA), of the final Mercury and Air Toxics Standards rule for power plants (the “MATS Rule”) represents a major step forward in my Administration's efforts to protect public health and the environment.

This rule, issued after careful consideration of public comments, prescribes standards under section 112 of the Clean Air Act to control emissions of mercury and other toxic air pollutants from power plants, which collectively are among the largest sources of such pollution in the United States. The EPA estimates that by substantially reducing emissions of pollutants that contribute to neurological damage, cancer, respiratory illnesses, and other health risks, the MATS Rule will produce major health benefits for millions of Americans—including children, older Americans, and other vulnerable populations. Consistent with [Executive Order 13563](#) (Improving Regulation and Regulatory Review), the estimated benefits of the MATS Rule far exceed the estimated costs.

The MATS Rule can be implemented through the use of demonstrated, existing pollution control technologies. The United States is a global market leader in the design and manufacture of these technologies, and it is anticipated that U.S. firms and workers will provide much of the equipment and labor needed to meet the substantial investments in pollution control that the standards are expected to spur.

These new standards will promote the transition to a cleaner and more efficient U.S. electric power system. This system as a whole is critical infrastructure that plays a key role in the functioning of all facets of the U.S. economy, and maintaining its stability and reliability is of critical importance. It is therefore crucial that implementation of the MATS Rule proceed in a cost-effective manner that ensures electric reliability.

Analyses conducted by the EPA and the Department of Energy (DOE) indicate that the MATS Rule is not anticipated to compromise electric generating resource adequacy in any region of the country. The Clean Air Act offers a number of implementation flexibilities, and the EPA has a long and successful history of using those flexibilities to ensure a smooth transition to cleaner technologies.

The Clean Air Act provides 3 years from the effective date of the MATS Rule for sources to comply with its requirements. In addition, section 112(i)(3)(B) of the Act allows the issuance of a permit granting a source up to one additional year where necessary for the installation of controls. As you stated in the preamble to the MATS Rule, this additional fourth year should be broadly available to sources, consistent with the requirements of the law.

The EPA has concluded that 4 years should generally be sufficient to install the necessary emission control equipment, and DOE has issued analysis consistent with that conclusion. While more time is generally not expected to be needed, the Clean Air Act offers other important flexibilities as well. For example, section 113(a) of the Act provides the EPA with flexibility to bring sources into compliance over the course of an additional year, should unusual circumstances arise that warrant such flexibility.

To address any concerns with respect to electric reliability while assuring MATS' public health benefits, I direct you to take the following actions:

1. Building on the information and guidance that you have provided to the public, relevant stakeholders, and permitting authorities in the preamble of the MATS Rule, work with State and local permitting authorities to make the additional year for compliance with the MATS Rule provided under section 112(i)(3)(B) of the Clean Air Act broadly available to sources, consistent with law, and to invoke this flexibility expeditiously where justified.
2. Promote early, coordinated, and orderly planning and execution of the measures needed to implement the MATS Rule while maintaining the reliability of the electric power system. Consistent with [Executive Order 13563](#), this process should be designed to “promote predictability and reduce uncertainty,” and should include engagement and coordination with DOE, the Federal Energy Regulatory Commission, State utility regulators, Regional Transmission Organizations, the North American Electric Reliability Corporation and regional electric reliability organizations, other grid planning authorities, electric utilities, and other stakeholders, as appropriate.
3. Make available to the public, including relevant stakeholders, information concerning any anticipated use of authorities: (a) under section 112(i)(3)(B) of the Clean Air Act in the event that additional time to comply with the MATS Rule is necessary for

the installation of technology; and (b) under section 113(a) of the Clean Air Act in the event that additional time to comply with the MATS Rule is necessary to address a specific and documented electric reliability issue. This information should describe the process for working with entities with relevant expertise to identify circumstances where electric reliability concerns might justify allowing additional time to comply.

This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

You are hereby authorized and directed to publish this memorandum in the Federal Register.

BARACK OBAMA

#### Notes of Decisions (71)

#### Footnotes

- 1 So in original. Probably should be “effects”.
- 2 So in original.
- 3 So in original. Probably should be “section”.
- 4 So in original. Probably should be paragraph “(7)(B)”.
- 5 So in original. Probably should be “subparagraph”.

42 U.S.C.A. § 7412, 42 USCA § 7412

Current through P.L. 112-174 (excluding P.L. 112-140, 112-141, and 112-166) approved 9-20-12.

United States Code Annotated

Title 42. The Public Health and Welfare

Chapter 85. Air Pollution Prevention and Control (Refs & Annos)

Subchapter I. Programs and Activities

Part A. Air Quality and Emissions Limitations (Refs & Annos)

42 U.S.C.A. § 7414

§ 7414. Recordkeeping, inspections, monitoring, and entry

Currentness

(a) Authority of Administrator or authorized representative

For the purpose (i) of developing or assisting in the development of any implementation plan under [section 7410](#) or [section 7411\(d\)](#) of this title, any standard of performance under [section 7411](#) of this title, any emission standard under [section 7412](#) of this title,,<sup>1</sup> or any regulation of solid waste combustion under [section 7429](#) of this title, or any regulation under [section 7429](#) of this title (relating to solid waste combustion), (ii) of determining whether any person is in violation of any such standard or any requirement of such a plan, or (iii) carrying out any provision of this chapter (except a provision of subchapter II of this chapter with respect to a manufacturer of new motor vehicles or new motor vehicle engines)--

(1) the Administrator may require any person who owns or operates any emission source, who manufactures emission control equipment or process equipment, who the Administrator believes may have information necessary for the purposes set forth in this subsection, or who is subject to any requirement of this chapter (other than a manufacturer subject to the provisions of [section 7525\(c\)](#) or [7542](#) of this title with respect to a provision of subchapter II of this chapter) on a one-time, periodic or continuous basis to--

(A) establish and maintain such records;

(B) make such reports;

(C) install, use, and maintain such monitoring equipment, and use such audit procedures, or methods;

(D) sample such emissions (in accordance with such procedures or methods, at such locations, at such intervals, during such periods and in such manner as the Administrator shall prescribe);

(E) keep records on control equipment parameters, production variables or other indirect data when direct monitoring of emissions is impractical;

(F) submit compliance certifications in accordance with subsection (a)(3) of this section; and

(G) provide such other information as the Administrator may reasonably require; and

(2) the Administrator or his authorized representative, upon presentation of his credentials--

(A) shall have a right of entry to, upon, or through any premises of such person or in which any records required to be maintained under paragraph (1) of this section are located, and

(B) may at reasonable times have access to and copy any records, inspect any monitoring equipment or method required under paragraph (1), and sample any emissions which such person is required to sample under paragraph (1).<sup>2</sup>

(3) The<sup>3</sup> Administrator shall in the case of any person which is the owner or operator of a major stationary source, and may, in the case of any other person, require enhanced monitoring and submission of compliance certifications. Compliance certifications shall include (A) identification of the applicable requirement that is the basis of the certification, (B) the method used for determining the compliance status of the source, (C) the compliance status, (D) whether compliance is continuous or intermittent, (E) such other facts as the Administrator may require. Compliance certifications and monitoring data shall be subject to subsection (c) of this section. Submission of a compliance certification shall in no way limit the Administrator's authorities to investigate or otherwise implement this chapter. The Administrator shall promulgate rules to provide guidance and to implement this paragraph within 2 years after November 15, 1990.

(b) State enforcement

(1) Each State may develop and submit to the Administrator a procedure for carrying out this section in such State. If the Administrator finds the State procedure is adequate, he may delegate to such State any authority he has to carry out this section.

(2) Nothing in this subsection shall prohibit the Administrator from carrying out this section in a State.

(c) Availability of records, reports, and information to public; disclosure of trade secrets

Any records, reports or information obtained under subsection (a) of this section shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that records, reports, or information, or particular part thereof, (other than emission data) to which the Administrator has access under this section if made public, would divulge methods or processes entitled to protection as trade secrets of such person, the Administrator shall consider such record, report, or information or particular portion thereof confidential in accordance with the purposes of [section 1905 of Title 18](#), except that such record, report, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this chapter or when relevant in any proceeding under this chapter.

(d) Notice of proposed entry, inspection, or monitoring

(1) In the case of any emission standard or limitation or other requirement which is adopted by a State, as part of an applicable implementation plan or as part of an order under [section 7413\(d\)](#) of this title, before carrying out an entry, inspection, or monitoring under paragraph (2) of subsection (a) of this section with respect to such standard, limitation, or other requirement, the Administrator (or his representatives) shall provide the State air pollution control agency with reasonable prior notice of such

action, indicating the purpose of such action. No State agency which receives notice under this paragraph of an action proposed to be taken may use the information contained in the notice to inform the person whose property is proposed to be affected of the proposed action. If the Administrator has reasonable basis for believing that a State agency is so using or will so use such information, notice to the agency under this paragraph is not required until such time as the Administrator determines the agency will no longer so use information contained in a notice under this paragraph. Nothing in this section shall be construed to require notification to any State agency of any action taken by the Administrator with respect to any standard, limitation, or other requirement which is not part of an applicable implementation plan or which was promulgated by the Administrator under [section 7410\(c\)](#) of this title.

(2) Nothing in paragraph (1) shall be construed to provide that any failure of the Administrator to comply with the requirements of such paragraph shall be a defense in any enforcement action brought by the Administrator or shall make inadmissible as evidence in any such action any information or material obtained notwithstanding such failure to comply with such requirements.

#### Credits

(July 14, 1955, c. 360, Title I, § 114, as added Dec. 31, 1970, Pub.L. 91-604, § 4(a), 84 Stat. 1687; amended June 22, 1974, Pub.L. 93-319, § 6(a)(4), 88 Stat. 259; Aug. 7, 1977, Pub.L. 95-95, Title I, §§ 109(d)(3), 113, Title III, § 305(d), 91 Stat. 701, 709, 776; Nov. 16, 1977, Pub.L. 95-190, § 14(a)(22), (23), 91 Stat. 1400; Nov. 15, 1990, Pub.L. 101-549, Title III, § 302(c), Title VII, § 702(a), (b), 104 Stat. 2574, 2680, 2681.)

#### [Notes of Decisions \(34\)](#)

#### Footnotes

- 1 So in original.
- 2 The period probably should be “; and”.
- 3 So in original. Probably should not be capitalized.

42 U.S.C.A. § 7414, 42 USCA § 7414

Current through P.L. 112-174 (excluding P.L. 112-140, 112-141, and 112-166) approved 9-20-12.

United States Code Annotated  
Title 42. The Public Health and Welfare  
Chapter 85. Air Pollution Prevention and Control (Refs & Annos)  
Subchapter III. General Provisions

42 U.S.C.A. § 7607

§ 7607. Administrative proceedings and judicial review

Currentness

(a) Administrative subpoenas; confidentiality; witnesses

In connection with any determination under [section 7410\(f\)](#) of this title, or for purposes of obtaining information under [section 7521\(b\)\(4\)](#) or [7545\(c\)\(3\)](#) of this title, any investigation, monitoring, reporting requirement, entry, compliance inspection, or administrative enforcement proceeding under the <sup>1</sup> chapter (including but not limited to [section 7413](#), [section 7414](#), [section 7420](#), [section 7429](#), [section 7477](#), [section 7524](#), [section 7525](#), [section 7542](#), [section 7603](#), or [section 7606](#) of this title),<sup>2</sup> the Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and he may administer oaths. Except for emission data, upon a showing satisfactory to the Administrator by such owner or operator that such papers, books, documents, or information or particular part thereof, if made public, would divulge trade secrets or secret processes of such owner or operator, the Administrator shall consider such record, report, or information or particular portion thereof confidential in accordance with the purposes of [section 1905 of Title 18](#), except that such paper, book, document, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this chapter, to persons carrying out the National Academy of Sciences' study and investigation provided for in [section 7521\(c\)](#) of this title, or when relevant in any proceeding under this chapter. Witnesses summoned shall be paid the same fees and mileage that are paid witnesses in the courts of the United States. In case of contumacy or refusal to obey a subpoena served upon any person under this subparagraph, the district court of the United States for any district in which such person is found or resides or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the Administrator to appear and produce papers, books, and documents before the Administrator, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

(b) Judicial review

(1) A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard, any emission standard or requirement under [section 7412](#) of this title, any standard of performance or requirement under [section 7411](#) of this title,<sup>2</sup> any standard under [section 7521](#) of this title (other than a standard required to be prescribed under [section 7521\(b\)\(1\)](#) of this title), any determination under [section 7521\(b\)\(5\)](#) of this title, any control or prohibition under [section 7545](#) of this title, any standard under [section 7571](#) of this title, any rule issued under [section 7413](#), [7419](#), or under [section 7420](#) of this title, or any other nationally applicable regulations promulgated, or final action taken, by the Administrator under this chapter may be filed only in the United States Court of Appeals for the District of Columbia. A petition for review of the Administrator's action in approving or promulgating any implementation plan under [section 7410](#) of this title or [section 7411\(d\)](#) of this title, any order under [section 7411\(j\)](#) of this title, under [section 7412](#) of this title,<sup>2</sup> under [section 7419](#) of this title, or under [section 7420](#) of this title, or his action under [section 1857c-10\(c\)\(2\)\(A\)](#), (B), or (C) of this title (as in effect before August 7, 1977) or under regulations thereunder, or revising regulations for enhanced monitoring and compliance certification programs under [section 7414\(a\)\(3\)](#) of this title, or any other final action of the Administrator under this chapter (including any



denial or disapproval by the Administrator under subchapter I of this chapter) which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit. Notwithstanding the preceding sentence a petition for review of any action referred to in such sentence may be filed only in the United States Court of Appeals for the District of Columbia if such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination. Any petition for review under this subsection shall be filed within sixty days from the date notice of such promulgation, approval, or action appears in the Federal Register, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review under this subsection shall be filed within sixty days after such grounds arise. The filing of a petition for reconsideration by the Administrator of any otherwise final rule or action shall not affect the finality of such rule or action for purposes of judicial review nor extend the time within which a petition for judicial review of such rule or action under this section may be filed, and shall not postpone the effectiveness of such rule or action.

(2) Action of the Administrator with respect to which review could have been obtained under paragraph (1) shall not be subject to judicial review in civil or criminal proceedings for enforcement. Where a final decision by the Administrator defers performance of any nondiscretionary statutory action to a later time, any person may challenge the deferral pursuant to paragraph (1).

(c) Additional evidence

In any judicial proceeding in which review is sought of a determination under this chapter required to be made on the record after notice and opportunity for hearing, if any party applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, in such manner and upon such terms and conditions as to <sup>3</sup> the court may deem proper. The Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken and he shall file such modified or new findings, and his recommendation, if any, for the modification or setting aside of his original determination, with the return of such additional evidence.

(d) Rulemaking

(1) This subsection applies to--

(A) the promulgation or revision of any national ambient air quality standard under [section 7409](#) of this title,

(B) the promulgation or revision of an implementation plan by the Administrator under [section 7410\(c\)](#) of this title,

(C) the promulgation or revision of any standard of performance under [section 7411](#) of this title, or emission standard or limitation under [section 7412\(d\)](#) of this title, any standard under [section 7412\(f\)](#) of this title, or any regulation under [section 7412\(g\)\(1\)\(D\) and \(F\)](#) of this title, or any regulation under [section 7412\(m\) or \(n\)](#) of this title,

(D) the promulgation of any requirement for solid waste combustion under [section 7429](#) of this title,

(E) the promulgation or revision of any regulation pertaining to any fuel or fuel additive under [section 7545](#) of this title,

- (F) the promulgation or revision of any aircraft emission standard under [section 7571](#) of this title,
- (G) the promulgation or revision of any regulation under subchapter IV-A of this chapter (relating to control of acid deposition),
- (H) promulgation or revision of regulations pertaining to primary nonferrous smelter orders under [section 7419](#) of this title (but not including the granting or denying of any such order),
- (I) promulgation or revision of regulations under subchapter VI of this chapter (relating to stratosphere and ozone protection),
- (J) promulgation or revision of regulations under part C of subchapter I of this chapter (relating to prevention of significant deterioration of air quality and protection of visibility),
- (K) promulgation or revision of regulations under [section 7521](#) of this title and test procedures for new motor vehicles or engines under [section 7525](#) of this title, and the revision of a standard under [section 7521\(a\)\(3\)](#) of this title,
- (L) promulgation or revision of regulations for noncompliance penalties under [section 7420](#) of this title,
- (M) promulgation or revision of any regulations promulgated under [section 7541](#) of this title (relating to warranties and compliance by vehicles in actual use),
- (N) action of the Administrator under [section 7426](#) of this title (relating to interstate pollution abatement),
- (O) the promulgation or revision of any regulation pertaining to consumer and commercial products under [section 7511b\(e\)](#) of this title,
- (P) the promulgation or revision of any regulation pertaining to field citations under [section 7413\(d\)\(3\)](#) of this title,
- (Q) the promulgation or revision of any regulation pertaining to urban buses or the clean-fuel vehicle, clean-fuel fleet, and clean fuel programs under part C of subchapter II of this chapter,
- (R) the promulgation or revision of any regulation pertaining to nonroad engines or nonroad vehicles under [section 7547](#) of this title,
- (S) the promulgation or revision of any regulation relating to motor vehicle compliance program fees under [section 7552](#) of this title,

- (T) the promulgation or revision of any regulation under subchapter IV-A of this chapter (relating to acid deposition),
- (U) the promulgation or revision of any regulation under [section 7511b\(f\)](#) of this title pertaining to marine vessels, and
- (V) such other actions as the Administrator may determine.

The provisions of [section 553](#) through [557](#) and [section 706 of Title 5](#) shall not, except as expressly provided in this subsection, apply to actions to which this subsection applies. This subsection shall not apply in the case of any rule or circumstance referred to in subparagraphs (A) or (B) of subsection 553(b) of Title 5.

(2) Not later than the date of proposal of any action to which this subsection applies, the Administrator shall establish a rulemaking docket for such action (hereinafter in this subsection referred to as a “rule”). Whenever a rule applies only within a particular State, a second (identical) docket shall be simultaneously established in the appropriate regional office of the Environmental Protection Agency.

(3) In the case of any rule to which this subsection applies, notice of proposed rulemaking shall be published in the Federal Register, as provided under [section 553\(b\) of Title 5](#), shall be accompanied by a statement of its basis and purpose and shall specify the period available for public comment (hereinafter referred to as the “comment period”). The notice of proposed rulemaking shall also state the docket number, the location or locations of the docket, and the times it will be open to public inspection. The statement of basis and purpose shall include a summary of--

- (A) the factual data on which the proposed rule is based;
- (B) the methodology used in obtaining the data and in analyzing the data; and
- (C) the major legal interpretations and policy considerations underlying the proposed rule.

The statement shall also set forth or summarize and provide a reference to any pertinent findings, recommendations, and comments by the Scientific Review Committee established under [section 7409\(d\)](#) of this title and the National Academy of Sciences, and, if the proposal differs in any important respect from any of these recommendations, an explanation of the reasons for such differences. All data, information, and documents referred to in this paragraph on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule.

(4)(A) The rulemaking docket required under paragraph (2) shall be open for inspection by the public at reasonable times specified in the notice of proposed rulemaking. Any person may copy documents contained in the docket. The Administrator shall provide copying facilities which may be used at the expense of the person seeking copies, but the Administrator may waive or reduce such expenses in such instances as the public interest requires. Any person may request copies by mail if the person pays the expenses, including personnel costs to do the copying.

(B)(i) Promptly upon receipt by the agency, all written comments and documentary information on the proposed rule received from any person for inclusion in the docket during the comment period shall be placed in the docket. The transcript of public hearings, if any, on the proposed rule shall also be included in the docket promptly upon receipt from the person who transcribed

such hearings. All documents which become available after the proposed rule has been published and which the Administrator determines are of central relevance to the rulemaking shall be placed in the docket as soon as possible after their availability.

(ii) The drafts of proposed rules submitted by the Administrator to the Office of Management and Budget for any interagency review process prior to proposal of any such rule, all documents accompanying such drafts, and all written comments thereon by other agencies and all written responses to such written comments by the Administrator shall be placed in the docket no later than the date of proposal of the rule. The drafts of the final rule submitted for such review process prior to promulgation and all such written comments thereon, all documents accompanying such drafts, and written responses thereto shall be placed in the docket no later than the date of promulgation.

(5) In promulgating a rule to which this subsection applies (i) the Administrator shall allow any person to submit written comments, data, or documentary information; (ii) the Administrator shall give interested persons an opportunity for the oral presentation of data, views, or arguments, in addition to an opportunity to make written submissions; (iii) a transcript shall be kept of any oral presentation; and (iv) the Administrator shall keep the record of such proceeding open for thirty days after completion of the proceeding to provide an opportunity for submission of rebuttal and supplementary information.

(6)(A) The promulgated rule shall be accompanied by (i) a statement of basis and purpose like that referred to in paragraph (3) with respect to a proposed rule and (ii) an explanation of the reasons for any major changes in the promulgated rule from the proposed rule.

(B) The promulgated rule shall also be accompanied by a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period.

(C) The promulgated rule may not be based (in part or whole) on any information or data which has not been placed in the docket as of the date of such promulgation.

(7)(A) The record for judicial review shall consist exclusively of the material referred to in paragraph (3), clause (i) of paragraph (4)(B), and subparagraphs (A) and (B) of paragraph (6).

(B) Only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. If the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within such time or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule, the Administrator shall convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed. If the Administrator refuses to convene such a proceeding, such person may seek review of such refusal in the United States court of appeals for the appropriate circuit (as provided in subsection (b) of this section). Such reconsideration shall not postpone the effectiveness of the rule. The effectiveness of the rule may be stayed during such reconsideration, however, by the Administrator or the court for a period not to exceed three months.

(8) The sole forum for challenging procedural determinations made by the Administrator under this subsection shall be in the United States court of appeals for the appropriate circuit (as provided in subsection (b) of this section) at the time of the substantive review of the rule. No interlocutory appeals shall be permitted with respect to such procedural determinations. In

reviewing alleged procedural errors, the court may invalidate the rule only if the errors were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made.

(9) In the case of review of any action of the Administrator to which this subsection applies, the court may reverse any such action found to be--

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right; or

(D) without observance of procedure required by law, if (i) such failure to observe such procedure is arbitrary or capricious, (ii) the requirement of paragraph (7)(B) has been met, and (iii) the condition of the last sentence of paragraph (8) is met.

(10) Each statutory deadline for promulgation of rules to which this subsection applies which requires promulgation less than six months after date of proposal may be extended to not more than six months after date of proposal by the Administrator upon a determination that such extension is necessary to afford the public, and the agency, adequate opportunity to carry out the purposes of this subsection.

(11) The requirements of this subsection shall take effect with respect to any rule the proposal of which occurs after ninety days after August 7, 1977.

(e) Other methods of judicial review not authorized

Nothing in this chapter shall be construed to authorize judicial review of regulations or orders of the Administrator under this chapter, except as provided in this section.

(f) Costs

In any judicial proceeding under this section, the court may award costs of litigation (including reasonable attorney and expert witness fees) whenever it determines that such award is appropriate.

(g) Stay, injunction, or similar relief in proceedings relating to noncompliance penalties

In any action respecting the promulgation of regulations under [section 7420](#) of this title or the administration or enforcement of [section 7420](#) of this title no court shall grant any stay, injunctive, or similar relief before final judgment by such court in such action.

(h) Public participation

It is the intent of Congress that, consistent with the policy of subchapter II of chapter 5 of Title 5, the Administrator in promulgating any regulation under this chapter, including a regulation subject to a deadline, shall ensure a reasonable period for public participation of at least 30 days, except as otherwise expressly provided in section<sup>4</sup> 7407(d), 7502(a), 7511(a) and (b), and 7512(a) and (b) of this title.

#### Credits

(July 14, 1955, c. 360, Title III, § 307, as added Dec. 31, 1970, Pub.L. 91-604, § 12(a), 84 Stat. 1707; amended Nov. 18, 1971, Pub.L. 92-157, Title III, § 302(a), 85 Stat. 464; June 22, 1974, Pub.L. 93-319, § 6(c), 88 Stat. 259; Aug. 7, 1977, Pub.L. 95-95, Title III, §§ 303(d), 305(a), (c), (f)-(h), 91 Stat. 772, 776, 777; Nov. 16, 1977, Pub.L. 95-190, § 14(a)(79), (80), 91 Stat. 1404; Nov. 15, 1990, Pub.L. 101-549, Title I, §§ 108(p), 110(5), Title III, § 302(g), (h), Title VII, §§ 702(c), 703, 706, 707(h), 710(b), 104 Stat. 2469, 2470, 2574, 2681-2684.)

#### Notes of Decisions (283)

#### Footnotes

- 1 So in original. Probably should be “this”.
- 2 So in original.
- 3 So in original. The word “to” probably should not appear.
- 4 So in original. Probably should be “sections”.

42 U.S.C.A. § 7607, 42 USCA § 7607

Current through P.L. 112-174 (excluding P.L. 112-140, 112-141, and 112-166) approved 9-20-12.

United States Code Annotated  
Title 42. The Public Health and Welfare  
Chapter 85. Air Pollution Prevention and Control (Refs & Annos)  
Subchapter V. Permits (Refs & Annos)

42 U.S.C.A. § 7661c

§ 7661c. Permit requirements and conditions

Currentness

(a) Conditions

Each permit issued under this subchapter shall include enforceable emission limitations and standards, a schedule of compliance, a requirement that the permittee submit to the permitting authority, no less often than every 6 months, the results of any required monitoring, and such other conditions as are necessary to assure compliance with applicable requirements of this chapter, including the requirements of the applicable implementation plan.

(b) Monitoring and analysis

The Administrator may by rule prescribe procedures and methods for determining compliance and for monitoring and analysis of pollutants regulated under this chapter, but continuous emissions monitoring need not be required if alternative methods are available that provide sufficiently reliable and timely information for determining compliance. Nothing in this subsection shall be construed to affect any continuous emissions monitoring requirement of subchapter IV-A of this chapter, or where required elsewhere in this chapter.

(c) Inspection, entry, monitoring, certification, and reporting

Each permit issued under this subchapter shall set forth inspection, entry, monitoring, compliance certification, and reporting requirements to assure compliance with the permit terms and conditions. Such monitoring and reporting requirements shall conform to any applicable regulation under subsection (b) of this section. Any report required to be submitted by a permit issued to a corporation under this subchapter shall be signed by a responsible corporate official, who shall certify its accuracy.

(d) General permits

The permitting authority may, after notice and opportunity for public hearing, issue a general permit covering numerous similar sources. Any general permit shall comply with all requirements applicable to permits under this subchapter. No source covered by a general permit shall thereby be relieved from the obligation to file an application under [section 7661b](#) of this title.

(e) Temporary sources

The permitting authority may issue a single permit authorizing emissions from similar operations at multiple temporary locations. No such permit shall be issued unless it includes conditions that will assure compliance with all the requirements of this chapter at all authorized locations, including, but not limited to, ambient standards and compliance with any applicable increment or visibility requirements under part C of subchapter I of this chapter. Any such permit shall in addition require the

owner or operator to notify the permitting authority in advance of each change in location. The permitting authority may require a separate permit fee for operations at each location.

(f) Permit shield

Compliance with a permit issued in accordance with this subchapter shall be deemed compliance with [section 7661a](#) of this title. Except as otherwise provided by the Administrator by rule, the permit may also provide that compliance with the permit shall be deemed compliance with other applicable provisions of this chapter that relate to the permittee if--

(1) the permit includes the applicable requirements of such provisions, or

(2) the permitting authority in acting on the permit application makes a determination relating to the permittee that such other provisions (which shall be referred to in such determination) are not applicable and the permit includes the determination or a concise summary thereof.

Nothing in the preceding sentence shall alter or affect the provisions of [section 7603](#) of this title, including the authority of the Administrator under that section.

**Credits**

(July 14, 1955, c. 360, Title V, § 504, as added Nov. 15, 1990, [Pub.L. 101-549, Title V, § 501](#), 104 Stat. 2642.)

[Notes of Decisions \(16\)](#)

42 U.S.C.A. § 7661c, 42 USCA § 7661c

Current through P.L. 112-174 (excluding P.L. 112-140, 112-141, and 112-166) approved 9-20-12.

End of Document

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Code of Federal Regulations

Title 40. Protection of Environment

Chapter I. Environmental Protection Agency (Refs & Annos)

Subchapter C. Air Programs

Part 60. Standards of Performance for New Stationary Sources (Refs & Annos)

Subpart Da. Standards of Performance for Electric Utility Steam Generating (Refs & Annos)

40 C.F.R. § 60.42Da

§ 60.42Da Standards for particulate matter (PM).

Effective: April 16, 2012

Currentness

(a) Except as provided in paragraph (f) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, an owner or operator of an affected facility shall not cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction, or modification commenced before March 1, 2005, any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input.

(b) Except as provided in paragraphs (b)(1) and (b)(2) of this section, on and after the date the initial PM performance test is completed or required to be completed under § 60.8, whichever date comes first, an owner or operator of an affected facility shall not cause to be discharged into the atmosphere any gases which exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(1) An owner or operator of an affected facility that elects to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart is exempt from the opacity standard specified in this paragraph (b) of this section.

(2) An owner or operator of an affected facility that combusts only natural gas is exempt from the opacity standard specified in paragraph (b) of this section.

(c) Except as provided in paragraphs (d) and (f) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification after February 28, 2005, but before May 4, 2011, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of either:

(1) 18 ng/J (0.14 lb/MWh) gross energy output; or

(2) 6.4 ng/J (0.015 lb/MMBtu) heat input derived from the combustion of solid, liquid, or gaseous fuel.

(d) As an alternative to meeting the requirements of paragraph (c) of this section, the owner or operator of an affected facility for which construction, reconstruction, or modification commenced after February 28, 2005, but before May 4, 2011, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to

be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of:

- (1) 13 ng/J (0.030 lb/MMBtu) heat input derived from the combustion of solid, liquid, or gaseous fuel, and
- (2) For an affected facility that commenced construction or reconstruction, 0.1 percent of the combustion concentration determined according to the procedure in § 60.48Da(o)(5) (99.9 percent reduction) when combusting solid, liquid, or gaseous fuel, or
- (3) For an affected facility that commenced modification, 0.2 percent of the combustion concentration determined according to the procedure in § 60.48Da(o)(5) (99.8 percent reduction) when combusting solid, liquid, or gaseous fuel.

(e) Except as provided in paragraph (f) of this section, the owner or operator of an affected facility that commenced construction, reconstruction, or modification commenced after May 3, 2011, shall meet the requirements specified in paragraphs (e)(1) and (2) of this section.

(1) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator shall cause to be discharged into the atmosphere from that affected facility at all times except during periods of startup and shutdown, any gases that contain PM in excess of the applicable emissions limit specified in paragraphs (e)(1)(i) or (ii) of this section.

(i) For an affected facility which commenced construction or reconstruction, any gases that contain PM in excess of either:

(A) 11 ng/J (0.090 lb/MWh) gross energy output; or

(B) 12 ng/J (0.097 lb/MWh) net energy output.

(ii) For an affected facility which commenced modification, any gases that contain PM in excess of 13 ng/J (0.015 lb/MMBtu) heat input.

(2) During periods of startup and shutdown, the owner or operator shall meet the work practice standards specified in Table 3 to subpart UUUUU of part 63.

(f) An owner or operator of an affected facility that meets the conditions in either paragraphs (f)(1) or (2) of this section is exempt from the PM emissions limits in this section.

(1) The affected facility combusts only gaseous or liquid fuels (excluding residual oil) with potential SO<sub>2</sub> emissions rates of 26 ng/J (0.060 lb/MMBtu) or less, and that does not use a post-combustion technology to reduce emissions of SO<sub>2</sub> or PM.

(2) The affected facility is operated under a PM commercial demonstration permit issued by the Administrator according to the provisions of § 60.47Da.

**Credits**

[74 FR 5079, Jan. 28, 2009; 77 FR 9450, Feb. 16, 2012]

SOURCE: 36 FR 24877, Dec. 23, 1971; 50 FR 36834, Sept. 9, 1985; 52 FR 37874, Oct. 9, 1987; 53 FR 2675, Jan. 29, 1988; 57 FR 32338, July 21, 1992; 58 FR 40591, July 29, 1993; 60 FR 65384, Dec. 19, 1995; 62 FR 8328, Feb. 24, 1997; 62 FR 48379, Sept. 15, 1997; 64 FR 7463, Feb. 12, 1999; 65 FR 78275, Dec. 14, 2000; 72 FR 32722, June 13, 2007; 72 FR 59204, Oct. 19, 2007; 77 FR 9448, Feb. 16, 2012, unless otherwise noted.

AUTHORITY: 42 U.S.C. 7401 et seq.

**Notes of Decisions (27)**

Current through October 18, 2012; 77 FR 64052

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Code of Federal Regulations

Title 40. Protection of Environment

Chapter I. Environmental Protection Agency (Refs & Annos)

Subchapter C. Air Programs

Part 64. Compliance Assurance Monitoring (Refs & Annos)

40 C.F.R. § 64.2

§ 64.2 Applicability.

Currentness

(a) General applicability. Except for backup utility units that are exempt under paragraph (b)(2) of this section, the requirements of this part shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria:

(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section;

(2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and

(3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit," as defined in § 64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.

(b) Exemptions--

(1) Exempt emission limitations or standards. The requirements of this part shall not apply to any of the following emission limitations or standards:

(i) Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act.

(ii) Stratospheric ozone protection requirements under title VI of the Act.

(iii) Acid Rain Program requirements pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act.

(iv) Emission limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Act that allows for trading emissions within a source or between sources.

(v) An emissions cap that meets the requirements specified in § 70.4(b)(12) or § 71.6(a)(13)(iii) of this chapter.

(vi) Emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in § 64.1. The exemption provided in this paragraph (b)(1)(vi) shall not apply if the applicable compliance method includes an assumed control device emission reduction factor that could be affected by the actual operation and maintenance of the control device (such as a surface coating line controlled by an incinerator for which continuous compliance is determined by calculating emissions on the basis of coating records and an assumed control device efficiency factor based on an initial performance test; in this example, this part would apply to the control device and capture system, but not to the remaining elements of the coating line, such as raw material usage).

(2) Exemption for backup utility power emissions units. The requirements of this part shall not apply to a utility unit, as defined in § 72.2 of this chapter, that is municipally-owned if the owner or operator provides documentation in a part 70 or 71 permit application that:

(i) The utility unit is exempt from all monitoring requirements in part 75 (including the appendices thereto) of this chapter;

(ii) The utility unit is operated for the sole purpose of providing electricity during periods of peak electrical demand or emergency situations and will be operated consistent with that purpose throughout the part 70 or 71 permit term. The owner or operator shall provide historical operating data and relevant contractual obligations to document that this criterion is satisfied; and

(iii) The actual emissions from the utility unit, based on the average annual emissions over the last three calendar years of operation (or such shorter time period that is available for units with fewer than three years of operation) are less than 50 percent of the amount in tons per year required for a source to be classified as a major source and are expected to remain so.

SOURCE: 62 FR 54940, Oct. 22, 1997, unless otherwise noted.

AUTHORITY: 42 U.S.C. 7414 and 7661–7661f.

#### Notes of Decisions (4)

Current through October 18, 2012; 77 FR 64052

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Code of Federal Regulations

Title 40. Protection of Environment

Chapter I. Environmental Protection Agency (Refs & Annos)

Subchapter C. Air Programs

Part 70. State Operating Permit Programs (Refs & Annos)

40 C.F.R. § 70.6

§ 70.6 Permit content.

Effective: November 5, 2009

Currentness

<For statute(s) affecting validity, see: [42 USCA § 7401 et seq.](#)>

(a) Standard permit requirements. Each permit issued under this part shall include the following elements:

(1) Emissions limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance. Such requirements and limitations may include ARMs identified by the source in its part 70 permit application as approved by the permitting authority, provided that no ARM shall contravene any terms needed to comply with any otherwise applicable requirement or requirement of this part or circumvent any applicable requirement that would apply as a result of implementing the ARM.

(i) The permit shall specify and reference the origin of and authority for each term or condition, and identify any difference in form as compared to the applicable requirement upon which the term or condition is based.

(ii) The permit shall state that, where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under title IV of the Act, both provisions shall be incorporated into the permit and shall be enforceable by the Administrator.

(iii) If an applicable implementation plan allows a determination of an alternative emission limit at a part 70 source, equivalent to that contained in the plan, to be made in the permit issuance, renewal, or significant modification process, and the State elects to use such process, any permit containing such equivalency determination shall contain provisions to ensure that any resulting emissions limit has been demonstrated to be quantifiable, accountable, enforceable, and based on replicable procedures.

(2) Permit duration. The permitting authority shall issue permits for a fixed term of 5 years in the case of affected sources, and for a term not to exceed 5 years in the case of all other sources. Notwithstanding this requirement, the permitting authority shall issue permits for solid waste incineration units combusting municipal waste subject to standards under section 129(e) of the Act for a period not to exceed 12 years and shall review such permits at least every 5 years.

(3) Monitoring and related recordkeeping and reporting requirements.

(i) Each permit shall contain the following requirements with respect to monitoring:

(A) All monitoring and analysis procedures or test methods required under applicable monitoring and testing requirements, including part 64 of this chapter and any other procedures and methods that may be promulgated pursuant to sections 114(a)(3) or 504(b) of the Act. If more than one monitoring or testing requirement applies, the permit may specify a streamlined set of monitoring or testing provisions provided the specified monitoring or testing is adequate to assure compliance at least to the same extent as the monitoring or testing applicable requirements that are not included in the permit as a result of such streamlining;

(B) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to paragraph (a)(3)(iii) of this section. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Recordkeeping provisions may be sufficient to meet the requirements of this paragraph (a)(3)(i)(B) of this section; and

(C) As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods.

(ii) With respect to recordkeeping, the permit shall incorporate all applicable recordkeeping requirements and require, where applicable, the following:

(A) Records of required monitoring information that include the following:

(1) The date, place as defined in the permit, and time of sampling or measurements;

(2) The date(s) analyses were performed;

(3) The company or entity that performed the analyses;

(4) The analytical techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions as existing at the time of sampling or measurement;

(B) Retention of records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

(iii) With respect to reporting, the permit shall incorporate all applicable reporting requirements and require the following:

(A) Submittal of reports of any required monitoring at least every 6 months. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with § 70.5(d) of this part.

(B) Prompt reporting of deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. The permitting authority shall define “prompt” in relation to the degree and type of deviation likely to occur and the applicable requirements.

(4) A permit condition prohibiting emissions exceeding any allowances that the source lawfully holds under title IV of the Act or the regulations promulgated thereunder.

(i) No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement.

(ii) No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement.

(iii) Any such allowance shall be accounted for according to the procedures established in regulations promulgated under title IV of the Act.

(5) A severability clause to ensure the continued validity of the various permit requirements in the event of a challenge to any portions of the permit.

(6) Provisions stating the following:

(i) The permittee must comply with all conditions of the part 70 permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(ii) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(iii) The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.



(iv) The permit does not convey any property rights of any sort, or any exclusive privilege.

(v) The permittee shall furnish to the permitting authority, within a reasonable time, any information that the permitting authority may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the permitting authority copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

(7) A provision to ensure that a part 70 source pays fees to the permitting authority consistent with the fee schedule approved pursuant to § 70.9 of this part.

(8) Emissions trading. A provision stating that no permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.

(9) Terms and conditions for reasonably anticipated AOSs identified by the source in its application as approved by the permitting authority. Such terms and conditions:

(i) Shall require the source, contemporaneously with making a change from one operating scenario to another, to record in a log at the permitted facility a record of the AOS under which it is operating;

(ii) May extend the permit shield described in paragraph (f) of this section to all terms and conditions under each such AOS; and

(iii) Must ensure that the terms and conditions of each AOS meet all applicable requirements and the requirements of this part. The permitting authority shall not approve a proposed AOS into the part 70 permit until the source has obtained all authorizations required under any applicable requirement relevant to that AOS.

(10) Terms and conditions, if the permit applicant requests them, for the trading of emissions increases and decreases in the permitted facility, to the extent that the applicable requirements provide for trading such increases and decreases without a case-by-case approval of each emissions trade. Such terms and conditions:

(i) Shall include all terms required under paragraphs (a) and (c) of this section to determine compliance;

(ii) May extend the permit shield described in paragraph (f) of this section to all terms and conditions that allow such increases and decreases in emissions; and

(iii) Must meet all applicable requirements and requirements of this part.

(b) Federally-enforceable requirements.

(1) All terms and conditions in a part 70 permit, including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Act.

(2) Notwithstanding paragraph (b)(1) of this section, the permitting authority shall specifically designate as not being federally enforceable under the Act any terms and conditions included in the permit that are not required under the Act or under any of its applicable requirements. Terms and conditions so designated are not subject to the requirements of §§ 70.7, 70.8, or of this part, other than those contained in this paragraph (b) of this section.

(c) Compliance requirements. All part 70 permits shall contain the following elements with respect to compliance:

(1) Consistent with paragraph (a)(3) of this section, compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. Any document (including reports) required by a part 70 permit shall contain a certification by a responsible official that meets the requirements of § 70.5(d) for this part.

(2) Inspection and entry requirements that require that, upon presentation of credentials and other documents as may be required by law, the permittee shall allow the permitting authority or an authorized representative to perform the following:

(i) Enter upon the permittee's premises where a part 70 source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(ii) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(iii) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(iv) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(3) A schedule of compliance consistent with § 70.5(c)(8) of this part.

(4) Progress reports consistent with an applicable schedule of compliance and § 70.5(c)(8) of this part to be submitted at least semiannually, or at a more frequent period if specified in the applicable requirement or by the permitting authority. Such progress reports shall contain the following:

(i) Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

(ii) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

(5) Requirements for compliance certification with terms and conditions contained in the permit, including emission limitations, standards, or work practices. Permits shall include each of the following:

(i) The frequency (not less than annually or such more frequent periods as specified in the applicable requirement or by the permitting authority) of submissions of compliance certifications;

(ii) In accordance with § 70.6(a)(3) of this part, a means for monitoring the compliance of the source with its emissions limitations, standards, and work practices;

(iii) A requirement that the compliance certification include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

(A) The identification of each term or condition of the permit that is the basis of the certification;

(B) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period. Such methods and other means shall include, at a minimum, the methods and means required under paragraph (a)(3) of this section;

(C) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in paragraph (c)(5)(iii)(B) of this section. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under part 64 of this chapter occurred; and

(D) Such other facts as the permitting authority may require to determine the compliance status of the source.

(iv) A requirement that all compliance certifications be submitted to the Administrator as well as to the permitting authority.

(6) Such other provisions as the permitting authority may require.

(d) General permits.

(1) The permitting authority may, after notice and opportunity for public participation provided under § 70.7(h) of this part, issue a general permit covering numerous similar sources. Any general permit shall comply with all requirements applicable to other part 70 permits and shall identify criteria by which sources may qualify for the general permit. To sources that qualify, the permitting authority shall grant the conditions and terms of the general permit. Notwithstanding

the shield provisions of paragraph (f) of this section, the source shall be subject to enforcement action for operation without a part 70 permit if the source is later determined not to qualify for the conditions and terms of the general permit. General permits shall not be authorized for affected sources under the acid rain program unless otherwise provided in regulations promulgated under title IV of the Act.

(2) Part 70 sources that would qualify for a general permit must apply to the permitting authority for coverage under the terms of the general permit or must apply for a part 70 permit consistent with § 70.5 of this part. The permitting authority may, in the general permit, provide for applications which deviate from the requirements of § 70.5 of this part, provided that such applications meet the requirements of title V of the Act, and include all information necessary to determine qualification for, and to assure compliance with, the general permit. Without repeating the public participation procedures required under § 70.7(h) of this part, the permitting authority may grant a source's request for authorization to operate under a general permit, but such a grant shall not be a final permit action for purposes of judicial review.

(e) Temporary sources. The permitting authority may issue a single permit authorizing emissions from similar operations by the same source owner or operator at multiple temporary locations. The operation must be temporary and involve at least one change of location during the term of the permit. No affected source shall be permitted as a temporary source. Permits for temporary sources shall include the following:

(1) Conditions that will assure compliance with all applicable requirements at all authorized locations;

(2) Requirements that the owner or operator notify the permitting authority at least 10 days in advance of each change in location; and

(3) Conditions that assure compliance with all other provisions of this section.

(f) Permit shield.

(1) Except as provided in this part, the permitting authority may expressly include in a part 70 permit a provision stating that compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that:

(i) Such applicable requirements are included and are specifically identified in the permit; or

(ii) The permitting authority, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

(2) A part 70 permit that does not expressly state that a permit shield exists shall be presumed not to provide such a shield.

(3) Nothing in this paragraph or in any part 70 permit shall alter or affect the following:

- (i) The provisions of section 303 of the Act (emergency orders), including the authority of the Administrator under that section;
- (ii) The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
- (iii) The applicable requirements of the acid rain program, consistent with section 408(a) of the Act; or
- (iv) The ability of EPA to obtain information from a source pursuant to section 114 of the Act.

(g) Emergency provision--

(1) Definition. An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(2) Effect of an emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of paragraph (g)(3) of this section are met.

(3) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An emergency occurred and that the permittee can identify the cause(s) of the emergency;

(ii) The permitted facility was at the time being properly operated;

(iii) During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(iv) The permittee submitted notice of the emergency to the permitting authority within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice fulfills the requirement of paragraph (a)(3)(iii) (B) of this section. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(4) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(5) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

**Credits**

[62 FR 54946, Oct. 22, 1997; 66 FR 12876, March 1, 2001; 66 FR 55884, Nov. 5, 2001; 67 FR 58536, Sept. 17, 2002; 68 FR 38523, June 27, 2003; 74 FR 51439, Oct. 6, 2009]

SOURCE: 57 FR 32295, July 21, 1992, unless otherwise noted.

AUTHORITY: 42 U.S.C. 7401, et seq.

**Notes of Decisions (43)**

Current through October 18, 2012; 77 FR 64052

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# DECLARATIONS

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

WHITE STALLION ENERGY CENTER, L.L.C., et al., )
Petitioners, )
v. ) No. 12-1100
U.S. ENVIRONMENTAL PROTECTION AGENCY, et al., ) (and consolidated
Respondents. ) cases)

DECLARATION OF RANAJIT SAHU

I, Ranajit Sahu, declare:

I. Experience and Qualifications

1. I hold a Bachelor of Technology degree, with Honors, from the Indian Institute of Technology, and a Master of Science (Mechanical Engineering) and Doctorate in Philosophy (Mechanical Engineering) from the California Institute of Technology. My curriculum vitae is attached as exhibit A to this declaration.

2. As described in exhibit A, I have over 21 years of experience in the fields of environmental, mechanical, and chemical engineering including program and project management services as well as design and specification of pollution control equipment. I have successfully managed and executed numerous projects relating to applied research, design, regulatory compliance, permitting, and risk assessment.

3. I am familiar with the design, operations, and technical aspects of coal-fired power plants, including the air pollution emissions from coal combustion for



energy generation. Specifically, I have completed consulting projects and reviewed and evaluated numerous air quality permits relating to coal-fired power plants. I have evaluated and provided comments on several applications for case-by-case maximum achievable control technology (“MACT”) determinations for coal-fired power plants.

4. As described in exhibit A, I have provided and continue to provide consulting services to numerous private sector, public sector, and public interest group clients. My clients have included steel mills, petroleum refineries, cement companies, aerospace companies, and power generators. As a consulting engineer for private sector clients, I have prepared or consulted on several applications for air permits that have included engineering analyses and demonstrations required to meet applicable best available control technology and MACT standards.

5. As described in exhibit A, as a consulting engineer, my public sector clients have included the U.S. Environmental Protection Agency (“EPA”), the U. S. Department of Justice, California Department of Toxic Substances Control, and various municipalities. I have also performed work for non-governmental organizations. I have performed projects in over 45 states, numerous local jurisdictions, and internationally.

6. In addition to my consulting work, for the past 20 years I have taught courses in several Southern California universities including University of California Los Angeles (air pollution), University of California Riverside (air

pollution, process hazard analysis), and Loyola Marymount University (air pollution, risk assessment, hazardous waste management).

## *II. Purpose of This Declaration*

7. I have examined EPA's Mercury and Air Toxics standards for coal- and oil-fired power plants, 77 Fed. Reg. 9,303 (Feb. 16, 2012) (the "MATS Rule" or "Rule"). The Rule (among other things) contains three sets of standards for existing coal- and oil-fired power plants: a mercury standard; an acid gas standard, which may be satisfied by meeting a hydrogen chloride limit or (for plants using some sort of flue gas desulfurization or scrubbing technology) a sulfur dioxide limit; and a non-mercury metals standard, which may be met through a particulate matter limit, or limits on individual metals. Those various limits are set on a unit-specific basis, and include a thirty boiler operating day averaging period.

8. The MATS Rule also includes a multi-unit averaging alternative, by which multiple existing, adjacent, commonly owned units may comply on a combined, average basis. 77 Fed. Reg. 9,485. Under that alternative, the Miami Fort, J.M. Stuart, and Schiller plants (which are the examples analyzed in this Declaration) would not need to meet the Rule's limits on a unit-by-unit basis; they could, instead, combine their emissions into a single average, calculated over 30 boiler operating days from each unit.

9. I provide this declaration in support of the standing of Sierra Club, Conservation Law Foundation, and Chesapeake Climate Action Network, who have petitioned the court to bring this lawsuit on behalf of their members, seeking to

vacate the multi-unit averaging compliance provisions that EPA has finalized for existing sources, in its Mercury and Air Toxics Standards.

### III. *Data Examined*

10. To that end, I have examined sulfur dioxide emissions data from three coal-fired power plants: the Miami Fort Station, and J.M. Stuart Station in Ohio, and the Schiller Station in New Hampshire. According to EPA, sulfur dioxide can function as a surrogate for hydrogen chloride and other acid gas emissions.

11. I understand that members of the petitioning organizations live, work, and recreate near each of these existing coal-fired power plants.

12. The Miami Fort Station includes three coal-fired units, the larger two of which (Units 7 and 8) employ flue-gas desulfurization control technology.

13. The J.M. Stuart Station includes four coal-fired units, each of which employs flue-gas desulfurization control technology.

14. The Schiller Plant includes three units, two of which burn coal in pulverized coal boilers and neither of which currently employs any sulfur-dioxide desulfurization control technologies. The third Schiller unit burns biomass in a fluidized bed boiler and does not contain any additional flue gas desulfurization control technology. Because the Schiller Station lacks flue gas desulfurization technology, it cannot utilize the Rule's sulfur dioxide alternative limits; it would need to meet the hydrogen chloride limit prescribed in the Rule.

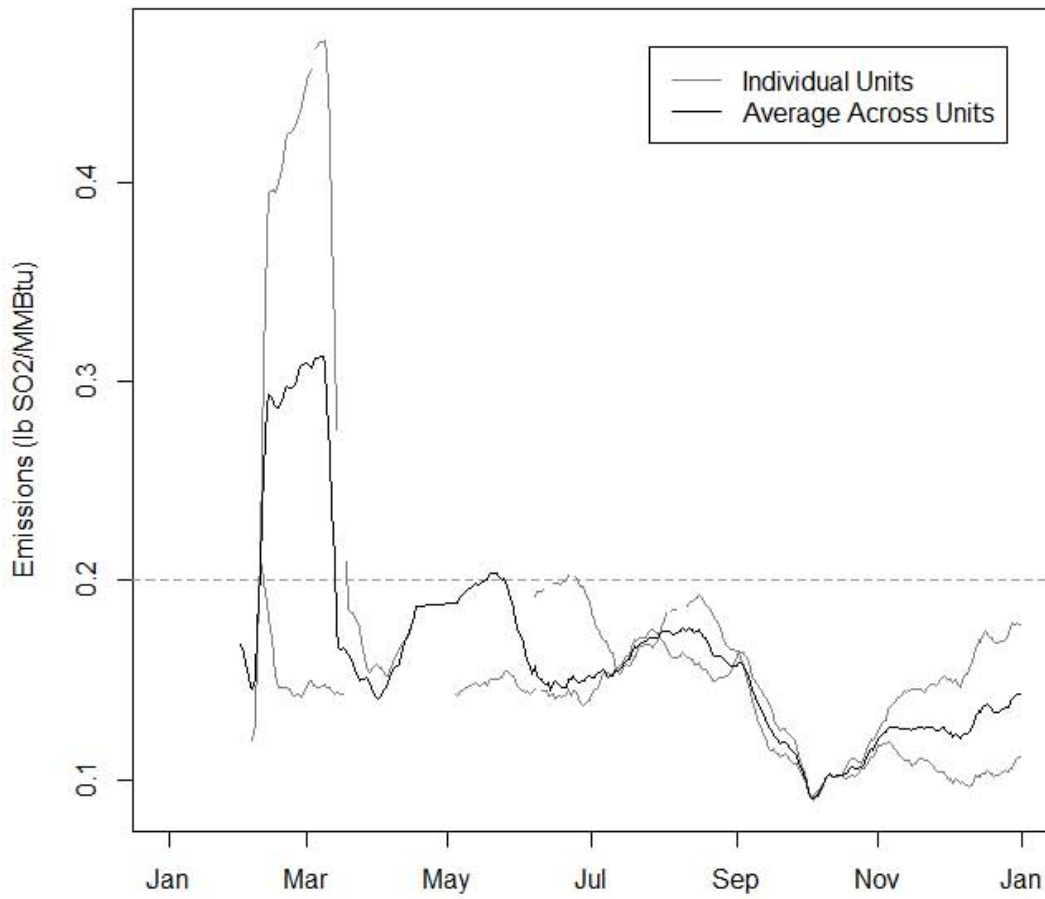
15. The emissions data analyzed in this declaration are calendar year 2011 hourly and daily data reported by each of these plants to the EPA and were obtained from the publicly-available EPA's acid rain database ([www.epa.gov/ampd](http://www.epa.gov/ampd)).

*V. Comparison of Unit-Specific and Averaged Multi-Unit Emissions Rates*

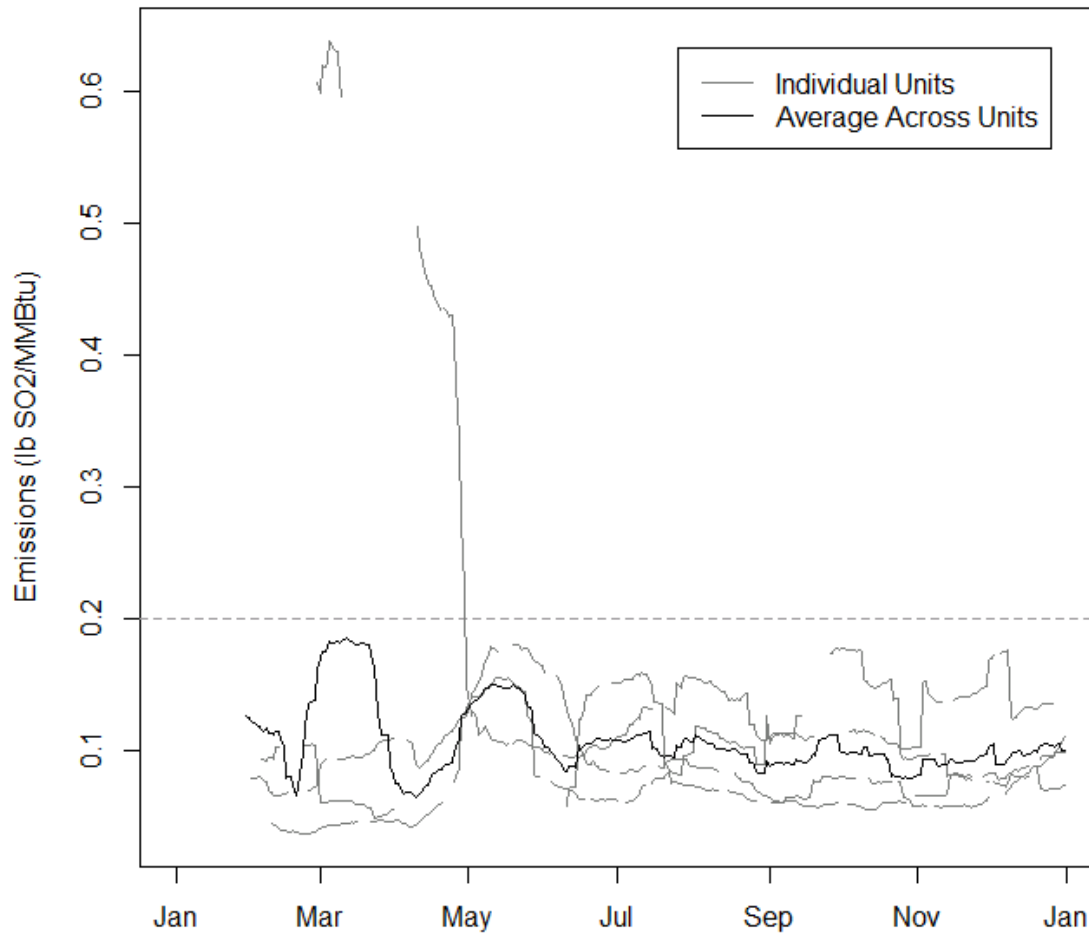
16. From that data, I calculated the plant's sulfur dioxide emissions rates, both on a unit-by-unit basis (calculated over a thirty boiler operating day average), and on a multi-unit basis under the provisions provided by the Rule's multi-unit averaging alternative.

17. The charts below (figs. 1-2) depict numerical emissions rates at Miami Fort Units 7 and 8, and all of the Stuart Station units (each calculated as a 30 boiler operating day average), for calendar year 2011. It also shows the combined multi-unit average emissions rate for those units (using 30 boiler-operating days from each boiler) during that period. It also includes sulfur dioxide limit specified by the Rule's acid gas standards (0.2 lb/MMBtu).

**Figure 1: Miami Fort Units 7, 8 and Combined**



**Figure 2: JM Stuart Units 1,2,3,4  
and Combined**



18. As shown on those charts, for both plants, the same level of pollution results in lower maximum emissions rates under the multi-unit averaging alternative than if emissions are calculated on a unit-by-unit basis. Multi-unit averaging hides spikes in pollution that would exceed the limit on a unit-by-unit basis. Averaging thereby permits sulfur dioxide (and acid gas) emissions that would otherwise be prohibited (i.e., would be greater than the MATS surrogate limit of 0.2 lb/MMBtu at a given unit), without any corresponding decrease in pollution, merely

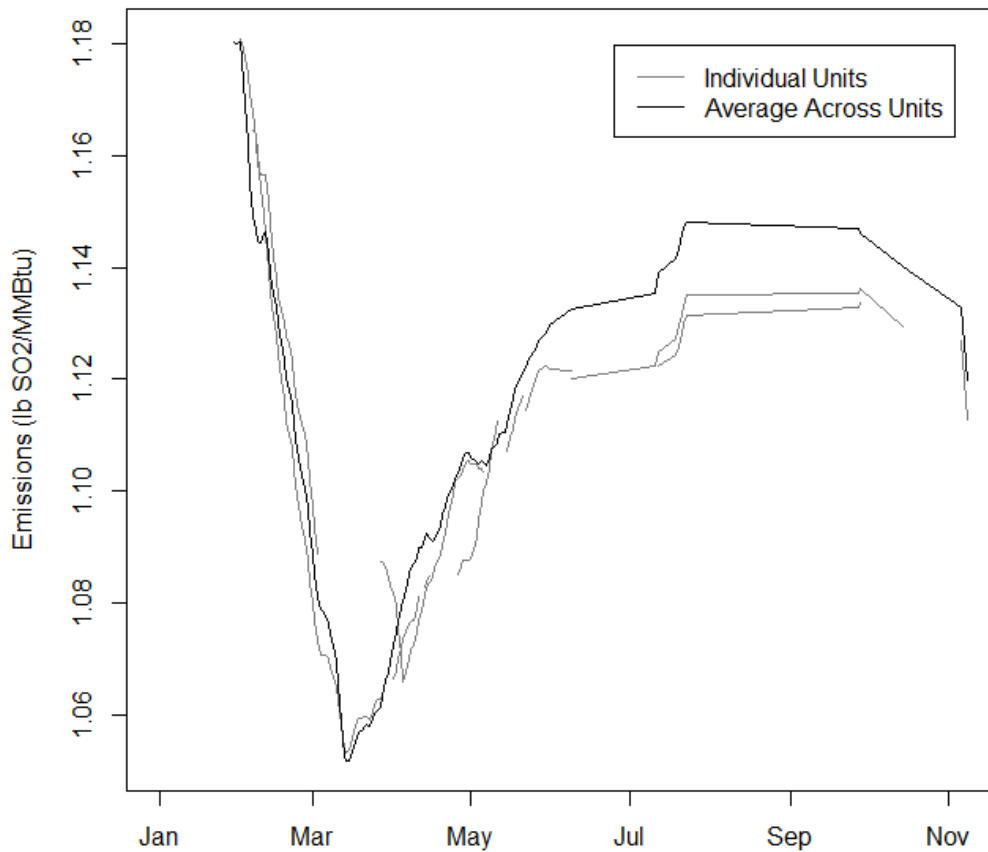
by increasing the averaging period over which the numerical emissions rate is calculated.

19. Exhibits B and C show the detailed analysis of the 2011 daily SO<sub>2</sub> emissions data, averaged over 30 boiler operating days for Miami Fort Units 7 and 8 (Exhibit B) and Stuart Units 1, 2, 3, and 4 (Exhibit C). Each Exhibit also shows the combined average, by day, considering the 30 boiler operating day averaging. From Exhibit B, the data show that Miami Fort Unit 7 exceeded the SO<sub>2</sub> surrogate threshold of 0.2 lb/MMBtu on 40 separate days, while Unit 8 exceeded this threshold for 43 separate days. Combined, the total number of separate exceedances for these two units is therefore 83. However, upon averaging, Exhibit B shows that the number of exceedance days at Miami Fort drops to 72 days, or 11 fewer days than the units considered separately. In addition, as expected and as shown in the figures above, the emissions levels, even on the exceedance days was generally smaller (even though it exceeded the 0.2 lb/MMBtu threshold) when the units were averaged, as compared to the emissions from a specific unit. Similarly, from Exhibit C, the data show that Stuart Unit 1 exceeded the SO<sub>2</sub> surrogate threshold on 3 days in 2011, while Stuart Units 2 and 3 did not exceed this threshold on any day in 2011. However, Stuart Unit 4 exceeded this threshold on 48 days in 2011. Upon averaging all 4 units, as would be allowed under the Rule, the combined average only exceeds the threshold on 8 days.

20. The chart below (fig. 3) depicts the effect of multi-unit averaging (only for the two coal units 4 and 6) on the Schiller Station's sulfur dioxide emissions, if

we assume that SO<sub>2</sub> is a surrogate for its acid gas emissions, as EPA has assumed. I note that the data are sparse for this plant since the coal units were not running for significant periods of time in 2011.

**Figure 3: Schiller Units 4, 6  
and Combined**



21. As is true for the Stuart and Miami Fort plants, use of the multi-unit averaging compliance alternative at the Schiller Station allows sulfur dioxide (and,



therefore, acid gas emissions, per EPA) emissions spikes that would otherwise be controlled by the emissions rates required of the individual units.

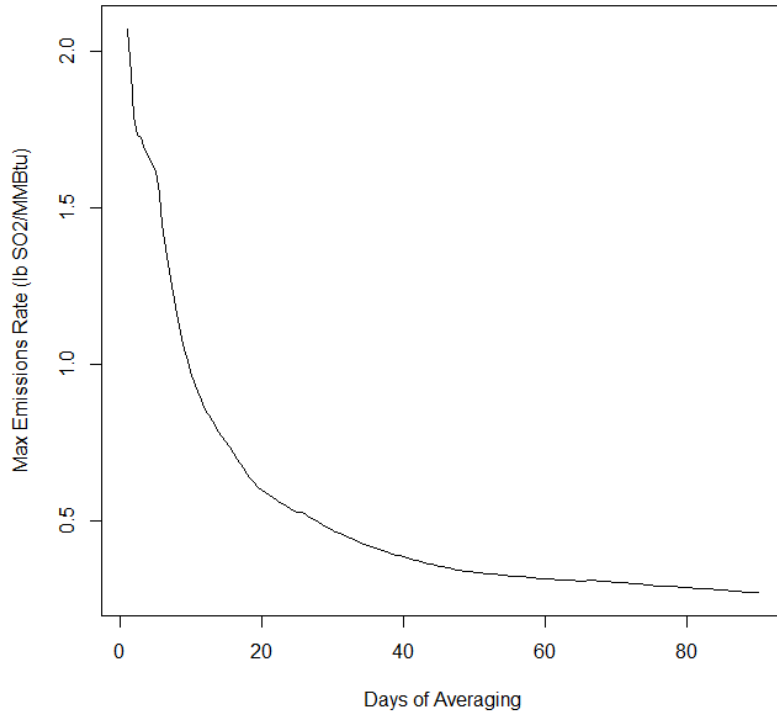
22. The above-summarized data analysis suggests that the result of the Rule's multi-unit averaging alternative is an increase in the toxic air pollution emissions (i.e., more number of exceedances of the surrogate limit) from each facility than would be permitted than if each unit were required to comply individually. The combined average allows more short-term spikes at specific units than would occur if the units complied with the standards individually. And the units could emit more total pollution than they would if they complied individually, as the units are not required to curtail high-pollution events that would otherwise be prohibited. As a result, people living or working or recreating near each of the Miami Fort, Stuart, and Schiller plants will be exposed to more toxic acid gas emissions under the multi-unit averaging alternative than if those plants were required to comply with the existing source MATS standards for sulfur dioxide on a unit-by-unit basis.

*VI. Relationship Between Numeric Emissions Rate and Averaging Period.*

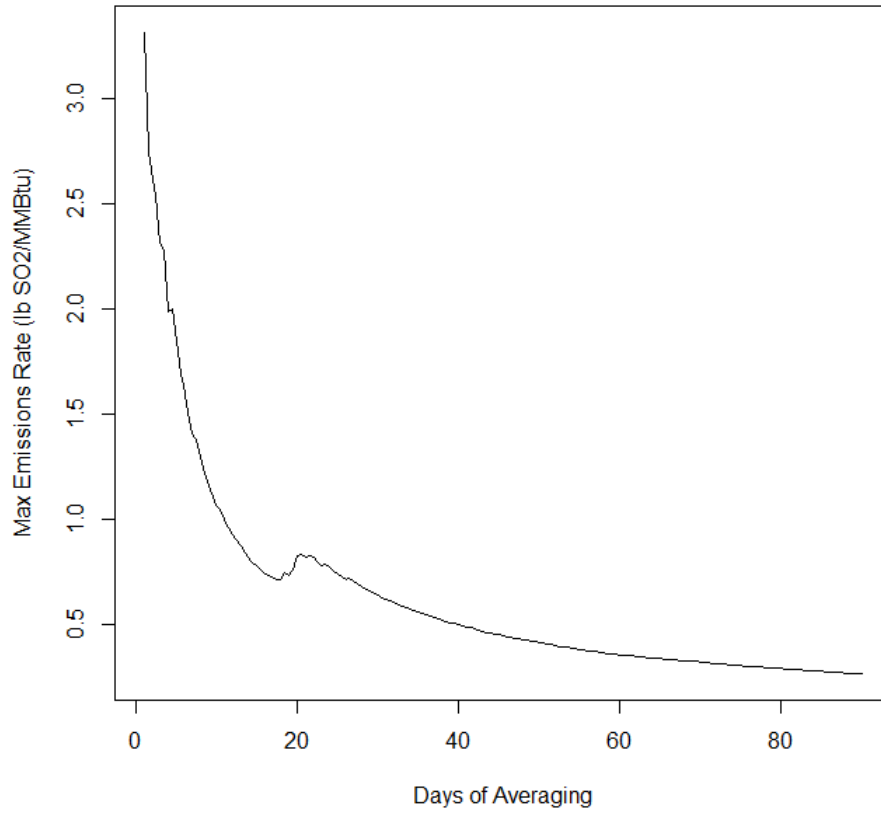
23. From the same data, I also calculated the maximum emissions rates from each plant, over a variety of averaging periods.

24. The figures below use the same data to depict the decrease in numerical emissions rate at the Miami Fort, Schiller and Stuart plants that occurs – without any change in actual emissions – as the number of boiler-operating hours (or days) in the averaging period increases.

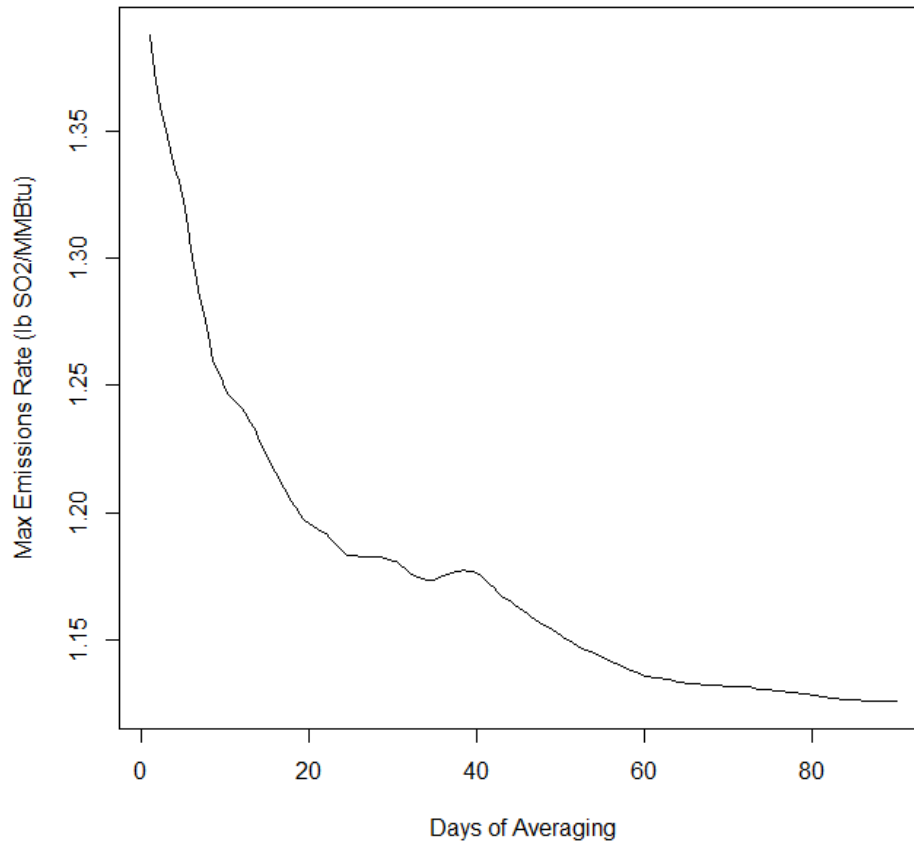
**Figure 4: Miami Fort Max Reading Across Units by Moving Average Length**



**Figure 5: JM Stuart Max Reading Across Units by Moving Average Length**



**Figure 6: Schiller Fort Max Reading Across Units by Moving Average Length**

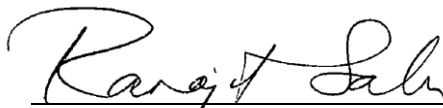


25. The lines across each chart represent the highest reported emissions rate from the plants for sulfur dioxide (from any of the units at the plant), as the number of days in the averaging period grows. As the number of operating days in the averaging period increases, short-term spikes in the units' air pollution are offset by a greater period of operating days at rates closer to the average rate for the plant. As a result, as the averaging time increases, the maximum emissions rate decreases (as it regresses towards the mean).

26. The above-described relationship between averaging period and emissions rates indicates that an increase in averaging period decreases the numerical value of their emissions rates, without any underlying decrease in actual emissions. Multi-unit averaging thereby creates less stringent limits. That data also suggests that were EPA to determine the maximum, variable numeric emissions rates of these coal-fired power plants on a combined, multi-unit basis (and thus over a longer averaging period), it would reach a lower numerical value than those included in the Rule's standards.

The following is true and correct to the best of my knowledge, under penalty of perjury under the laws of the United States.

Dated: October 22, 2012

  
\_\_\_\_\_  
Ranajit Sahu

## **Exhibit A**

### **RESUME FOR**

**RANAJIT (RON) SAHU, Ph.D, QEP, CEM (Nevada)**

**CONSULTANT, ENVIRONMENTAL AND ENERGY ISSUES**

**311 North Story Place  
Alhambra, CA 91801  
Phone: 702-683-5466  
e-mail: sahuron@earthlink.net**

#### **EXPERIENCE SUMMARY**

Dr. Sahu has over twenty two years of experience in the fields of environmental, mechanical, and chemical engineering including: program and project management services; design and specification of pollution control equipment; soils and groundwater remediation; combustion engineering evaluations; energy studies; multimedia environmental regulatory compliance (involving statutes and regulations such as the Federal CAA and its Amendments, Clean Water Act, TSCA, RCRA, CERCLA, SARA, OSHA, NEPA as well as various related state statutes); transportation air quality impact analysis; multimedia compliance audits; multimedia permitting (including air quality NSR/PSD permitting, Title V permitting, NPDES permitting for industrial and storm water discharges, RCRA permitting, etc.), multimedia/multi-pathway human health risk assessments for toxics; air dispersion modeling; and regulatory strategy development and support including negotiation of consent agreements and orders.

He has over twenty years of project management experience and has successfully managed and executed numerous projects in this time period. This includes basic and applied research projects, design projects, regulatory compliance projects, permitting projects, energy studies, risk assessment projects, and projects involving the communication of environmental data and information to the public. Notably, he has successfully managed a complex soils and groundwater remediation project with a value of over \$140 million involving soils characterization, development and implementation of the remediation strategy, regulatory and public interactions and other challenges.

He has provided consulting services to numerous private sector, public sector and public interest group clients. His major clients over the past twenty one years include various steel mills, petroleum refineries, cement companies, aerospace companies, power generation facilities, lawn and garden equipment manufacturers, spa manufacturers, chemical distribution facilities, and various entities in the public sector including EPA, the US Dept. of Justice, California DTSC, various municipalities, etc.). Dr. Sahu has performed projects in over 45 states, numerous local jurisdictions and internationally.

In addition to consulting, Dr. Sahu has taught numerous courses in several Southern California universities including UCLA (air pollution), UC Riverside (air pollution, process hazard analysis), and Loyola Marymount University (air pollution, risk assessment, hazardous waste management) for the past seventeen years. In this time period he has also taught at Caltech, his alma mater (various engineering courses), at the University of Southern California (air pollution controls) and at California State University, Fullerton (transportation and air quality).

Dr. Sahu has and continues to provide expert witness services in a number of environmental areas discussed above in both state and Federal courts as well as before administrative bodies (please see Annex A).

**EXPERIENCE RECORD**

- 2000-present **Independent Consultant.** Providing a variety of private sector (industrial companies, land development companies, law firms, etc.) public sector (such as the US Department of Justice) and public interest group clients with project management, air quality consulting, waste remediation and management consulting, as well as regulatory and engineering support consulting services.
- 1995-2000 Parsons ES, **Associate, Senior Project Manager and Department Manager for Air Quality/Geosciences/Hazardous Waste Groups**, Pasadena. Responsible for the management of a group of approximately 24 air quality and environmental professionals, 15 geoscience, and 10 hazardous waste professionals providing full-service consulting, project management, regulatory compliance and A/E design assistance in all areas.
- Parsons ES, **Manager for Air Source Testing Services.** Responsible for the management of 8 individuals in the area of air source testing and air regulatory permitting projects located in Bakersfield, California.
- 1992-1995 Engineering-Science, Inc. **Principal Engineer and Senior Project Manager** in the air quality department. Responsibilities included multimedia regulatory compliance and permitting (including hazardous and nuclear materials), air pollution engineering (emissions from stationary and mobile sources, control of criteria and air toxics, dispersion modeling, risk assessment, visibility analysis, odor analysis), supervisory functions and project management.
- 1990-1992 Engineering-Science, Inc. **Principal Engineer and Project Manager** in the air quality department. Responsibilities included permitting, tracking regulatory issues, technical analysis, and supervisory functions on numerous air, water, and hazardous waste projects. Responsibilities also include client and agency interfacing, project cost and schedule control, and reporting to internal and external upper management regarding project status.
- 1989-1990 Kinetics Technology International, Corp. **Development Engineer.** Involved in thermal engineering R&D and project work related to low-NO<sub>x</sub> ceramic radiant burners, fired heater NO<sub>x</sub> reduction, SCR design, and fired heater retrofitting.
- 1988-1989 Heat Transfer Research, Inc. **Research Engineer.** Involved in the design of fired heaters, heat exchangers, air coolers, and other non-fired equipment. Also did research in the area of heat exchanger tube vibrations.

**EDUCATION**

- 1984-1988 Ph.D., Mechanical Engineering, California Institute of Technology (Caltech), Pasadena, CA.
- 1984 M. S., Mechanical Engineering, Caltech, Pasadena, CA.
- 1978-1983 B. Tech (Honors), Mechanical Engineering, Indian Institute of Technology (IIT) Kharagpur, India

**TEACHING EXPERIENCE****Caltech**

- "Thermodynamics," Teaching Assistant, California Institute of Technology, 1983, 1987.
- "Air Pollution Control," Teaching Assistant, California Institute of Technology, 1985.
- "Caltech Secondary and High School Saturday Program," - taught various mathematics (algebra through calculus) and science (physics and chemistry) courses to high school students, 1983-1989.
- "Heat Transfer," - taught this course in the Fall and Winter terms of 1994-1995 in the Division of Engineering and Applied Science.
- "Thermodynamics and Heat Transfer," Fall and Winter Terms of 1996-1997.

U.C. Riverside, Extension

"Toxic and Hazardous Air Contaminants," University of California Extension Program, Riverside, California. Various years since 1992.

"Prevention and Management of Accidental Air Emissions," University of California Extension Program, Riverside, California. Various years since 1992.

"Air Pollution Control Systems and Strategies," University of California Extension Program, Riverside, California, Summer 1992-93, Summer 1993-1994.

"Air Pollution Calculations," University of California Extension Program, Riverside, California, Fall 1993-94, Winter 1993-94, Fall 1994-95.

"Process Safety Management," University of California Extension Program, Riverside, California. Various years since 1992-2010.

"Process Safety Management," University of California Extension Program, Riverside, California, at SCAQMD, Spring 1993-94.

"Advanced Hazard Analysis - A Special Course for LEPCs," University of California Extension Program, Riverside, California, taught at San Diego, California, Spring 1993-1994.

"Advanced Hazardous Waste Management" University of California Extension Program, Riverside, California. 2005.

Loyola Marymount University

"Fundamentals of Air Pollution - Regulations, Controls and Engineering," Loyola Marymount University, Dept. of Civil Engineering. Various years since 1993.

"Air Pollution Control," Loyola Marymount University, Dept. of Civil Engineering, Fall 1994.

"Environmental Risk Assessment," Loyola Marymount University, Dept. of Civil Engineering. Various years since 1998.

"Hazardous Waste Remediation" Loyola Marymount University, Dept. of Civil Engineering. Various years since 2006.

University of Southern California

"Air Pollution Controls," University of Southern California, Dept. of Civil Engineering, Fall 1993, Fall 1994.

"Air Pollution Fundamentals," University of Southern California, Dept. of Civil Engineering, Winter 1994.

University of California, Los Angeles

"Air Pollution Fundamentals," University of California, Los Angeles, Dept. of Civil and Environmental Engineering, Spring 1994, Spring 1999, Spring 2000, Spring 2003, Spring 2006, Spring 2007, Spring 2008, Spring 2009.

International Programs

"Environmental Planning and Management," 5 week program for visiting Chinese delegation, 1994.

"Environmental Planning and Management," 1 day program for visiting Russian delegation, 1995.

"Air Pollution Planning and Management," IEP, UCR, Spring 1996.

"Environmental Issues and Air Pollution," IEP, UCR, October 1996.

**PROFESSIONAL AFFILIATIONS AND HONORS**

President of India Gold Medal, IIT Kharagpur, India, 1983.



Member of the Alternatives Assessment Committee of the Grand Canyon Visibility Transport Commission, established by the Clean Air Act Amendments of 1990, 1992-present.

American Society of Mechanical Engineers: Los Angeles Section Executive Committee, Heat Transfer Division, and Fuels and Combustion Technology Division, 1987-present.

Air and Waste Management Association, West Coast Section, 1989-present.

#### **PROFESSIONAL CERTIFICATIONS**

EIT, California (# XE088305), 1993.

REA I, California (#07438), 2000.

Certified Permitting Professional, South Coast AQMD (#C8320), since 1993.

QEP, Institute of Professional Environmental Practice, since 2000.

CEM, State of Nevada (#EM-1699). Expiration 10/07/2011.

#### **PUBLICATIONS (PARTIAL LIST)**

"Physical Properties and Oxidation Rates of Chars from Bituminous Coals," with Y.A. Levendis, R.C. Flagan and G.R. Gavalas, *Fuel*, **67**, 275-283 (1988).

"Char Combustion: Measurement and Analysis of Particle Temperature Histories," with R.C. Flagan, G.R. Gavalas and P.S. Northrop, *Comb. Sci. Tech.* **60**, 215-230 (1988).

"On the Combustion of Bituminous Coal Chars," PhD Thesis, California Institute of Technology (1988).

"Optical Pyrometry: A Powerful Tool for Coal Combustion Diagnostics," *J. Coal Quality*, **8**, 17-22 (1989).

"Post-Ignition Transients in the Combustion of Single Char Particles," with Y.A. Levendis, R.C. Flagan and G.R. Gavalas, *Fuel*, **68**, 849-855 (1989).

"A Model for Single Particle Combustion of Bituminous Coal Char." Proc. ASME National Heat Transfer Conference, Philadelphia, **HTD-Vol. 106**, 505-513 (1989).

"Discrete Simulation of Cenospheric Coal-Char Combustion," with R.C. Flagan and G.R. Gavalas, *Combust. Flame*, **77**, 337-346 (1989).

"Particle Measurements in Coal Combustion," with R.C. Flagan, in "**Combustion Measurements**" (ed. N. Chigier), Hemisphere Publishing Corp. (1991).

"Cross Linking in Pore Structures and Its Effect on Reactivity," with G.R. Gavalas in preparation.

"Natural Frequencies and Mode Shapes of Straight Tubes," Proprietary Report for Heat Transfer Research Institute, Alhambra, CA (1990).

"Optimal Tube Layouts for Kamui SL-Series Exchangers," with K. Ishihara, Proprietary Report for Kamui Company Limited, Tokyo, Japan (1990).

"HTRI Process Heater Conceptual Design," Proprietary Report for Heat Transfer Research Institute, Alhambra, CA (1990).

"Asymptotic Theory of Transonic Wind Tunnel Wall Interference," with N.D. Malmuth and others, Arnold Engineering Development Center, Air Force Systems Command, USAF (1990).

"Gas Radiation in a Fired Heater Convection Section," Proprietary Report for Heat Transfer Research Institute, College Station, TX (1990).

"Heat Transfer and Pressure Drop in NTIW Heat Exchangers," Proprietary Report for Heat Transfer Research Institute, College Station, TX (1991).

"NO<sub>x</sub> Control and Thermal Design," Thermal Engineering Tech Briefs, (1994).

"From Purchase of Landmark Environmental Insurance to Remediation: Case Study in Henderson, Nevada," with Robin E. Bain and Jill Quillin, presented at the AQMA Annual Meeting, Florida, 2001.

"The Jones Act Contribution to Global Warming, Acid Rain and Toxic Air Contaminants," with Charles W. Botsford, presented at the AQMA Annual Meeting, Florida, 2001.

#### **PRESENTATIONS (PARTIAL LIST)**

"Pore Structure and Combustion Kinetics - Interpretation of Single Particle Temperature-Time Histories," with P.S. Northrop, R.C. Flagan and G.R. Gavalas, presented at the AIChE Annual Meeting, New York (1987).

"Measurement of Temperature-Time Histories of Burning Single Coal Char Particles," with R.C. Flagan, presented at the American Flame Research Committee Fall International Symposium, Pittsburgh, (1988).

"Physical Characterization of a Cenospheric Coal Char Burned at High Temperatures," with R.C. Flagan and G.R. Gavalas, presented at the Fall Meeting of the Western States Section of the Combustion Institute, Laguna Beach, California (1988).

"Control of Nitrogen Oxide Emissions in Gas Fired Heaters - The Retrofit Experience," with G. P. Croce and R. Patel, presented at the International Conference on Environmental Control of Combustion Processes (Jointly sponsored by the American Flame Research Committee and the Japan Flame Research Committee), Honolulu, Hawaii (1991).

"Air Toxics - Past, Present and the Future," presented at the Joint AIChE/AAEE Breakfast Meeting at the AIChE 1991 Annual Meeting, Los Angeles, California, November 17-22 (1991).

"Air Toxics Emissions and Risk Impacts from Automobiles Using Reformulated Gasolines," presented at the Third Annual Current Issues in Air Toxics Conference, Sacramento, California, November 9-10 (1992).

"Air Toxics from Mobile Sources," presented at the Environmental Health Sciences (ESE) Seminar Series, UCLA, Los Angeles, California, November 12, (1992).

"Kilns, Ovens, and Dryers - Present and Future," presented at the Gas Company Air Quality Permit Assistance Seminar, Industry Hills Sheraton, California, November 20, (1992).

"The Design and Implementation of Vehicle Scrapping Programs," presented at the 86th Annual Meeting of the Air and Waste Management Association, Denver, Colorado, June 12, 1993.

"Air Quality Planning and Control in Beijing, China," presented at the 87th Annual Meeting of the Air and Waste Management Association, Cincinnati, Ohio, June 19-24, 1994.

## Annex A

### Expert Litigation Support

1. Matters for which Dr. Sahu has have provided depositions and affidavits/expert reports include:

- (a) Deposition on behalf of Rocky Mountain Steel Mills, Inc. located in Pueblo, Colorado – dealing with the manufacture of steel in mini-mills including methods of air pollution control and BACT in steel mini-mills and opacity issues at this steel mini-mill
- (b) Affidavit for Rocky Mountain Steel Mills, Inc. located in Pueblo Colorado – dealing with the technical uncertainties associated with night-time opacity measurements in general and at this steel mini-mill.
- (c) Expert reports and depositions (2/28/2002 and 3/1/2002; 12/2/2003 and 12/3/2003; 5/24/2004) on behalf of the US Department of Justice in connection with the Ohio Edison NSR Cases. *United States, et al. v. Ohio Edison Co., et al.*, C2-99-1181 (S.D. Ohio).
- (d) Expert reports and depositions (5/23/2002 and 5/24/2002) on behalf of the US Department of Justice in connection with the Illinois Power NSR Case. *United States v. Illinois Power Co., et al.*, 99-833-MJR (S.D. Ill.).
- (e) Expert reports and depositions (11/25/2002 and 11/26/2002) on behalf of the US Department of Justice in connection with the Duke Power NSR Case. *United States, et al. v. Duke Energy Corp.*, 1:00-CV-1262 (M.D.N.C.).
- (f) Expert reports and depositions (10/6/2004 and 10/7/2004; 7/10/2006) on behalf of the US Department of Justice in connection with the American Electric Power NSR Cases. *United States, et al. v. American Electric Power Service Corp., et al.*, C2-99-1182, C2-99-1250 (S.D. Ohio).
- (g) Affidavit (March 2005) on behalf of the Minnesota Center for Environmental Advocacy and others in the matter of the Application of Heron Lake BioEnergy LLC to construct and operate an ethanol production facility – submitted to the Minnesota Pollution Control Agency.
- (h) Expert reports and depositions (10/31/2005 and 11/1/2005) on behalf of the US Department of Justice in connection with the East Kentucky Power Cooperative NSR Case. *United States v. East Kentucky Power Cooperative, Inc.*, 5:04-cv-00034-KSF (E.D. KY).
- (i) Deposition (10/20/2005) on behalf of the US Department of Justice in connection with the Cinergy NSR Case. *United States, et al. v. Cinergy Corp., et al.*, IP 99-1693-C-M/S (S.D. Ind.).
- (j) Affidavits and deposition on behalf of Basic Management Inc. (BMI) Companies in connection with the BMI vs. USA remediation cost recovery Case.
- (k) Expert report on behalf of Penn Future and others in the Cambria Coke plant permit challenge in Pennsylvania.
- (l) Expert report on behalf of the Appalachian Center for the Economy and the Environment and others in the Western Greenbrier permit challenge in West Virginia.
- (m) Expert report, deposition (via telephone on January 26, 2007) on behalf of various Montana petitioners (Citizens Awareness Network (CAN), Women's Voices for the Earth (WVE) and the Clark Fork Coalition (CFC)) in the Thompson River Cogeneration LLC Permit No. 3175-04 challenge.
- (n) Expert report and deposition (2/2/07) on behalf of the Texas Clean Air Cities Coalition at the Texas State Office of Administrative Hearings (SOAH) in the matter of the permit challenges to TXU Project Apollo's eight new proposed PRB-fired PC boilers located at seven TX sites.
- (o) Expert testimony (July 2007) on behalf of the Izaak Walton League of America and others in connection with the acquisition of power by Xcel Energy from the proposed Gascoyne Power Plant – at the State of Minnesota, Office of Administrative Hearings for the Minnesota PUC (MPUC No. E002/CN-06-1518; OAH No. 12-2500-17857-2).

- (p) Affidavit (July 2007) Comments on the Big Cajun I Draft Permit on behalf of the Sierra Club – submitted to the Louisiana DEQ.
- (q) Expert reports and deposition (12/13/2007) on behalf of Commonwealth of Pennsylvania – Dept. of Environmental Protection, State of Connecticut, State of New York, and State of New Jersey (Plaintiffs) in connection with the Allegheny Energy NSR Case. *Plaintiffs v. Allegheny Energy Inc., et al.*, 2:05cv0885 (W.D. Pennsylvania).
- (r) Expert reports and pre-filed testimony before the Utah Air Quality Board on behalf of Sierra Club in the Sevier Power Plant permit challenge.
- (s) Expert reports and deposition (October 2007) on behalf of MTD Products Inc., in connection with General Power Products, LLC v MTD Products Inc., 1:06 CVA 0143 (S.D. Ohio, Western Division)
- (t) Experts report and deposition (June 2008) on behalf of Sierra Club and others in the matter of permit challenges (Title V: 28.0801-29 and PSD: 28.0803-PSD) for the Big Stone II unit, proposed to be located near Milbank, South Dakota.
- (u) Expert reports, affidavit, and deposition (August 15, 2008) on behalf of Earthjustice in the matter of air permit challenge (CT-4631) for the Basin Electric Dry Fork station, under construction near Gillette, Wyoming before the Environmental Quality Council of the State of Wyoming.
- (v) Affidavits (May 2010/June 2010 in the Office of Administrative Hearings)/Declaration and Expert Report (November 2009 in the Office of Administrative Hearings) on behalf of NRDC and the Southern Environmental Law Center in the matter of the air permit challenge for Duke Cliffside Unit 6. Office of Administrative Hearing Matters 08 EHR 0771, 0835 and 0836 and 09 HER 3102, 3174, and 3176 (consolidated).
- (w) Declaration (August 2008), Expert Report (January 2009), and Declaration (May 2009) on behalf of Southern Alliance for Clean Energy et al., v Duke Energy Carolinas, LLC. in the matter of the air permit challenge for Duke Cliffside Unit 6. *Southern Alliance for Clean Energy et al., v. Duke Energy Carolinas, LLC*, Case No. 1:08-cv-00318-LHT-DLH (Western District of North Carolina, Asheville Division).
- (x) Dominion Wise County MACT Declaration (August 2008)
- (y) Expert Report on behalf of Sierra Club for the Green Energy Resource Recovery Project, MACT Analysis (June 13, 2008).
- (z) Expert Report on behalf of Sierra Club and the Environmental Integrity Project in the matter of the air permit challenge for NRG Limestone's proposed Unit 3 in Texas (February 2009).
- (aa) Expert Report and deposition on behalf of MTD Products, Inc., in the matter of Alice Holmes and Vernon Holmes v. Home Depot USA, Inc., et al. (June 2009, July 2009).
- (bb) Expert Report on behalf of Sierra Club and the Southern Environmental Law Center in the matter of the air permit challenge for Santee Cooper's proposed Pee Dee plant in South Carolina (August 2009).
- (cc) Statements (May 2008 and September 2009) on behalf of the Minnesota Center for Environmental Advocacy to the Minnesota Pollution Control Agency in the matter of the Minnesota Haze State Implementation Plans.
- (dd) Expert Report (August 2009) and Deposition (October 2009) on behalf of Environmental Defense, in the matter of permit challenges to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (ee) Deposition (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed Coletto Creek coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH). (October 2009).
- (ff) Expert Report, Rebuttal Report (September 2009) and Deposition (October 2009) on behalf of the Sierra Club, in the matter of challenges to the proposed Medicine Bow Fuel and Power IGL plant in Cheyenne, Wyoming.
- (gg) Expert Report (December 2009), Rebuttal reports (May 2010 and June 2010) and depositions (June 2010) on behalf of the US Department of Justice in connection with the Alabama Power Company NSR Case. *United States v. Alabama Power Company*, CV-01-HS-152-S (Northern District of Alabama, Southern Division).

- (hh) Prefiled testimony (October 2009) and Deposition (December 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed White Stallion Energy Center coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (ii) Deposition (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed Tenaska coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH). (April 2010).
- (jj) Written Direct Testimony (July 2010) and Written Rebuttal Testimony (August 2010) on behalf of the State of New Mexico Environment Department in the matter of Proposed Regulation 20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions*, No. EIB 10-04 (R), to the State of New Mexico, Environmental Improvement Board.
- (kk) Expert report (August 2010) and Rebuttal Expert Report (October 2010) on behalf of the US Department of Justice in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana) – Liability Phase.
- (ll) Declaration (August 2010), Reply Declaration (November 2010), Expert Report (April 2011), Supplemental and Rebuttal Expert Report (July 2011) on behalf of the US EPA and US Department of Justice in the matter of DTE Energy Company and Detroit Edison Company (Monroe Unit 2). *United States of America v. DTE Energy Company and Detroit Edison Company*, Civil Action No. 2:10-cv-13101-BAF-RSW (US District Court for the Eastern District of Michigan).
- (mm) Expert Report and Deposition (August 2010) as well as Affidavit (September 2010) on behalf of Kentucky Waterways Alliance, Sierra Club, and Valley Watch in the matter of challenges to the NPDES permit issued for the Trimble County power plant by the Kentucky Energy and Environment Cabinet to Louisville Gas and Electric, File No. DOW-41106-047.
- (nn) Expert Report (August 2010), Rebuttal Expert Report (September 2010), Supplemental Expert Report (September 2011), and Declaration (November 2011) on behalf of Wild Earth Guardians in the matter of opacity exceedances and monitor downtime at the Public Service Company of Colorado (Xcel)'s Cherokee power plant. No. 09-cv-1862 (D. Colo.).
- (oo) Written Direct Expert Testimony (August 2010) and Affidavit (February 2012) on behalf of Fall-Line Alliance for a Clean Environment and others in the matter of the PSD Air Permit for Plant Washington issued by Georgia DNR at the Office of State Administrative Hearing, State of Georgia (OSAH-BNR-AQ-1031707-98-WALKER).
- (pp) Deposition (August 2010) on behalf of Environmental Defense, in the matter of the remanded permit challenge to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (qq) Expert Report, Supplemental/Rebuttal Expert Report, and Declarations (October 2010, September 2012) on behalf of New Mexico Environment Department (Plaintiff-Intervenor), Grand Canyon Trust and Sierra Club (Plaintiffs) in the matter of Public Service Company of New Mexico (PNM)'s Mercury Report for the San Juan Generating Station, CIVIL NO. 1:02-CV-0552 BB/ATC (ACE). US District Court for the District of New Mexico.
- (rr) Comment Report (October 2010) on the Draft Permit Issued by the Kansas DHE to Sunflower Electric for Holcomb Unit 2. Prepared on behalf of the Sierra Club and Earthjustice.
- (ss) Expert Report (October 2010) and Rebuttal Expert Report (November 2010) (BART Determinations for PSCo Hayden and CSU Martin Drake units) to the Colorado Air Quality Commission on behalf of Coalition of Environmental Organizations.
- (tt) Expert Report (November 2010) (BART Determinations for TriState Craig Units, CSU Nixon Unit, and PRPA Rawhide Unit) to the Colorado Air Quality Commission on behalf of Coalition of Environmental Organizations.
- (uu) Declaration (November 2010) on behalf of the Sierra Club in connection with the Martin Lake Station Units 1, 2, and 3. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Case No. 5:10-cv-00156-DF-CMC (US District Court for the Eastern District of Texas, Texarkana Division).



- (vv) Comment Report (December 2010) on the Pennsylvania Department of Environmental Protection (PADEP)'s Proposal to grant Plan Approval for the Wellington Green Energy Resource Recovery Facility on behalf of the Chesapeake Bay Foundation, Group Against Smog and Pollution (GASP), National Park Conservation Association (NPCA), and the Sierra Club.
- (ww) Written Expert Testimony (January 2011) and Declaration (February 2011) to the Georgia Office of State Administrative Hearings (OSAH) in the matter of Minor Source HAPs status for the proposed Longleaf Energy Associates power plant (OSAH-BNR-AQ-1115157-60-HOWELLS) on behalf of the Friends of the Chattahoochee and the Sierra Club).
- (xx) Declaration (February 2011) in the matter of the Draft Title V Permit for RRI Energy MidAtlantic Power Holdings LLC Shawville Generating Station (Pennsylvania), ID No. 17-00001 on behalf of the Sierra Club.
- (yy) Expert Report (March 2011), Rebuttal Expert Report (June 2011) on behalf of the United States in *United States of America v. Cemex, Inc.*, Civil Action No. 09-cv-00019-MSK-MEH (US District Court for the District of Colorado).
- (zz) Declaration (April 2011) and Expert Report (July 16, 2012) in the matter of the Lower Colorado River Authority (LCRA)'s Fayette (Sam Seymour) Power Plant on behalf of the Texas Campaign for the Environment. *Texas Campaign for the Environment v. Lower Colorado River Authority*, Civil Action No. 4:11-cv-00791 (US District Court for the Southern District of Texas, Houston Division).
- (aaa) Declaration (June 2011) on behalf of the Plaintiffs MYTAPN in the matter of Microsoft-Yes, Toxic Air Pollution-No (MYTAPN) v. State of Washington, Department of Ecology and Microsoft Corporation Columbia Data Center to the Pollution Control Hearings Board, State of Washington, Matter No. PCHB No. 10-162.
- (bbb) Expert Report (June 2011) on behalf of the New Hampshire Sierra Club at the State of New Hampshire Public Utilities Commission, Docket No. 10-261 – the 2010 Least Cost Integrated Resource Plan (LCIRP) submitted by the Public Service Company of New Hampshire (re. Merrimack Station Units 1 and 2).
- (ccc) Declaration (August 2011) in the matter of the Sandy Creek Energy Associates L.P. Sandy Creek Power Plant on behalf of Sierra Club and Public Citizen. *Sierra Club, Inc. and Public Citizen, Inc. v. Sandy Creek Energy Associates, L.P.*, Civil Action No. A-08-CA-648-LY (US District Court for the Western District of Texas, Austin Division).
- (ddd) Expert Report (October 2011) on behalf of the Defendants in the matter of *John Quiles and Jeanette Quiles et al. v. Bradford-White Corporation, MTD Products, Inc., Kohler Co., et al.*, Case No. 3:10-cv-747 (TJM/DEP) (US District Court for the Northern District of New York).
- (eee) Declaration (February 2012) and Second Declaration (February 2012) in the matter of *Washington Environmental Council and Sierra Club Washington State Chapter v. Washington State Department of Ecology and Western States Petroleum Association*, Case No. 11-417-MJP (US District Court for the Western District of Washington).
- (fff) Expert Report (March 2012) in the matter of *Environment Texas Citizen Lobby, Inc and Sierra Club v. ExxonMobil Corporation et al.*, Civil Action No. 4:10-cv-4969 (US District Court for the Southern District of Texas, Houston Division).
- (ggg) Declaration (March 2012) in the matter of *Center for Biological Diversity, et al. v. United States Environmental Protection Agency*, Case No. 11-1101 (consolidated with 11-1285, 11-1328 and 11-1336) (US Court of Appeals for the District of Columbia Circuit).
- (hhh) Declaration (March 2012) in the matter of *Sierra Club v. The Kansas Department of Health and Environment*, Case No. 11-105,493-AS (Holcomb power plan) (Supreme Court of the State of Kansas).
- (iii) Declaration (March 2012) in the matter of the Las Brisas Energy Center *Environmental Defense Fund et al., v. Texas Commission on Environmental Quality*, Cause No. D-1-GN-11-001364 (District Court of Travis County, Texas, 261<sup>st</sup> Judicial District).
- (jjj) Expert Report (April 2012), Supplemental and Rebuttal Expert Report (July 2012), and Supplemental Rebuttal Expert Report (August 2012) in the matter of the Portland Power plant *State of New Jersey and State of Connecticut (Intervenor-Plaintiff) v. RRI Energy Mid-Atlantic Power Holdings et al.*, Civil Action No. 07-CV-5298 (JKG) (US District Court for the Eastern District of Pennsylvania).

- (kkk) Declaration (April 2012) in the matter of the EPA's EGU MATS Rule, on behalf of the Environmental Integrity Project
- (lll) Declaration (September 2012) in the Matter of the Application of *Energy Answers Incinerator, Inc.* for a Certificate of Public Convenience and Necessity to Construct a 120 MW Generating Facility in Baltimore City, Maryland, before the Public Service Commission of Maryland, Case No. 9199.
- (mmm) Expert report (August 2012) on behalf of the US Department of Justice in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana) – Harm Phase.

2. Occasions where Dr. Sahu has provided Written or Oral testimony before Congress:

- (nnn) In July 2012, provided expert written and oral testimony to the House Subcommittee on Energy and the Environment, Committee on Science, Space, and Technology at a Hearing entitled "Hitting the Ethanol Blend Wall – Examining the Science on E15."

3. Occasions where Dr. Sahu has provided oral testimony at trial or in similar proceedings include the following:

- (ooo) In February, 2002, provided expert witness testimony on emissions data on behalf of Rocky Mountain Steel Mills, Inc. in Denver District Court.
- (ppp) In February 2003, provided expert witness testimony on regulatory framework and emissions calculation methodology issues on behalf of the US Department of Justice in the Ohio Edison NSR Case in the US District Court for the Southern District of Ohio.
- (qqq) In June 2003, provided expert witness testimony on regulatory framework, emissions calculation methodology, and emissions calculations on behalf of the US Department of Justice in the Illinois Power NSR Case in the US District Court for the Southern District of Illinois.
- (rrr) In August 2006, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Western Greenbrier) on behalf of the Appalachian Center for the Economy and the Environment in West Virginia.
- (sss) In May 2007, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Thompson River Cogeneration) on behalf of various Montana petitioners (Citizens Awareness Network (CAN), Women's Voices for the Earth (WVE) and the Clark Fork Coalition (CFC)) before the Montana Board of Environmental Review.
- (ttt) In October 2007, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Sevier Power Plant) on behalf of the Sierra Club before the Utah Air Quality Board.
- (uuu) In August 2008, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Big Stone Unit II) on behalf of the Sierra Club and Clean Water before the South Dakota Board of Minerals and the Environment.
- (vvv) In February 2009, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Santee Cooper Pee Dee units) on behalf of the Sierra Club and the Southern Environmental Law Center before the South Carolina Board of Health and Environmental Control.
- (www) In February 2009, provided expert witness testimony regarding power plant emissions, BACT issues and MACT issues on a permit challenge (NRG Limestone Unit 3) on behalf of the Sierra Club and the Environmental Integrity Project before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (xxx) In November 2009, provided expert witness testimony regarding power plant emissions, BACT issues and MACT issues on a permit challenge (Las Brisas Energy Center) on behalf of the Environmental Defense Fund before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.

- (yyy) In February 2010, provided expert witness testimony regarding power plant emissions, BACT issues and MACT issues on a permit challenge (White Stallion Energy Center) on behalf of the Environmental Defense Fund before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (zzz) In September 2010 provided oral trial testimony on behalf of Commonwealth of Pennsylvania – Dept. of Environmental Protection, State of Connecticut, State of New York, State of Maryland, and State of New Jersey (Plaintiffs) in connection with the Allegheny Energy NSR Case in US District Court in the Western District of Pennsylvania. *Plaintiffs v. Allegheny Energy Inc., et al.*, 2:05cv0885 (W.D. Pennsylvania).
- (aaaa) Oral Direct and Rebuttal Expert Testimony (September 2010) on behalf of Fall-Line Alliance for a Clean Environment and others in the matter of the PSD Air Permit for Plant Washington issued by Georgia DNR at the Office of State Administrative Hearing, State of Georgia (OSAH-BNR-AQ-1031707-98-WALKER).
- (bbbb) Oral Testimony (September 2010) on behalf of the State of New Mexico Environment Department in the matter of Proposed Regulation 20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions*, No. EIB 10-04 (R), to the State of New Mexico, Environmental Improvement Board.
- (cccc) Oral Testimony (October 2010) regarding mercury and total PM/PM10 emissions and other issues on a remanded permit challenge (Las Brisas Energy Center) on behalf of the Environmental Defense Fund before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (dddd) Oral Testimony (November 2010) regarding BART for PSCo Hayden, CSU Martin Drake units before the Colorado Air Quality Commission on behalf of the Coalition of Environmental Organizations.
- (eeee) Oral Testimony (December 2010) regarding BART for TriState Craig Units, CSU Nixon Unit, and PRPA Rawhide Unit) before the Colorado Air Quality Commission on behalf of the Coalition of Environmental Organizations.
- (ffff) Deposition (December 2010) on behalf of the US Department of Justice in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana).
- (gggg) Deposition (February 2011 and January 2012) on behalf of Wild Earth Guardians in the matter of opacity exceedances and monitor downtime at the Public Service Company of Colorado (Xcel)'s Cherokee power plant. No. 09-cv-1862 (D. Colo.).
- (hhhh) Oral Expert Testimony (February 2011) to the Georgia Office of State Administrative Hearings (OSAH) in the matter of Minor Source HAPs status for the proposed Longleaf Energy Associates power plant (OSAH-BNR-AQ-1115157-60-HOWELLS) on behalf of the Friends of the Chattahoochee and the Sierra Club).
- (iiii) Deposition (August 2011) on behalf of the United States in *United States of America v. Cemex, Inc.*, Civil Action No. 09-cv-00019-MSK-MEH (US District Court for the District of Colorado).
- (jjjj) Deposition (July 2011) and Oral Testimony at Hearing (February 2012) on behalf of the Plaintiffs MYTAPN in the matter of Microsoft-Yes, Toxic Air Pollution-No (MYTAPN) v. State of Washington, Department of Ecology and Microsoft Corporation Columbia Data Center to the Pollution Control Hearings Board, State of Washington, Matter No. PCHB No. 10-162.
- (kkkk) Oral Testimony at Hearing (March 2012) on behalf of the US Department of Justice in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana).
- (llll) Oral Testimony at Hearing (April 2012) on behalf of the New Hampshire Sierra Club at the State of New Hampshire Public Utilities Commission, Docket No. 10-261 – the 2010 Least Cost Integrated Resource Plan (LCIRP) submitted by the Public Service Company of New Hampshire (re. Merrimack Station Units 1 and 2).





**Exhibit B**

**Analysis of Miami Fort Units 7 and 8 and Combined Average**

**Exhibit C**

**Analysis of J. M. Stuart Units 1, 2, 3, and 4 and Combined Average**

Plant - Miami Fort - Analysis of 30 Boiler Operating Day (BOD) Average of SO2 Emissions, With and Without Inter-Unit Averaging (2011)																
Date	Unit 7 (U7)							Unit 8 (U8)							(U7+U8 SO2)	
	SO2 (tons)	HI (MMBtu)	OT	Sum 30 BOD SO2 tons	Sum 30 BOD HI	SO2 lb/MMBtu 30 BOD Avg.	Counter if >0.2	SO2 (tons)	HI (MMBtu)	OT	Sum 30 BOD SO2 tons	Sum 30 BOD HI	SO2 lb/MMBtu 30 BOD Avg.	Counter if >0.2	lb/MMBtu 30 BOD Avg.	Counter if > 0.2
1-Jan-11	6.303	107527.6	24	268.063	3601373.5	0.1489		22.199	100996.1	24	458.189	3316566.4	0.2763	1.000	0.2100	1.000
2-Jan-11	8.653	124399	24	267.942	3605319.5	0.1486		20.009	89268.6	24	466.322	3290396.3	0.2834	1.000	0.2130	1.000
3-Jan-11	7.504	122746.4	24	266.35	3605708.3	0.1477		23.035	118554.5	24	477.747	3292763.9	0.2902	1.000	0.2157	1.000
4-Jan-11	9.095	123323.5	24	266.822	3608641.9	0.1479		23.056	116404	24	490.936	3306750.2	0.2969	1.000	0.2192	1.000
5-Jan-11	9.09	123386.4	24	266.444	3609213.4	0.1476					490.936	3306750.2	0.2969	1.000	0.2190	1.000
6-Jan-11	8.29	121020.9	24	265.674	3606981.3	0.1473					490.936	3306750.2	0.2969	1.000	0.2189	1.000
7-Jan-11	6.03	103460.7	24	259.542	3582031	0.1449					490.936	3306750.2	0.2969	1.000	0.2179	1.000
8-Jan-11	7.429	106544.2	24	260.744	3571939.9	0.1460					490.936	3306750.2	0.2969	1.000	0.2186	1.000
9-Jan-11	7.145	109700.1	24	258.261	3573910.5	0.1445					490.936	3306750.2	0.2969	1.000	0.2178	1.000
10-Jan-11				258.261	3573910.5	0.1445					490.936	3306750.2	0.2969	1.000	0.2178	1.000
11-Jan-11				258.261	3573910.5	0.1445					490.936	3306750.2	0.2969	1.000	0.2178	1.000
12-Jan-11				258.261	3573910.5	0.1445		21.008	85387.4	24	500.37	3278994.9	0.3052	1.000	0.2214	1.000
13-Jan-11	6.298	121715.7	24	253.386	3579600.7	0.1416		23.922	115399.6	24	513.025	3279649	0.3129	1.000	0.2235	1.000
14-Jan-11				253.386	3579600.7	0.1416					513.025	3279649	0.3129	1.000	0.2235	1.000
15-Jan-11				253.386	3579600.7	0.1416		8.003	112232.5	24	511.315	3275040.7	0.3122	1.000	0.2231	1.000
16-Jan-11				253.386	3579600.7	0.1416		7.476	111970.8	24	511.045	3270466.5	0.3125	1.000	0.2232	1.000
17-Jan-11				253.386	3579600.7	0.1416		7.871	110009.5	24	509.724	3267993.3	0.3119	1.000	0.2229	1.000
18-Jan-11				253.386	3579600.7	0.1416		7.821	105231.2	24	507.538	3265466.1	0.3109	1.000	0.2223	1.000
19-Jan-11	6.42	115478.2	24	252.924	3583207.7	0.1412		9.422	110412.1	24	504.282	3269285.2	0.3085	1.000	0.2210	1.000
20-Jan-11	4.847	118121.8	24	250.27	3588636.4	0.1395		11.917	111641.3	24	500.647	3268200.1	0.3064	1.000	0.2190	1.000
21-Jan-11	8.805	120962.2	24	247.302	3580904.7	0.1381		8.285	110811	24	500.456	3263292.9	0.3067	1.000	0.2185	1.000
22-Jan-11	10.804	120411.3	24	248.785	3570145.2	0.1394					500.456	3263292.9	0.3067	1.000	0.2193	1.000
23-Jan-11	11.804	120462	24	250.582	3564268.3	0.1406		10.582	108278	24	502.223	3257190.9	0.3084	1.000	0.2207	1.000
24-Jan-11	6.169	115890.9	24	248.724	3553513.7	0.1400		10.282	105705.1	24	499.996	3250256.6	0.3077	1.000	0.2201	1.000
25-Jan-11	4.429	122829.6	24	243.175	3553842.7	0.1369		4.796	114601.3	24	483.09	3251483	0.2972	1.000	0.2134	1.000
26-Jan-11	4.852	122558.9	24	240.167	3554324.1	0.1351		4.909	115390.4	24	473.027	3272411	0.2891	1.000	0.2089	1.000
27-Jan-11	6.368	124200.9	24	238.201	3552102.4	0.1341		4.65	115993.6	24	470.576	3271204.5	0.2877	1.000	0.2078	1.000
28-Jan-11	8.176	123394.9	24	237.666	3552403.2	0.1338		6.892	113555.2	24	471.094	3270071.3	0.2881	1.000	0.2078	1.000
29-Jan-11	5.473	116845.9	24	234.891	3582981.7	0.1311					471.094	3270071.3	0.2881	1.000	0.2060	1.000
30-Jan-11	5.43	121728.5	24	231.302	3575022.4	0.1294					471.094	3270071.3	0.2881	1.000	0.2052	1.000
31-Jan-11	7.725	125382.2	24	228.958	3574408.6	0.1281					471.094	3270071.3	0.2881	1.000	0.2046	1.000
1-Feb-11	4.901	122552.5	24	224.997	3587284.8	0.1254					471.094	3270071.3	0.2881	1.000	0.2030	1.000
2-Feb-11	7.69	116462.5	24	228.118	3582764.5	0.1273		10.705	113965.2	24	468.807	3308578.5	0.2834	1.000	0.2023	1.000
3-Feb-11	6.957	113747.5	24	225.893	3569922.3	0.1266		8.896	117145.9	24	456.409	3321427.2	0.2748	1.000	0.1980	
4-Feb-11	7.343	123636.9	24	222.378	3568823.1	0.1246		8.439	113608	24	442.318	3314861.6	0.2669	1.000	0.1931	
5-Feb-11	6.933	121531.2	24	219.026	3567750	0.1228		8.347	112553.8	24	428.242	3309957.5	0.2588	1.000	0.1882	
6-Feb-11	8.149	120133.1	24	216.553	3565990.9	0.1215		7.263	110963	24	415.283	3321952.8	0.2500	1.000	0.1835	
7-Feb-11	20.942	112443.3	24	230.054	3562598.8	0.1291		7.351	106184.2	24	400.696	3316026.6	0.2417	1.000	0.1834	
8-Feb-11	73.664	123461.3	24	297.415	3578532.5	0.1662		13.468	116134	24	391.418	3316233.4	0.2361	1.000	0.1998	
9-Feb-11	92.422	122561.7	24	381.184	3576695.2	0.2131	1.000	8.025	116502.7	24	376.636	3317082.2	0.2271	1.000	0.2199	1.000
10-Feb-11	97.081	121601.7	24	470.761	3575550.5	0.2633	1.000	7.994	116165.6	24	361.917	3318714.8	0.2181	1.000	0.2416	1.000
11-Feb-11	85.448	119581	24	547.114	3571808	0.3064	1.000	8.5	114122.5	24	347.398	3318183	0.2094	1.000	0.2597	1.000
12-Feb-11	119.064	117530.3	24	657.088	3565951.9	0.3685	1.000	7.358	112800.5	24	332.481	3321987.6	0.2002	1.000	0.2873	1.000
13-Feb-11	45.69	109062.4	24	694.488	3553993.4	0.3908	1.000	6.959	104307.7	24	317.241	3325299.2	0.1908		0.2941	1.000
14-Feb-11	9.772	111639	24	698.23	3562171.7	0.3920	1.000	7.466	109707.8	24	304.698	3345738.4	0.1821		0.2904	1.000
15-Feb-11	8.887	116676.8	24	699.688	3572304.3	0.3917	1.000	8.244	112959.4	24	289.907	3340143.3	0.1736		0.2863	1.000
16-Feb-11	10.398	102217	24	702.941	3564821.2	0.3944	1.000	6.07	98036.5	24	272.921	3321775.8	0.1643		0.2834	1.000
17-Feb-11	12.251	105246.2	24	708.894	3548351.7	0.3996	1.000	7.755	104419.8	24	259.668	3340808.2	0.1555		0.2812	1.000
18-Feb-11	10.263	106495.4	24	712.737	3539368.9	0.4027	1.000	7.572	103229.3	24	243.318	3328637.9	0.1462		0.2784	1.000
19-Feb-11	20.939	122305.8	24	728.829	3543552.9	0.4114	1.000	5.973	86939.6	24	241.288	3303345	0.1461		0.2834	1.000
20-Feb-11	20.364	111901.3	24	740.388	3534492	0.4190	1.000	7.28	108684.2	24	241.092	3300058.4	0.1461		0.2872	1.000
21-Feb-11	16.14	108780.6	24	745.724	3522861.3	0.4234	1.000	7.279	103727.5	24	240.5	3293776.4	0.1460		0.2894	1.000

22-Feb-11	12.983	121684.5	24	746.903	3524083.8	0.4239	1.000	8.45	113101.3	24	241.129	3301646.5	0.1461		0.2895	1.000
23-Feb-11	8.405	122537.4	24	749.139	3530730.3	0.4244	1.000	8.005	113854.3	24	239.712	3305088.7	0.1451		0.2893	1.000
24-Feb-11	7.5	117398.6	24	752.21	3525293.3	0.4267	1.000	7.768	109628.1	24	235.563	3303075.5	0.1426		0.2893	1.000
25-Feb-11	7.329	120113.4	24	754.687	3522853.8	0.4285	1.000	9.335	115290	24	236.613	3307554.5	0.1431		0.2903	1.000
26-Feb-11	12.654	121238.5	24	760.973	3519891.4	0.4324	1.000	9.721	109676.7	24	235.752	3308953.2	0.1425		0.2919	1.000
27-Feb-11	14.887	116798	24	767.684	3513294.5	0.4370	1.000	8.803	110521.6	24	234.273	3313769.7	0.1414		0.2935	1.000
28-Feb-11	13.514	109685	24	775.725	3506133.6	0.4425	1.000	7.878	108768.2	24	237.355	3307936.6	0.1435		0.2973	1.000
1-Mar-11	17.063	120376.1	24	787.358	3504781.2	0.4493	1.000	9.9	117055.8	24	242.346	3309602	0.1465		0.3022	1.000
2-Mar-11	12.122	118655.7	24	791.755	3498054.7	0.4527	1.000	8.391	115695.3	24	246.087	3309303.7	0.1487		0.3049	1.000
3-Mar-11	9.921	124842.1	24	796.775	3500344.3	0.4553	1.000	8.371	118653.6	24	247.566	3314402.1	0.1494		0.3065	1.000
4-Mar-11				796.775	3500344.3	0.4553	1.000	7.231	117009.7	24	244.092	3317446.6	0.1472		0.3053	1.000
5-Mar-11				796.775	3500344.3	0.4553	1.000	8.077	117066.2	24	243.273	3317366.9	0.1467		0.3051	1.000
6-Mar-11	4.209	86512.7	24	793.294	3470394.5	0.4572	1.000	8.278	117494.6	24	243.112	3321253.5	0.1464		0.3052	1.000
7-Mar-11	9.717	124954.2	24	796.054	3481601.2	0.4573	1.000	8.146	117024.3	24	242.911	3325724	0.1461		0.3052	1.000
8-Mar-11				796.054	3481601.2	0.4573	1.000				242.911	3325724	0.1461		0.3052	1.000
9-Mar-11	8.083	112099.3	24	796.794	3470063.6	0.4592	1.000	8.815	109788.2	24	244.463	3324549.2	0.1471		0.3065	1.000
10-Mar-11	10.697	116651	24	800.558	3465183.4	0.4621	1.000	10.302	112377.4	24	247.414	3330742.4	0.1486		0.3084	1.000
11-Mar-11	9.58	121304.9	24	801.989	3466355.2	0.4627	1.000	7.932	115738.1	24	241.878	3330346.5	0.1453		0.3072	1.000
12-Mar-11	7.523	119207.7	24	788.57	3473119.6	0.4541	1.000	6.363	115902.2	24	240.216	3329746	0.1443		0.3025	1.000
13-Mar-11	7.438	121585.1	24	722.344	3471243.4	0.4162	1.000	5.058	114399.6	24	237.28	3327980	0.1426		0.2823	1.000
14-Mar-11	6.816	118463.7	24	636.738	3467145.4	0.3673	1.000	8.904	111025.3	24	237.684	3324882.8	0.1430		0.2575	1.000
15-Mar-11				636.738	3467145.4	0.3673	1.000	7.787	119137.7	24	238.113	3331220	0.1430		0.2574	1.000
16-Mar-11				636.738	3467145.4	0.3673	1.000	6.361	117838.3	24	237.515	3344750.6	0.1420		0.2567	1.000
17-Mar-11				636.738	3467145.4	0.3673	1.000	7.971	108624.3	24	238.02	3343667.1	0.1424		0.2569	1.000
18-Mar-11	5.916	109568.1	24	545.573	3455111.8	0.3158	1.000				238.02	3343667.1	0.1424		0.2305	1.000
19-Mar-11	6.117	107189.5	24	466.242	3442720.3	0.2709	1.000				238.02	3343667.1	0.1424		0.2076	1.000
20-Mar-11	6.515	96207.4	24	353.693	3421397.4	0.2068	1.000				238.02	3343667.1	0.1424		0.1749	
21-Mar-11	7.665	111617.3	24	315.668	3423952.3	0.1844					238.02	3343667.1	0.1424		0.1636	
22-Mar-11	7.722	107817.6	24	313.618	3420130.9	0.1834					238.02	3343667.1	0.1424		0.1631	
23-Mar-11	7.152	109657.3	24	311.883	3413111.4	0.1828					238.02	3343667.1	0.1424		0.1628	
24-Mar-11	7.396	120374.1	24	308.881	3431268.5	0.1800					238.02	3343667.1	0.1424		0.1614	
25-Mar-11	9.035	121863.6	24	305.665	3447885.9	0.1773					238.02	3343667.1	0.1424		0.1601	
26-Mar-11	7.972	120912.6	24	303.374	3462303.1	0.1752					238.02	3343667.1	0.1424		0.1591	
27-Mar-11	9.821	120834	24	292.256	3460831.3	0.1689					238.02	3343667.1	0.1424		0.1559	
28-Mar-11	7.867	123414.6	24	279.759	3472344.6	0.1611					238.02	3343667.1	0.1424		0.1519	
29-Mar-11	10.077	124612.3	24	273.696	3488176.3	0.1569					238.02	3343667.1	0.1424		0.1498	
30-Mar-11	9.934	122447.8	24	270.647	3488939.6	0.1551					238.02	3343667.1	0.1424		0.1489	
31-Mar-11	11.242	120750.7	24	273.484	3487152.9	0.1569					238.02	3343667.1	0.1424		0.1498	
1-Apr-11	10.483	117191.1	24	276.467	3486945.4	0.1586					238.02	3343667.1	0.1424		0.1506	
2-Apr-11	13.459	119235.8	24	282.597	3486067.8	0.1621					238.02	3343667.1	0.1424		0.1525	
3-Apr-11	11.605	116265.6	24	281.548	3481094.9	0.1618					238.02	3343667.1	0.1424		0.1523	
4-Apr-11	12.204	109320.7	24	278.865	3473617.6	0.1606					238.02	3343667.1	0.1424		0.1516	
5-Apr-11	11.426	112027.1	24	276.777	3475959.7	0.1593					238.02	3343667.1	0.1424		0.1510	
6-Apr-11	12.527	118217.1	24	272.241	3473800.7	0.1567					238.02	3343667.1	0.1424		0.1497	
7-Apr-11	15.011	120310	24	275.13	3475455	0.1583					238.02	3343667.1	0.1424		0.1505	
8-Apr-11	13.27	114193.8	24	278.479	3464806.7	0.1607					238.02	3343667.1	0.1424		0.1517	
9-Apr-11	13.15	119497.7	24	287.42	3497791.7	0.1643					238.02	3343667.1	0.1424		0.1536	
10-Apr-11	9.889	113575.1	24	287.592	3486412.6	0.1650					238.02	3343667.1	0.1424		0.1539	
11-Apr-11	12.736	112691.6	24	292.245	3487004.9	0.1676					238.02	3343667.1	0.1424		0.1553	
12-Apr-11	12.783	110830	24	294.331	3481183.9	0.1691					238.02	3343667.1	0.1424		0.1560	
13-Apr-11	9.991	111120.8	24	294.742	3470999.8	0.1698					238.02	3343667.1	0.1424		0.1564	
14-Apr-11	12.131	110879.9	24	299.35	3462672	0.1729					238.02	3343667.1	0.1424		0.1579	
15-Apr-11	13.369	111486.6	24	305.281	3452573.5	0.1768					238.02	3343667.1	0.1424		0.1599	
16-Apr-11	7.523	88104.3	24	305.988	3422214.1	0.1788					238.02	3343667.1	0.1424		0.1608	
17-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424		0.1608	
18-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424		0.1608	
19-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424		0.1608	
20-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424		0.1608	

21-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
22-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
23-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
24-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
25-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
26-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
27-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
28-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
29-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
30-Apr-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
1-May-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
2-May-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
3-May-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
4-May-11				305.988	3422214.1	0.1788					238.02	3343667.1	0.1424			0.1608
5-May-11				305.988	3422214.1	0.1788		5.16	81380.7	24	234.936	3312088.4	0.1419			0.1606
6-May-11				305.988	3422214.1	0.1788		8.479	63544.3	24	237.345	3277596.2	0.1448			0.1622
7-May-11				305.988	3422214.1	0.1788		4.647	67837.4	24	234.237	3241013.8	0.1445			0.1622
8-May-11				305.988	3422214.1	0.1788		5.394	77390.4	24	232.059	3215174.9	0.1444			0.1621
9-May-11				305.988	3422214.1	0.1788					232.059	3215174.9	0.1444			0.1621
10-May-11				305.988	3422214.1	0.1788					232.059	3215174.9	0.1444			0.1621
11-May-11				305.988	3422214.1	0.1788					232.059	3215174.9	0.1444			0.1621
12-May-11				305.988	3422214.1	0.1788					232.059	3215174.9	0.1444			0.1621
13-May-11				305.988	3422214.1	0.1788					232.059	3215174.9	0.1444			0.1621
14-May-11				305.988	3422214.1	0.1788		3.592	78373.1	24	229.678	3206608.4	0.1433			0.1616
15-May-11				305.988	3422214.1	0.1788		5.834	95097.4	24	228.232	3193021.6	0.1430			0.1615
16-May-11				305.988	3422214.1	0.1788		10.524	115304.9	24	231.477	3204599	0.1445			0.1622
17-May-11				305.988	3422214.1	0.1788		9.267	113486.5	24	232.294	3204984.2	0.1450			0.1624
18-May-11				305.988	3422214.1	0.1788		7.935	114320.6	24	232.224	3205450.5	0.1449			0.1624
19-May-11				305.988	3422214.1	0.1788		14.837	114948.4	24	239.293	3210770.8	0.1491			0.1644
20-May-11				305.988	3422214.1	0.1788					239.293	3210770.8	0.1491			0.1644
21-May-11				305.988	3422214.1	0.1788					239.293	3210770.8	0.1491			0.1644
22-May-11				305.988	3422214.1	0.1788		3.816	54962.6	24	233.774	3150443.4	0.1484			0.1642
23-May-11				305.988	3422214.1	0.1788		9.196	117441	24	233.249	3158207.7	0.1477			0.1639
24-May-11				305.988	3422214.1	0.1788		9.113	106862.7	24	233.559	3154548.8	0.1481			0.1641
25-May-11				305.988	3422214.1	0.1788		11.261	103971.6	24	236.942	3149752.2	0.1505			0.1652
26-May-11				305.988	3422214.1	0.1788		7.626	111105.8	24	234.668	3143802.2	0.1493			0.1647
27-May-11				305.988	3422214.1	0.1788		6.408	112149.3	24	232.685	3140256.2	0.1482			0.1642
28-May-11				305.988	3422214.1	0.1788		6.285	102799.6	24	230.599	3124402.2	0.1476			0.1639
29-May-11				305.988	3422214.1	0.1788		6.431	105618	24	229.799	3113010.5	0.1476			0.1640
30-May-11				305.988	3422214.1	0.1788		4.436	115661.3	24	226.158	3111605.6	0.1454			0.1629
31-May-11				305.988	3422214.1	0.1788		5.086	120159.3	24	222.966	3114270.3	0.1432			0.1618
1-Jun-11				305.988	3422214.1	0.1788		9.473	122820.6	24	224.293	3120066.6	0.1438			0.1621
2-Jun-11				305.988	3422214.1	0.1788		6.439	111748.2	24	221.917	3122026.6	0.1422			0.1613
3-Jun-11				305.988	3422214.1	0.1788		4.688	112412.1	24	216.303	3122061.3	0.1386			0.1596
4-Jun-11				305.988	3422214.1	0.1788		6.689	114734.7	24	215.06	3121057.9	0.1378			0.1593
5-Jun-11				305.988	3422214.1	0.1788		7.258	117131.1	24	215.955	3122286.8	0.1383			0.1595
6-Jun-11				305.988	3422214.1	0.1788		7.898	115501.3	24	218.795	3123388.5	0.1401			0.1603
7-Jun-11	11.603	67296.8	24	311.675	3379942.8	0.1844		9.255	119578.4	24	219.146	3131941.6	0.1399			0.1630
8-Jun-11	9.275	86352.7	24	314.833	3359106	0.1875					219.146	3131941.6	0.1399			0.1645
9-Jun-11	6.059	95950.1	24	314.377	3358848.7	0.1872					219.146	3131941.6	0.1399			0.1644
10-Jun-11	7.601	105826.4	24	314.313	3353057.8	0.1875					219.146	3131941.6	0.1399			0.1645
11-Jun-11	8.661	107228.2	24	315.252	3352468.4	0.1881		7.925	108513.8	24	219.284	3121317.7	0.1405			0.1651
12-Jun-11				315.252	3352468.4	0.1881		5.545	90027.3	24	218.468	3093506.7	0.1412			0.1656
13-Jun-11				315.252	3352468.4	0.1881		8.215	103490.5	24	218.712	3088372.9	0.1416			0.1658
14-Jun-11				315.252	3352468.4	0.1881		6.746	102530.8	24	220.298	3109523	0.1417			0.1658
15-Jun-11	7.732	72545.1	24	315.832	3315356.2	0.1905		7.966	100889	24	219.785	3146867.7	0.1397			0.1658
16-Jun-11	8.886	117553.4	24	317.322	3312535.5	0.1916		9.471	107918.6	24	224.609	3186948.9	0.1410			0.1668
17-Jun-11	5.779	102709.9	24	314.066	3293381.8	0.1907		8.42	111447.9	24	227.635	3221006.4	0.1413			0.1663

18-Jun-11	7.66	105069.7	24	313.754	3277538.9	0.1915		6.879	97944.5	24	230.922	3240577.8	0.1425		0.1671
19-Jun-11	5.55	92624.7	24	309.483	3249329.6	0.1905		6.227	88997.6	24	231.315	3234478	0.1430		0.1668
20-Jun-11	10.204	99730.6	24	311.82	3225645.6	0.1933		11.14	99449.7	24	231.931	3218622.8	0.1441		0.1688
21-Jun-11				311.82	3225645.6	0.1933		11.447	108305.1	24	234.111	3213441.4	0.1457		0.1696
22-Jun-11				311.82	3225645.6	0.1933		10.352	114974.1	24	236.528	3214094.9	0.1472		0.1703
23-Jun-11				311.82	3225645.6	0.1933		11.47	111094.8	24	233.161	3210241.3	0.1453		0.1694
24-Jun-11	8.374	105644.4	24	310.117	3206677.7	0.1934		7.98	104703	24	237.325	3259981.7	0.1456		0.1693
25-Jun-11	6.262	100566.6	24	306.445	3184796.5	0.1924		5.707	104656	24	233.836	3247196.7	0.1440		0.1680
26-Jun-11	6.786	97229.5	24	301.989	3161275.3	0.1911		4.671	96855.1	24	229.394	3237189.1	0.1417		0.1661
27-Jun-11	10.211	105657.7	24	301.717	3149741.9	0.1916		5.179	101027.5	24	223.312	3234245	0.1381		0.1645
28-Jun-11	6.538	94040.2	24	294.796	3124546.3	0.1887		7.267	111008.7	24	222.953	3234147.9	0.1379		0.1628
29-Jun-11	8.754	113134.4	24	291.945	3121415.1	0.1871		7.914	109280	24	224.459	3231278.6	0.1389		0.1626
30-Jun-11	8.04	118775.3	24	287.781	3130869.7	0.1838		8.442	109719.5	24	226.616	3238198.5	0.1400		0.1615
1-Jul-11	6.04	114322	24	282.395	3133164.6	0.1803		8.364	108360.6	24	228.549	3240941.1	0.1410		0.1603
2-Jul-11	6.061	112469	24	275.929	3127416.5	0.1765		8.311	105422.5	24	232.424	3230702.3	0.1439		0.1599
3-Jul-11	7.308	109718.4	24	268.226	3116824.9	0.1721		8.903	108115.4	24	236.241	3218658.4	0.1468		0.1593
4-Jul-11	5.941	98462.2	24	260.897	3101093.3	0.1683		9.184	100411	24	235.952	3196248.8	0.1476		0.1578
5-Jul-11	7.58	106390.5	24	255.327	3087986.1	0.1654		10.525	108928.8	24	240.038	3193429.4	0.1503		0.1577
6-Jul-11	11.217	117913.7	24	256.655	3092324.7	0.1660		7.907	113216.4	24	243.257	3194233.7	0.1523		0.1590
7-Jul-11	9.121	111793	24	253.04	3091426.1	0.1637		8.014	113578.6	24	244.582	3193077.6	0.1532		0.1584
8-Jul-11	8.06	111964.7	24	248.317	3092560.8	0.1606		7.966	115191.9	24	245.29	3191138.4	0.1537		0.1571
9-Jul-11	8.843	108272	24	247.169	3089712	0.1600		7.097	107314.7	24	244.489	3182951.8	0.1536		0.1568
10-Jul-11	8.649	108773.5	24	243.687	3087605.6	0.1578		7.519	110482.3	24	242.753	3173855.7	0.1530		0.1554
11-Jul-11	11.719	118445.4	24	242.037	3094564.4	0.1564		11.835	120181.4	24	246.663	3185523.3	0.1549		0.1556
12-Jul-11	8.958	124009.7	24	243.472	3130469.8	0.1555		10.502	120750.8	24	251.62	3216246.8	0.1565		0.1560
13-Jul-11	10.264	116737.3	24	242.133	3179910.3	0.1523		9.207	113921.6	24	252.612	3226677.9	0.1566		0.1544
14-Jul-11	11.48	119075.9	24	244.338	3212633.5	0.1521		10.718	112459.2	24	256.584	3236606.3	0.1586		0.1553
15-Jul-11	11.387	114182.2	24	249.666	3230865.6	0.1546		13.04	111527.9	24	261.658	3247245.2	0.1612		0.1579
16-Jul-11	10.273	111255.8	24	252.338	3236295	0.1559		10.534	109738.5	24	262.721	3249065.1	0.1617		0.1588
17-Jul-11	8.88	113812.7	24	252.557	3242879.5	0.1558		8.782	109032.1	24	263.083	3246649.3	0.1621		0.1589
18-Jul-11	11.178	124611.4	24	256.003	3294945.8	0.1554		15.512	122364.6	24	271.716	3271069.4	0.1661		0.1607
19-Jul-11	14.264	121482.3	24	261.381	3298874.7	0.1585		15.615	119835.3	24	281.104	3301907.1	0.1703		0.1644
20-Jul-11	10.104	126468.1	24	265.706	3322632.9	0.1599		11.351	120607.1	24	281.315	3323064.5	0.1693		0.1646
21-Jul-11	14.379	131333.3	24	272.425	3348896.5	0.1627		14.643	125233.3	24	284.511	3339992.7	0.1704		0.1665
22-Jul-11	15.223	131251.3	24	282.098	3387523.1	0.1666		12.505	123598.2	24	286.664	3348616.8	0.1712		0.1689
23-Jul-11	12.491	124669.5	24	284.385	3412462	0.1667		12.105	119965.6	24	287.299	3357487.6	0.1711		0.1689
24-Jul-11	10.958	119344.3	24	286.969	3426161.9	0.1675		8.831	111108.8	24	288.15	3363893.4	0.1713		0.1694
25-Jul-11	8.094	122607.4	24	288.801	3448202.7	0.1675		8.926	114760	24	291.369	3373997.4	0.1727		0.1701
26-Jul-11	9.543	120143.3	24	291.558	3471116.5	0.1680		8.592	115793	24	295.29	3392935.3	0.1741		0.1710
27-Jul-11	8.771	120000.6	24	290.118	3485459.4	0.1665		8.015	114272	24	298.126	3406179.8	0.1751		0.1707
28-Jul-11	11.499	125531.3	24	295.079	3516950.5	0.1678		8	124874.9	24	298.859	3420046	0.1748		0.1712
29-Jul-11	12.56	126822.6	24	298.885	3530638.7	0.1693		6.772	122730.9	24	297.717	3433496.9	0.1734		0.1713
30-Jul-11	13.891	126968.5	24	304.736	3538831.9	0.1722		6.449	120694.7	24	295.724	3444472.1	0.1717		0.1720
31-Jul-11	13.17	118220.7	24	311.866	3542730.6	0.1761		6.057	111740	24	293.417	3447851.5	0.1702		0.1732
1-Aug-11	14.095	128333.6	24	319.9	3558595.2	0.1798					293.417	3447851.5	0.1702		0.1751
2-Aug-11	14.542	122760.2	24	327.134	3571637	0.1832		6.269	120125.8	24	291.375	3462554.8	0.1683		0.1759
3-Aug-11				327.134	3571637	0.1832		6.804	122801.4	24	289.276	3477240.8	0.1664		0.1749
4-Aug-11	7.268	91405.7	24	328.461	3564580.5	0.1843		7.717	116364.2	24	287.809	3493194	0.1648		0.1746
5-Aug-11	11.13	121824.2	24	332.011	3580014.2	0.1855		7.196	120699.6	24	284.48	3504964.8	0.1623		0.1740
6-Aug-11	11.449	123663.6	24	332.243	3585764.1	0.1853		8.227	119356.9	24	284.8	3511105.3	0.1622		0.1739
7-Aug-11				332.243	3585764.1	0.1853		7.986	112938.3	24	284.772	3510465	0.1622		0.1739
8-Aug-11				332.243	3585764.1	0.1853		9.483	115711.6	24	286.289	3510984.7	0.1631		0.1743
9-Aug-11				332.243	3585764.1	0.1853		10.54	110395	24	289.732	3514065	0.1649		0.1752
10-Aug-11				332.243	3585764.1	0.1853		7.966	103927.2	24	290.179	3507509.9	0.1655		0.1755
11-Aug-11	12.425	119315.7	24	335.547	3593286.8	0.1868		7.562	102392.3	24	285.906	3489720.8	0.1639		0.1755
12-Aug-11	11.021	107973.7	24	338.508	3589295.8	0.1886		7.845	103638.5	24	283.249	3472608.5	0.1631		0.1761
13-Aug-11	10.521	106242.9	24	340.186	3587266.7	0.1897		8.003	102738.6	24	282.045	3461425.5	0.1630		0.1766
14-Aug-11	8.212	95291.4	24	339.749	3573784.6	0.1901		7.796	91043.6	24	279.123	3440009.9	0.1623		0.1765

15-Aug-11	12.305	107037.5	24	340.335	3562376.7	0.1911		10.343	103488.8	24	276.426	3431970.8	0.1611		0.1764
16-Aug-11	10.569	108269.5	24	341.946	3546636.5	0.1928		8.905	103622.6	24	274.797	3425854.9	0.1604		0.1769
17-Aug-11	8.329	111442.1	24	340.011	3541341.3	0.1920		10.502	106599.1	24	276.517	3423421.9	0.1615		0.1770
18-Aug-11	5.837	115089.6	24	334.368	3537355	0.1890		13.82	110530.3	24	274.825	3411587.6	0.1611		0.1753
19-Aug-11	8.658	113480	24	331.639	3536652.8	0.1875		10.235	107460.1	24	269.445	3399212.4	0.1585		0.1733
20-Aug-11	7.519	106777.2	24	328.885	3532174.2	0.1862		8.514	100843.6	24	266.608	3379448.9	0.1578		0.1723
21-Aug-11	6.686	103196.6	24	326.691	3521558.1	0.1855		8.587	100261.1	24	260.552	3354476.7	0.1553		0.1708
22-Aug-11	6.381	102995.7	24	321.894	3499942.4	0.1839		7.376	99378.8	24	255.423	3330257.3	0.1534		0.1690
23-Aug-11	5.487	104116.6	24	313.117	3482576.7	0.1798		7.831	100862.2	24	251.149	3311153.9	0.1517		0.1661
24-Aug-11	7.205	110356.9	24	310.218	3466465.5	0.1790		9.604	107192.2	24	251.922	3307237.3	0.1523		0.1660
25-Aug-11	7.131	109915.5	24	302.97	3445047.7	0.1759		8.768	106141.6	24	251.764	3298618.9	0.1526		0.1645
26-Aug-11	6.775	106405	24	294.522	3420201.4	0.1722		6.977	102529	24	250.149	3285354.9	0.1523		0.1625
27-Aug-11	6.262	107793.5	24	288.293	3403325.4	0.1694		6.73	101639	24	248.864	3272721.9	0.1521		0.1609
28-Aug-11	3.8	91777.6	24	281.135	3375758.7	0.1666		5.106	87142.6	24	245.97	3234989.6	0.1521		0.1595
29-Aug-11	6.025	102063	24	279.066	3355214.3	0.1663		6.465	98514.4	24	245.663	3210773.1	0.1530		0.1598
30-Aug-11	6.587	101795.8	24	276.11	3336866.8	0.1655		8.6	102090.1	24	247.814	3192168.5	0.1553		0.1605
31-Aug-11	7.462	105491	24	274.801	3322357.2	0.1654		9.564	104988.5	24	251.321	3185417	0.1578		0.1617
1-Sep-11	9.289	114682.4	24	272.591	3311508.3	0.1646		10.921	108436.7	24	255.973	3173727.9	0.1613		0.1630
2-Sep-11	10.777	122835	24	270.808	3307520.7	0.1638		10.929	116842.6	24	260.098	3167769.1	0.1642		0.1640
3-Sep-11	7.827	109581.8	24	264.744	3290134	0.1609		6.406	108755.2	24	258.787	3160160.1	0.1638		0.1623
4-Sep-11	7.238	104922.1	24	258.812	3276835.4	0.1580		4.266	92041.2	24	255.857	3131501.7	0.1634		0.1606
5-Sep-11	0.799	70867.1	24	245.516	3219368.9	0.1525		1.317	65775	24	248.947	3077919.8	0.1618		0.1570
6-Sep-11	3.192	92147	24	234.166	3188755.7	0.1469		2.546	92366.9	24	243.507	3057348.4	0.1593		0.1530
7-Sep-11	3.581	95415.5	24	230.479	3192765.5	0.1444		2.776	92087.1	24	236.8	3033723.9	0.1561		0.1501
8-Sep-11	2.056	99669.3	24	221.405	3170610.6	0.1397		2.423	95112.5	24	228.683	3018441.4	0.1515		0.1454
9-Sep-11	2.105	105746.2	24	212.061	3152693.2	0.1345		4.382	100220.2	24	225.099	3014734.4	0.1493		0.1418
10-Sep-11	5.757	103925.8	24	205.393	3137303.3	0.1309		4.43	98596.4	24	221.967	3010938.5	0.1474		0.1390
11-Sep-11	5.838	102449.3	24	200.21	3131778.9	0.1279		4.673	97440	24	218.795	3004740	0.1456		0.1366
12-Sep-11	6.745	111370.6	24	196.434	3136906.6	0.1252		6.566	105524.2	24	217.358	3007525.6	0.1445		0.1347
13-Sep-11	6.753	117142.2	24	194.975	3158757.4	0.1235		5.401	105287.4	24	214.963	3021769.4	0.1423		0.1327
14-Sep-11	6.504	108028.1	24	189.174	3159748	0.1197		6.989	103039.1	24	211.609	3021319.7	0.1401		0.1297
15-Sep-11	2.792	79197.1	24	181.397	3130675.6	0.1159		5.135	80876.2	24	207.839	2998573.3	0.1386		0.1270
16-Sep-11	5.749	87832.7	24	178.817	3107066.2	0.1151		4.288	79815.5	24	201.625	2971789.7	0.1357		0.1252
17-Sep-11	5.15	71126.9	24	178.13	3063103.5	0.1163		4.88	64540.3	24	192.685	2925799.7	0.1317		0.1238
18-Sep-11	4.725	83068.1	24	174.197	3032691.6	0.1149		4.171	73736.1	24	186.621	2892075.7	0.1291		0.1218
19-Sep-11	5.061	98473.2	24	171.739	3024387.6	0.1136		4.769	90460	24	182.876	2881692.1	0.1269		0.1201
20-Sep-11	3.829	84076.1	24	168.882	3005267.1	0.1124		4.555	74409.4	24	178.844	2855840.4	0.1252		0.1187
21-Sep-11	6.704	96309.3	24	169.205	2998580.7	0.1129		7.619	86903.9	24	179.087	2843365.5	0.1260		0.1192
22-Sep-11	6.971	108789.9	24	170.689	3003254	0.1137		7.478	96247.9	24	178.734	2838751.2	0.1259		0.1196
23-Sep-11	5.173	101801	24	168.657	2994698.1	0.1126		6.5	89012.7	24	175.63	2820571.7	0.1245		0.1184
24-Sep-11	2.606	94436.7	24	164.132	2979219.3	0.1102		5.047	86914.3	24	171.909	2801344.4	0.1227		0.1163
25-Sep-11	4.935	97947.7	24	162.292	2970762	0.1093		5.372	89754.3	24	170.304	2788569.7	0.1221		0.1155
26-Sep-11	4.888	106323.8	24	160.918	2969292.3	0.1084		3.505	97330.6	24	167.079	2784261.3	0.1200		0.1140
27-Sep-11	4.381	103716.8	24	161.499	2981231.5	0.1083		0.87	89713.8	24	162.843	2786832.5	0.1169		0.1125
28-Sep-11	3.564	100373.3	24	159.038	2979541.8	0.1068		0.739	95176.4	24	157.117	2783494.5	0.1129		0.1097
29-Sep-11	1.42	86415.5	24	153.871	2964161.5	0.1038		0.889	80955.9	24	149.406	2762360.3	0.1082		0.1059
30-Sep-11	4.459	98949.9	24	150.868	2957620.4	0.1020		5.697	87630	24	145.539	2745001.8	0.1060		0.1040
1-Oct-11	1.929	83415.6	24	143.508	2926353.6	0.0981		0.248	50893.9	24	134.866	2687459	0.1004		0.0992
2-Oct-11	2.934	85831.9	24	135.665	2889350.5	0.0939		1.842	68745	24	125.779	2639361.4	0.0953		0.0946
3-Oct-11	3.427	105717.9	24	131.265	2885486.6	0.0910		1.817	96213.8	24	121.19	2626820	0.0923		0.0916
4-Oct-11	6.112	104893	24	130.139	2885457.5	0.0902		4.535	97661	24	121.459	2632439.8	0.0923		0.0912
5-Oct-11	3.613	106497	24	132.953	2921087.4	0.0910		4.59	97056	24	124.732	2663720.8	0.0937		0.0923
6-Oct-11	5.194	108558.3	24	134.955	2937498.7	0.0919		4.378	98614.7	24	126.564	2669968.6	0.0948		0.0933
7-Oct-11	7.117	107949.6	24	138.491	2950032.8	0.0939		5.451	96230.3	24	129.239	2674111.8	0.0967		0.0952
8-Oct-11	7.07	99817.9	24	143.505	2950181.4	0.0973		4.73	88644.1	24	131.546	2667643.4	0.0986		0.0979
9-Oct-11	7.053	97732.4	24	148.453	2942167.6	0.1009		5.225	87099.2	24	132.389	2654522.4	0.0997		0.1004
10-Oct-11	8.088	110481.7	24	150.784	2948723.5	0.1023		7.438	97413.5	24	135.397	2653339.5	0.1021		0.1022
11-Oct-11	7.576	109413.3	24	152.522	2955687.5	0.1032		7.342	98413.6	24	138.066	2654313.1	0.1040		0.1036



12-Oct-11	5.497	108161.5	24	151.274	2952478.4	0.1025		5.175	98566	24	136.675	2647354.9	0.1033		0.1028
13-Oct-11	6.291	108991.8	24	150.812	2944328	0.1024		3.796	99803.4	24	135.07	2641870.9	0.1023		0.1024
14-Oct-11	5.695	104280.6	24	150.003	2940580.5	0.1020		7.652	94903.1	24	135.733	2633734.9	0.1031		0.1025
15-Oct-11	3.427	73984.5	24	150.638	2935367.9	0.1026		4.56	86784.4	24	135.158	2639643.1	0.1024		0.1025
16-Oct-11	6.301	87865.7	24	151.19	2935400.9	0.1030		5.231	80272.5	24	136.101	2640100.1	0.1031		0.1031
17-Oct-11	5.385	106875.3	24	151.425	2971149.3	0.1019		7.847	97604.1	24	139.068	2673163.9	0.1040		0.1029
18-Oct-11	5.191	105848.1	24	151.891	2993929.3	0.1015		8.762	94695	24	143.659	2694122.8	0.1066		0.1039
19-Oct-11	5.859	107068.8	24	152.689	3002524.9	0.1017		7.467	93717.7	24	146.357	2697380.5	0.1085		0.1049
20-Oct-11	6.182	108737.5	24	155.042	3027186.3	0.1024		8.603	97205.5	24	150.405	2720176.6	0.1106		0.1063
21-Oct-11	7.682	109996.1	24	156.02	3040873.1	0.1026		9.311	98454.9	24	152.097	2731727.6	0.1114		0.1068
22-Oct-11	6.797	112226.3	24	155.846	3044309.5	0.1024		7.548	102429.3	24	152.167	2737909	0.1112		0.1065
23-Oct-11	6.6	101901.9	24	157.273	3044410.4	0.1033		4.205	93337.1	24	149.872	2742233.4	0.1093		0.1062
24-Oct-11	5.515	105127.1	24	160.182	3055100.8	0.1049		5.726	97540.4	24	150.551	2752859.5	0.1094		0.1070
25-Oct-11	6.772	104285.5	24	162.019	3061438.6	0.1058		4.851	95525.5	24	150.03	2758630.7	0.1088		0.1072
26-Oct-11	5.707	106925	24	162.838	3062039.8	0.1064		7.515	98557.2	24	154.04	2759857.3	0.1116		0.1089
27-Oct-11	7.434	109610.2	24	165.891	3067933.2	0.1081		7.671	98332.4	24	160.841	2768475.9	0.1162		0.1120
28-Oct-11	7.003	110789.2	24	169.33	3078349.1	0.1100		4.803	98689.8	24	164.905	2771989.3	0.1190		0.1143
29-Oct-11	4.871	102164.9	24	172.781	3094098.5	0.1117		3.88	88879.7	24	167.896	2779913.1	0.1208		0.1160
30-Oct-11	3.397	78058.1	24	171.719	3073206.7	0.1118		3.287	67045	24	165.486	2759328.1	0.1199		0.1156
31-Oct-11	7.411	96774.8	24	177.201	3086565.9	0.1148		6.282	88777.7	24	171.52	2797211.9	0.1226		0.1185
1-Nov-11	8.421	106853.5	24	182.688	3107587.5	0.1176		7.655	96495.5	24	177.333	2824962.4	0.1255		0.1214
2-Nov-11	3.627	105542.7	24	182.888	3107412.3	0.1177		4.685	94675	24	180.201	2823423.6	0.1276		0.1224
3-Nov-11	8.233	108052.9	24	185.009	3110572.2	0.1190		6.907	98372.4	24	182.573	2824135	0.1293		0.1239
4-Nov-11	3.614	108579.5	24	185.01	3112654.7	0.1189		5.902	97353.2	24	183.885	2824432.2	0.1302		0.1243
5-Nov-11	6.376	107074.6	24	186.192	3111171	0.1197		8.743	81744	24	188.25	2807561.5	0.1341		0.1265
6-Nov-11	5.672	91867.8	24	184.747	3095089.2	0.1194		7.422	82181.6	24	190.221	2793512.8	0.1362		0.1274
7-Nov-11	5.394	115626.4	24	183.071	3110897.7	0.1177		8.335	102762.1	24	193.826	2807630.8	0.1381		0.1274
8-Nov-11	5.651	110688.8	24	181.669	3123854.1	0.1163		7.374	99797	24	195.975	2820328.6	0.1390		0.1271
9-Nov-11	5.353	106264.1	24	178.934	3119636.5	0.1147		9.978	96306.5	24	198.515	2819221.6	0.1408		0.1271
10-Nov-11	4.777	107244.8	24	176.135	3117468	0.1130		8.118	95572.8	24	199.291	2816380.8	0.1415		0.1265
11-Nov-11	4.861	117626.4	24	175.499	3126932.9	0.1122		6.184	103585.6	24	200.3	2821400.4	0.1420		0.1264
12-Nov-11	2.98	91216.1	24	172.188	3109157.2	0.1108		4.541	68132	24	201.045	2789729	0.1441		0.1265
13-Nov-11	3.5	77733.7	24	169.993	3082610.3	0.1103		4.786	67062.8	24	198.179	2761888.7	0.1435		0.1260
14-Nov-11	4.309	96122.3	24	170.875	3104748.1	0.1101		6.338	85776.7	24	199.957	2760881	0.1449		0.1264
15-Nov-11	4.061	97663.3	24	168.635	3114545.7	0.1083		6.484	88087.6	24	201.21	2768696.1	0.1453		0.1257
16-Nov-11	4.635	96570	24	167.885	3104240.4	0.1082		7.194	83417.3	24	200.557	2754509.3	0.1456		0.1258
17-Nov-11	7.012	116265.3	24	169.706	3114657.6	0.1090		8.814	102430.2	24	200.609	2762244.5	0.1453		0.1260
18-Nov-11	8.074	114084.2	24	171.921	3121673	0.1101		8.784	105362.8	24	201.926	2773889.6	0.1456		0.1268
19-Nov-11	7.294	102061.7	24	173.033	3114997.2	0.1111		7.791	89499.9	24	201.114	2766184	0.1454		0.1272
20-Nov-11	7.118	100883.3	24	172.469	3105884.4	0.1111		7.059	90357.2	24	198.862	2758086.3	0.1442		0.1266
21-Nov-11	6.227	114103.7	24	171.899	3107761.8	0.1106		6.874	99900.1	24	198.188	2755557.1	0.1438		0.1262
22-Nov-11	6.745	111851.7	24	172.044	3117711.6	0.1104		7.57	98027.6	24	201.553	2760247.6	0.1460		0.1271
23-Nov-11	5.014	109368.1	24	171.543	3121952.6	0.1099		6.894	95585.3	24	202.721	2758292.5	0.1470		0.1273
24-Nov-11	3.049	89380.8	24	167.82	3107047.9	0.1080		4.758	76009.7	24	202.628	2738776.7	0.1480		0.1267
25-Nov-11	2.927	83070.9	24	165.04	3083193.8	0.1071		5.46	73541.6	24	200.573	2713761.1	0.1478		0.1261
26-Nov-11	3.147	77590.9	24	160.753	3051174.5	0.1054		4.595	68091.6	24	197.497	2683520.3	0.1472		0.1249
27-Nov-11	3.985	78101.6	24	157.735	3018486.9	0.1045		4.434	69831.8	24	197.128	2654662.3	0.1485		0.1251
28-Nov-11	4.738	98725.4	24	157.602	3015047.4	0.1045		6.393	84777.2	24	199.641	2650559.8	0.1506		0.1261
29-Nov-11	5.11	103663.3	24	159.315	3040652.6	0.1048		6.558	87057.7	24	202.912	2670572.5	0.1520		0.1268
30-Nov-11	5.687	119403	24	157.591	3063280.8	0.1029		6.207	102582	24	202.837	2684376.8	0.1511		0.1254
1-Dec-11	5.709	123650.2	24	154.879	3080077.5	0.1006		7.251	106981.6	24	202.433	2694862.9	0.1502		0.1237
2-Dec-11	5.416	121092.9	24	156.668	3095627.7	0.1012		5.628	104446	24	203.376	2704633.9	0.1504		0.1241
3-Dec-11	4.207	116185.9	24	152.642	3103760.7	0.0984		5.151	100700.6	24	201.62	2706962.1	0.1490		0.1219
4-Dec-11	7.395	103034.5	24	156.423	3098215.7	0.1010		7.415	89428.8	24	203.133	2699037.7	0.1505		0.1240
5-Dec-11	5.483	110355.1	24	155.53	3101496.2	0.1003		6.01	94719.7	24	200.4	2712013.4	0.1478		0.1224
6-Dec-11	4.849	112442.2	24	154.707	3122070.6	0.0991		6.981	100776.9	24	199.959	2730608.7	0.1465		0.1212
7-Dec-11	5.459	108433.8	24	154.772	3114878	0.0994		11.417	94303.6	24	203.041	2722150.2	0.1492		0.1226
8-Dec-11	5.498	120768.7	24	154.619	3124957.9	0.0990		12.037	105648.2	24	207.704	2728001.4	0.1523		0.1238

9-Dec-11	2.496	79669.5	24	151.762	3098363.3	0.0980		11.625	103398	24	209.351	2735092.9	0.1531		0.1238
10-Dec-11	1.942	75123.9	24	148.927	3066242.4	0.0971		11.274	99220.3	24	212.507	2738740.4	0.1552		0.1245
11-Dec-11	5.121	94887.1	24	149.187	3043503.1	0.0980		11.06	96349.4	24	217.383	2731504.2	0.1592		0.1270
12-Dec-11	7.529	109690.7	24	153.736	3061977.7	0.1004		11.881	105987.9	24	224.723	2769360.1	0.1623		0.1298
13-Dec-11	8.31	108076.3	24	158.546	3092320.3	0.1025		11.624	98106.9	24	231.561	2800404.2	0.1654		0.1324
14-Dec-11	4.737	108269.7	24	158.974	3104467.7	0.1024		11.508	93550.1	24	236.731	2808177.6	0.1686		0.1339
15-Dec-11	5.874	92747.8	24	160.787	3099552.2	0.1037		10.787	83777.4	24	241.034	2803867.4	0.1719		0.1361
16-Dec-11	5.472	113064.7	24	161.624	3116046.9	0.1037		11.347	94804.3	24	245.187	2815254.4	0.1742		0.1372
17-Dec-11	9.629	122418.5	24	164.241	3122200.1	0.1052		7.595	104994.6	24	243.968	2817818.8	0.1732		0.1374
18-Dec-11	7.214	117057.3	24	163.381	3125173.2	0.1046		6.871	99173.7	24	242.055	2811629.7	0.1722		0.1366
19-Dec-11	6.153	116352.3	24	162.24	3139463.8	0.1034		6.87	98911.4	24	241.134	2821041.2	0.1710		0.1353
20-Dec-11	5.688	105537.3	24	160.81	3144117.8	0.1023		4.726	89189.1	24	238.801	2819873.1	0.1694		0.1340
21-Dec-11	6.607	106757.3	24	161.19	3136771.4	0.1028		5.503	93821.7	24	237.43	2813794.7	0.1688		0.1340
22-Dec-11	6.653	111679.2	24	161.098	3136598.9	0.1027		7.041	96114.8	24	236.901	2811881.9	0.1685		0.1338
23-Dec-11	6.499	110530.2	24	162.583	3137761	0.1036		8.019	92810.6	24	238.026	2809107.2	0.1695		0.1347
24-Dec-11	6.124	110975.5	24	165.658	3159355.7	0.1049		6.386	91306.6	24	239.654	2824404.1	0.1697		0.1355
25-Dec-11	3.911	95782.4	24	166.642	3172067.2	0.1051		6.892	75563.8	24	241.086	2826426.3	0.1706		0.1359
26-Dec-11	3.29	93854.2	24	166.785	3188330.5	0.1046		8.159	78963.8	24	244.65	2837298.5	0.1725		0.1366
27-Dec-11	7.591	109629.3	24	170.391	3219858.2	0.1058		11.206	92574.2	24	251.422	2860040.9	0.1758		0.1388
28-Dec-11	6.304	112867.3	24	171.957	3234000.1	0.1063		10.795	95483.6	24	255.824	2870747.3	0.1782		0.1401
29-Dec-11	11.939	118340.8	24	178.786	3248677.6	0.1101		7.131	101887.5	24	256.397	2885577.1	0.1777		0.1419
30-Dec-11	6.718	99144	24	179.817	3228418.6	0.1114		5.693	89817.9	24	255.883	2872813	0.1781		0.1428
31-Dec-11	4.54	86907.7	24	178.648	3191676.1	0.1119		3.411	72719.6	24	252.043	2838551	0.1776		0.1428

Number of Days with 30 BOD Average SO2 &gt; 0.2 lb/MMBtu

40

43

72





29-Jul-11	5.734	131670.3	24	174.311	3698680.4	0.0943	5.569	136368.3	24	138.844	3732858.1	0.0743	5.58	136017.7	24	179.818	3721296.8	0.0966	12.014	143721.1	24	311.306	3969237.1	0.1569	0.1063
30-Jul-11	3.642	127721.6	24	166.588	3703571.1	0.0900	3.633	131046.8	24	138.205	3739126.2	0.0739	4.852	121508.1	24	181.528	371721.4	0.0973	7.188	139946.9	24	312.637	4060366.2	0.1561	0.1063
31-Jul-11	3.955	119782.2	24	178.738	3703554.3	0.0884	4.021	125067.2	24	138.716	374886.2	0.0740	3.911	123692.7	24	193.331	374117.5	0.0979	6.802	136029.8	24	313.639	403451.8	0.1555	0.1050
1-Aug-11	5.075	130175.9	24	163.738	3715258.8	0.0881	3.986	130043.4	24	138.657	3759019.8	0.0738	4.369	130019.2	24	184.639	3750579.3	0.0955	8.203	140217.8	24	315.444	409146.3	0.1558	0.1051
2-Aug-11	3.954	128461.4	24	164.392	372623.4	0.0882	3.786	134778.9	24	138.353	377952.6	0.0732	42.953	129271.4	24	224.053	375395.1	0.1194	6.293	140921.4	24	314.611	405020.7	0.1552	0.1099
3-Aug-11	3.528	132017.9	24	164.102	3744597.4	0.0876	4.249	136247.4	24	138.371	3806195.1	0.0727	2.702	125259.2	24	223.131	3756164.8	0.1188	7.282	139422.4	24	314.265	406202.6	0.1548	0.1093
4-Aug-11	4.033	124935.8	24	164.566	3753582.9	0.0877	3.908	134048.9	24	138.055	3816584.1	0.0723	3.975	124897.1	24	221.787	3751152.3	0.1179	6.136	136659.1	24	313.368	406463.5	0.1537	0.1087
5-Aug-11	4.625	128282.9	24	165.068	3760886.3	0.0878	3.738	135877.2	24	137.176	3824497.2	0.0717	4.928	129839.1	24	221.385	379335.4	0.1179	6.507	139745.8	24	309.094	407205.3	0.1513	0.1081
6-Aug-11	4.193	125265.1	24	164.801	3767104.1	0.0875	4.634	133001.5	24	135.23	3835221.1	0.0705	2.843	125719.3	24	221.994	3800182.3	0.1168	7.499	139033.8	24	308.419	407076.7	0.1516	0.1073
7-Aug-11	4.719	123495.9	24	165.025	3769834.3	0.0876	5.641	126475.4	24	134.631	3841346.5	0.0701	3.301	124043.1	24	218.474	3794755.6	0.1151	8.924	138050.5	24	311.048	409328.6	0.1520	0.1070
8-Aug-11	4.64	126072.4	24	165.184	3780951.1	0.0878	5.587	125668.4	24	136.32	3854005.5	0.0707	4.453	126025.4	24	218.388	3797732.2	0.1150	10.469	140883.8	24	314.773	410738	0.1533	0.1074
9-Aug-11	5.35	135128.2	24	165.247	378523.9	0.0871	4.803	135128.2	24	137.023	3862333.1	0.0702	4.865	128712	24	215.689	3802013.1	0.1140	6.292	138551.3	24	313.018	40817.8	0.152	0.1068
10-Aug-11	5.637	133907.3	24	163.993	3797267	0.0864	4.361	128472.2	24	135.27	3868086.2	0.0701	5.594	121811.8	24	214.54	3797434.7	0.1130	5.789	131848.2	24	305.376	409833.5	0.1490	0.1053
11-Aug-11	4.67	133643.6	24	161.548	3804585.5	0.0849	4.607	120473.6	24	135.963	3863933.9	0.0704	5.143	118725	24	214.095	3794071.1	0.1129	7.051	131226.1	24	301.659	409566.9	0.1475	0.1046
12-Aug-11	22.87	161.548	3804585.5	0.0849	0.47	0	0	0	6.145	121348.6	24	208.447	3788475.8	0.1100	7.61	129352.4	24	299.844	408354.6	0.1469	0.1147	0	0	0	0
13-Aug-11	0	161.548	3804585.5	0.0849	0	0	0	0	4.474	121262.9	24	207.559	3782396.6	0.1097	5.885	129588.4	24	296.637	4075595.6	0.1456	0.1142	0	0	0	0
14-Aug-11	0	161.548	3804585.5	0.0849	0	0	0	0	3.432	121411.9	24	206.294	379295.4	0.1088	4.857	118696.9	24	295.271	4090796	0.1454	0.1138	0	0	0	0
15-Aug-11	0	161.548	3804585.5	0.0849	2.458	87095.4	24	133.625	3829502.9	0.0698	3.649	121367.6	24	203.025	3792641.2	0.1071	6.009	129453.9	24	281.492	4066810.4	0.1384	0.1006	0	0
16-Aug-11	0	161.548	3804585.5	0.0849	2.765	120565.7	24	132.392	3828458.4	0.0692	4.073	121418.3	24	199.552	3789193.5	0.1053	7.964	127905.5	24	280.782	4064389.2	0.1382	0.1000	0	0
17-Aug-11	17.72	161.548	3804585.5	0.0849	4.006	119062.1	24	132.524	3823325.2	0.0693	6.228	124319.2	24	201.263	3784736.5	0.1064	8.849	132003	24	283.04	4062274.8	0.1394	0.1006	0	0
18-Aug-11	2.695	124081.7	24	158.516	3749556.4	0.0848	4.265	124081.7	24	130.683	3824628.6	0.0692	4.073	121811.1	24	201.689	3791152.3	0.1064	6.314	132669.1	24	292.408	406991.8	0.1390	0.0999
19-Aug-11	2.557	122421.9	24	154.722	3818377.8	0.0810	2.527	119262.2	24	128.197	3817907.6	0.0672	3.041	122424.7	24	200.302	3774165.6	0.1061	7.496	131768.5	24	282.799	4062086	0.1392	0.0990
20-Aug-11	2.829	118693.4	24	150.735	3815940.8	0.0790	2.525	116415.6	24	127.962	3799911.6	0.0673	3.058	113024.4	24	194.228	3752036.8	0.1035	8.111	127777.1	24	279.511	4051196	0.1380	0.0976
21-Aug-11	3.733	115272.2	24	146.724	3804279.5	0.0771	2.833	114442.3	24	127.502	3794542.3	0.0672	3.765	112790.1	24	191.044	3731148.1	0.1024	12.388	126583.3	24	284.695	4036574	0.1411	0.0975
22-Aug-11	3.629	116325.1	24	144.726	3798498.5	0.0764	4.133	114072.5	24	126.551	3791394.6	0.0668	3.548	117551.8	24	190.045	3722192.6	0.1021	9.901	123100.8	24	285.975	4021434.6	0.1422	0.0970
23-Aug-11	3.953	113851.4	24	141.548	379352.3	0.0767	3.512	113851.4	24	126.909	3792654.2	0.0642	4.088	117109.2	24	187.476	371453.9	0.1026	6.72	127714.2	24	297.526	4030823	0.1434	0.0972
24-Aug-11	3.336	124570.2	24	145.309	3790991.3	0.0764	2.633	124105.8	24	118.763	3758381.3	0.0632	4.398	122752.5	24	191.278	3707354.8	0.1032	10.323	128554.4	24	240.196	4002111.1	0.1420	0.0912
25-Aug-11	3.759	112926.3	24	143.397	3781056.3	0.0759	3.484	120742.5	24	117.806	3753892.9	0.0628	4.232	122229.6	24	191.832	3701665.7	0.1034	5.104	126084.3	24	239.231	3991870.2	0.1199	0.0909
26-Aug-11	3.353	118617.2	24	130.976	3765097.8	0.0718	3.515	117592.7	24	116.944	3750027	0.0624	3.85	116890.6	24	190.442	3691310.7	0.1034	5.62	126646.3	24	239.678	3982794.8	0.1204	0.0899
27-Aug-11	2.891	116651.2	24	130.976	3749556.4	0.0617	3.384	114515.4	24	116.197	3734939.6	0.0622	4.476	110675.5	24	164.772	3654672.5	0.0502	4.867	118143.9	24	215.891	3942438.9	0.1095	0.0897
28-Aug-11	3.192	107157.1	24	127.115	3730337.1	0.0681	0	0	0	0	0	0	4.245	120157.2	24	164.165	368320.6	0.0899	4.244	127429.7	24	212.947	3929977.1	0.1084	0.0889
30-Aug-11	3.673	120030.4	24	123.514	3721651.9	0.0664	0	0	0	4.258	115166.1	24	163.482	3643521.6	0.0897	5.534	124810.9	24	211.679	3919129.8	0.1080	0.0884			
31-Aug-11	3.078	125039.7	24	124.934	3722165.6	0.0655	7.014	122378.3	24	129.127	3635880.7	0.0620	7.536	130897.5	24	211.038	3806959.5	0.1080	7.536	130897.5	24	211.038	3806959.5	0.1080	0.0998
1-Sep-11	3.023	122084.2	24	119.787	371952.3	0.0644	6.51	122084.2	24	122.958	364742.8	0.0617	6.51	122084.2	24	212.684	367902.2	0.1026	6.827	131745.5	24	215.727	3900423	0.1118	0.0865
2-Sep-11	3.023	122084.2	24	117.291	3716708.5	0.0631	3.274	133784.3	24	114.946	3738786.1	0.0615	7.742	128771.8	24	197.724	3632718.8	0.1089	9.899	138655.3	24	217.987	3899555.9	0.1118	0.0865
3-Sep-11	3.512	127592.4	24	115.069	3712630.6	0.0620	3.985	126107.8	24	113.584	3734309.8	0.0618	6.696	125694.2	24	200.545	3635305.9	0.1104	9.998	138290.9	24	221.847	3898817.7	0.1139	0.0869
4-Sep-11	3.478	118982.8	24	114.905	3703981.8	0.0620	4.562	115323.8	24	113.889	3716536.4	0.0613	6.846	119378.2	24	202.463	3624045	0.1117	6.317	124753	24	221.567	3881824.9	0.1142	0.0875
5-Sep-11	2.61	97974.3	24	113.566	3639803.4	0.0617	3.411	98411	24	111.851	3679578.1	0.0598	2.982	101528.8	24	202.802	359985.5	0.1126	5.698	108716.6	24	219.768	3851598.7	0.1141	0.0874
6-Sep-11	2.912	104638.2	24	111.307	3658346.2	0.0609	3.54	101845.6	24	112.138	3687116.9	0.0615	3.987	108585.8	24	203.198	3582310.3	0.1134	5.45	109565.7	24	218.629	3820249.1	0.1142	0.0874
7-Sep-11	3.325	105053.6	24	110.768	3634938.4	0.0609	3.979	103378.2	24	112.096	3625786.4	0.0618	3.595	108525	24	202.34	3581810.8	0.1136	6.329	114102.8	24	211.152	3796243.9	0.1112	0.0871
8-Sep-11	10.528	112408.8	24	117.768	3615329.3	0.0651	3.277	10266.3	24	111.387	3598429.3	0.0619	3.096	111452.8	24	200.571	3565516.6	0.1131	6.624	117960.3	24	211.484	377352.9	0.1120	0.0882
9-Sep-11	3.577	123652.3	24	117.312	3614927.8	0.0649	3.732	121498	24	111.333	3585136.4	0.0621	3.581	112215.2	24	198.558	3546897	0.1120	8.202	119592.3	24	213.897	3761457	0.1137	0.0884
10-Sep-11	3.737	121994.4	24	116.474	3608633.7	0.0646	3.567	120271.1	24	110.841	35689116.5	0.0620	4.152	121462.9	24	207.567	3549634.9	0.1113	7						



**ORAL ARGUMENT NOT YET SCHEDULED**

No. 12-1194 (Consolidated with No. 12-1100)

**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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WHITE STALLION ENERGY CENTER, L.L.C., *et al.*,  
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,  
*et al.*,  
Respondents.

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*Petition for Review of Final Agency Action*

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**DECLARATION OF ROBERT DANIELS**

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I, Robert Daniels, declare and state and as follows:

1. My name is Robert Daniels. I live at 983 Chestnut Manor Court, Chestnut Hill Cove, MD 21226. My home is located approximately one mile south of the Fort Smallwood coal-fired power plant complex, and I can see the stacks of the plant from my backyard. I have lived at this location since 2007.

2. I have been a member of the Chesapeake Climate Action Network for about three years. I joined CCAN because I am concerned about global warming and want to do what I can to help reduce our carbon footprint and other pollution from power plants. I am aware that the Fort Smallwood plant and other power plants are a significant emitter



of the world's greenhouse gas emissions. As an oceanographer studying the role of oceans in the carbon cycle, I am aware of the severe consequences global warming can have on the environment and human populations.

3. I am also aware that power plants like Fort Smallwood emit large quantities of mercury, heavy metal, particulate matter, and other pollution that causes asthma and has other harmful effects on health. I am concerned about the impact of pollution from the Fort Smallwood complex and other power plants on my health, the health of my community, and the environment.

4. I appreciate the U.S. Environmental Protection Agency's (EPA) efforts to set standards to reduce toxic pollution from coal-fired power plants and limit the impact of this pollution on my health.

5. I understand that emission limits under the new rules must be met at all times, with very narrow exceptions. However, I also understand that the new rule does not require power plant operators to use continuous monitoring of emissions to demonstrate compliance with the new emission limits. I have been informed that the rules allow power plant operators to show they are meeting emission limits based



on a brief test measuring toxic metal concentrations that could be conducted as seldom as once every three years or operating parameters linked to emissions higher than the standard allows.

6. I am concerned that the weak or inaccurate monitoring requirements in the new rules means that I (and the EPA and Maryland Department of the Environment) will not really know how much pollution is emitted from the Fort Smallwood complex and other power plants and that the new emission limits will not be met in practice. I am concerned that insufficient monitoring will expose me and my community to higher levels of pollution than the law allows.

7. If the monitoring provisions of the new rules were remanded, EPA could strengthen them in accordance with the Clean Air Act. EPA's revision of the MATS rule to comply with the Clean Air Act and require monitoring that accurately measures air pollution on a continuous basis will address my concerns.

Executed on this 23rd day of October, 2012, in Washington, District of Columbia.



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Robert Daniels

**ORAL ARGUMENT NOT YET SCHEDULED**

*No. 12-1194 (Consolidated with No. 12-1100)*

**IN THE UNITED STATES COURT OF APPEALS  
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WHITE STALLION ENERGY CENTER, L.L.C., *et al.*,

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *et al.*,

Respondents.

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*Petition for Review of Final Agency Action*

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**DECLARATION OF MICHAEL TIDWELL**

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I, Michael Tidwell, declare and state as follows:

1. I am the founder and director of the Chesapeake Climate Action Network (“CCAN”).
2. CCAN is a grassroots non-profit organization dedicated to raising awareness about the impacts and solutions associated with global warming in Maryland, Virginia, and Washington, D.C.

3. CCAN was founded in 2002 in order to combat climate change through a transition to clean energy generation in the mid-Atlantic region—specifically Maryland, Virginia, and Washington, D.C.

4. The education and mobilization of citizens in order to create a societal switch towards clean energy solutions and away from fossil fuel energy generation is the centerpiece of CCAN's mission.

5. CCAN's efforts to transition to a clean energy-powered society include ensuring that fossil fueled-powered facilities, such as coal-fired power plants, do not threaten public health or the environment through emissions of hazardous air pollutants such as mercury, acidic gases and non-mercury metallic toxics.

6. CCAN has brought Clean Air Act citizen suits on behalf of its members to combat illegal emissions of air pollutants from coal-fired power plants and participated in the Clean Air Act Title V permitting process for coal-fired power plants. CCAN is dedicated to preventing future harm to the environment and public health from these types of dangerous air pollutants, on behalf of its members.

7. CCAN has over 90,000 members in Maryland, Virginia and Washington, D.C. CCAN's members live, exercise, work, raise children,

garden, fish, and recreate on a regular basis in and around coal-fired power plants located in Maryland, Virginia, and Washington, D.C., including power plants that have violated air pollution limits in the past.

8. CCAN and its members are concerned about the environmental harms that will result from deficiencies in certain provisions of the standard developed by the Environmental Protection Agency (“EPA”) to limit mercury and air toxics emissions from coal-fired power plants. (i.e. The Mercury and Air Toxics Standards or “MATS rule”). CCAN and its members believe that the United States District Court of Appeals for the District of Columbia Circuit should remand EPA’s MATS rule in order to strengthen certain provisions of the standard associated with mercury and air toxics emissions as outlined in the corresponding attached brief.

9. Specifically, the weak monitoring provisions for non-mercury hazardous metals in the MATS rule (which limits stack testing in some cases to once every three years) would make violations much harder to detect, thus reducing the incentive to comply and the government’s ability to enforce the standard. The rule also includes a “parametric”

monitoring option that would allow power plants to certify compliance based on emission levels that exceed the standard.

10. The failure to require effective monitoring of these limits means that CCAN and the state environmental agencies charged with enforcing the law will not know whether plants are meeting the new emission limits. The lack of sufficient monitoring hinders CCAN's organizational interest in informing members about air pollution from power plants. Our organization and members have the right to know how much pollution is actually being released by power plants close to where they live. In addition, the failure to require continuous monitoring of pollution to demonstrate compliance with emission limits will make it more difficult for CCAN to protect members from illegal pollution at power plants in judicial and administrative proceedings.

11. The monitoring deficiencies in the MATS rule will expose our members who live near, and breathe the air around, power plants in Maryland and Virginia to higher levels of hazardous metals. EPA has determined that exposure to hazardous metals from power plants can be harmful, and that the limits set in the MATS rule on these types of pollutants, are meant to protect public health. However, the standard



will mean little without monitoring to ensure the limits will be actually be met.

12. EPA's flawed decision to allow power plants to average their emissions across multiple units (at the same power plant) weakens the standard and exposes our members to higher levels of emissions that EPA has determined can be harmful. Our concern may be illustrated by a real-world example of a multiple unit plant complex impacting our members in Baltimore City. The Fort Smallwood complex includes recently retrofitted coal-fired units (Brandon Shores) and an older, grandfathered unit (Herbert Wagner). If the plant-wide averaging provision of the MATS rule is upheld, the older Wagner unit can emit at a rate and in amounts up to three times higher than it would be allowed to emit if each unit were required to separately meet the standards.

13. If these deficient provisions are remanded, EPA could strengthen monitoring in accordance with the Clean Air Act and require individual units to meet the new emission limits. EPA's revision of the MATS rule to strengthen monitoring requirements and require individual units to meet emission limits will help address CCAN's concerns.

**I declare, under penalty of perjury, that the foregoing is true and correct.**

**Executed on this 23rd day of October, 2012, in Washington, District of Columbia.**

A handwritten signature in black ink, appearing to read "Michael Tidwell", is written over a solid horizontal line.

**Michael Tidwell, Director  
Chesapeake Climate Action Network**

ORAL ARGUMENT NOT YET SCHEDULED

**UNITED STATES COURT OF APPEALS  
DISTRICT OF COLUMBIA CIRCUIT**

WHITE STALLION ENERGY CENTER, )  
LLC, *et al.*, )

Petitioners, )

v. )

UNITED STATES ENVIRONMENTAL )  
PROTECTION AGENCY, *et al.*, )

Respondent. )

Case No. 12-1194  
(consolidated with 12-1100)

DECLARATION OF  
JEAN ENO

County of Rockingham )

State of New Hampshire )

I, Jean Eno, hereby declare and state:

1. This declaration is based on my personal and professional knowledge, information, and belief. I am over the age of eighteen years and suffer from no legal incapacity. I submit this declaration in support of the Conservation Law Foundation’s (“CLF’s”) maintenance of this action.

2. I am currently a member of CLF, and have been since 2002.

3. I live at 28 Bay Shore Drive in Greenland, New Hampshire, in Rockingham County. I have lived here for eleven years. My home is approximately 5 miles from Schiller Power Station (“Schiller”).



4. I am 47 years of age. My spouse, whom I've been married to for twenty years, is 63 years of age.

5. I graduated from the University of New Hampshire in 2008 as a Presidential Scholar with a B.S. in Environmental Conservation Studies.

6. I am currently employed by the Marine Fisheries Division of New Hampshire Game and Fish Department, where I work as a Park Guide (naturalist and educator) for the Great Bay National Estuarine Research Reserve. This work is conducted out of the Great Bay Discovery Center (educational headquarters for the reserve) located at 89 Depot Road, Greenland, NH, approximately 6 miles away from Schiller. In my employment, I spend many hours outdoors, leading grade school-aged children around the shore of Great Bay, educating them about environmental issues facing the area and promoting the conservation of the surrounding environment.

7. I was diagnosed with asthma approximately three years ago, prescribed both corticosteroid and bronchodilator (non-steroidal) inhalers, and continue treatment to date.

8. I am aware, through my work and my involvement with CLF, that on February 16, 2012 the United States Environmental Protection Agency ("U.S. EPA") promulgated a final rule titled "National Emission Standards for Hazardous Air Pollutant Emissions from Coal- and Oil-Fired Electric Utility Steam

Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units.” 77 Fed. Reg. 9,304 (Feb. 16, 2012) (“MATS Rule”).

9. I understand that the MATS Rule establishes emission limits for the coal- and oil-fired power plants, among the largest stationary sources of mercury, and other air toxics. EPA set numeric limits for particulate matter (as a surrogate for non-mercury toxic metals like chromium, arsenic, and lead), and hydrogen chloride (as a surrogate for acid gases) but sets a work-practice standard for emissions of dioxins, formaldehyde, and other organic air toxics generated by coal- and oil-fired power plants.

10. Through my involvement with CLF and my work experience, I am aware that human exposure to higher levels of non-mercury hazardous air pollutants has been associated with long-term health disorders, including effects on the central nervous system, as well as acute health disorders, such as irritation of the respiratory system, nausea and vomiting.

11. I am further aware that emissions of acid gases can have an adverse impact on the aquatic environment, resulting in acidification on the ecosystems surrounding the source of the emissions.

12. I am also aware that the MATS Rule sets standards for existing units, but allows multi-unit facilities to comply with the existing source emission standards through an “averaging” provision that will permit a unit at a multi-unit facility to exceed the standard by averaging those higher emissions with other lower-emitting units, something that would not be permitted under unit-by-unit compliance.

13. Moreover, I am aware that the averaging provision will also allow more short-term “peak” emissions of hazardous air pollutants, as well as higher overall hazardous air pollution emissions, from units that comply through the averaging provision than would be allowed by unit-by-unit compliance.

14. I am aware that EPA declined to establish a lower standard for those units choosing to comply via the averaging provision, even though extending the amount of operating hours over which a unit measures compliance effectively weakens the stringency of the existing source standards in the MATS Rule.

15. I am aware that Schiller Power Station is a multi-unit facility and that the averaging compliance option is available to the facility.

16. It is my understanding that some adverse health effects associated with non-mercury HAPs are dependent upon the level of exposure (*i.e.* quantity of emissions).

17. It is my concern that under EPA’s approach to compliance—through an averaging provision without a discount factor—my family and I will be exposed to

higher levels of hazardous air pollutants than the emissions that would occur if unit-by-unit compliance with EPA's standards were required.

18. This concern is driven by my physical activities in the course of my job, my asthma, and the proximity of my home and my work to Schiller. Specifically, I am concerned that the averaging provision will lead to higher exposure levels in and around Great Bay, making it more difficult for me to perform my work duties—including physically intensive activities like hiking—and will lead to an increase in the frequency of asthma attacks.

19. I am also concerned that with the averaging provision in the MATS Rule, an increase in higher-pollution episodes will lead to acidification and other impacts in Great Bay.

I declare under the penalty of perjury that the foregoing is true and correct.

Executed on August 23, 2012

/s/ Jean Eno

Jean Eno

ORAL ARGUMENT NOT YET SCHEDULED

**UNITED STATES COURT OF APPEALS  
DISTRICT OF COLUMBIA CIRCUIT**

\_\_\_\_\_  
 WHITE STALLION ENERGY CENTER, )  
 LLC, *et al.*, )  
 )  
 Petitioners, )  
 v. )  
 )  
 UNITED STATES ENVIRONMENTAL )  
 PROTECTION AGENCY, *et al.*, )  
 )  
 Respondent. )  
 \_\_\_\_\_)

Case No. 12-1194  
(consolidated with 12-1100)

DECLARATION OF  
TIMOTHY HARWOOD

County of Suffolk )  
 )  
 Commonwealth of Massachusetts )

I, Timothy Harwood, hereby declare and state:

1. This declaration is based on my personal knowledge, information, and belief. I am over the age of eighteen years and suffer from no legal incapacity. I submit this declaration in support of the Conservation Law Foundation’s (“CLF’s”) standing to maintain this action.

2. I am the Vice President for Development of CLF, a nonprofit, membership-supported corporation organized and existing under the laws of the Commonwealth of Massachusetts. I have held this position since May 1, 2006. In

that capacity, I am familiar with CLF's mission, which is to work to solve the most significant environmental challenges facing New England. I also understand the nature and scope of CLF's membership, and the manner in which information on members can be retrieved.

3. Founded in 1966, CLF is the oldest regional environmental advocacy organization in the nation. CLF has offices in Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. CLF's membership consists of approximately 3,275 individuals, residing in twenty-six states and the District of Columbia, though the largest numbers of members reside in Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

4. As a result of my work at CLF, I am aware that CLF's membership records include the address of each member. These records are regularly updated to add new members and reflect address changes. The records are maintained on a computer database, and the membership information provided below is from this database.

5. As a result of my work at CLF, I am aware that CLF works to protect New England's people, natural resources and communities, by working to promote renewable energy and fight air and water pollution; build healthy fishing communities and protect fisheries habitat; fight sprawl, promote public transit and

public health. Advocacy to limit our members' exposure to toxic air pollution, and to contaminated natural resources, is a core part of CLF's mission.

6. As a result of my work at CLF, I am aware that there are large coal-fired power plants in Massachusetts and southern New Hampshire that are among the largest emitters in New England of mercury and other hazardous air pollutants, including arsenic, lead, and dioxins. I am further aware that exposure to these chemicals by simply breathing them can be hazardous to human health, and exposure to non-mercury hazardous air pollution has been associated with long-term health disorders, including effects on the central nervous system, as well as acute health disorders, such as irritation of the respiratory system, nausea and vomiting. All of our members breathe and therefore are at risk; however, many of our members are at a heightened risk of increased exposure as they enjoy recreating outdoors.

7. I am aware through my study and my work that on February 16, 2012 the United States Environmental Protection Agency ("U.S. EPA") promulgated a final rule titled "National Emission Standards for Hazardous Air Pollutant Emissions from Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units." 77 Fed. Reg. 9,304 (Feb. 16, 2012) ("MATS Rule").

8. As a result of my work at CLF, I am aware that CLF's staff relies on sound science, and uses the law to create and advocate for innovative strategies to protect public health, conserve natural resources, and promote vital communities in the region. As such, CLF has a long history with the hazardous air pollutant emissions from coal- and oil-fired power plants. For example, I am aware that CLF was part of the plaintiff coalition that sued EPA for a violation of its mandatory duty under 42 U.S.C. §7412(d) to promulgate timely emissions standards for hazardous air pollutants from coal- and oil-fired power plants. *See American Nurses Ass'n v. Jackson*, Case No. 08-2198 (D.D.C. April 15, 2010). As a result of my work with CLF, I am further aware that the plaintiffs and EPA entered into a Consent Decree under which EPA agreed to perform this duty, the ultimate result of which is the MATS Rule.

9. I understand that the MATS Rule establishes emission limits for the largest stationary sources of mercury, particulate matter (as a surrogate for non-mercury toxic metals like chromium, arsenic, and lead), and hydrogen chloride (as a surrogate for acid gases) from coal- and oil-fired power plants, as well as sets a work-practice standard to reduce emissions of dioxins, formaldehyde, and other organic air toxics generated by coal- and oil-fired power plants.

10. I am also aware that the MATS Rule allows multi-unit facilities to comply with the existing source emission standards through an "averaging"



provision. The averaging provision is less stringent than the emission control achieved by the best-performing plants; and therefore, multi-unit facilities that use averaging exceed the standard. By complying via the averaging provision, multi-unit facilities are permitted to average higher emissions from units with emissions from other lower-emitting units. Instead of averaging over 30 days, as is the standard for single unit facilities, multi-unit facilities may essentially average over a longer period. For example, a three-unit facility's averaging period would be 90 days—30 days for each unit. As such, multi-unit facilities may average emissions over a longer time period, and because a plant's maximum emission rate over a short averaging period is less than its maximum value over a long averaging period, the additional amount of time granted to multi-unit plants for averaging allows higher emission units to continue to pollute unchecked. This would not be permitted under unit-by-unit compliance.

11. I am also aware that this averaging provision allows more short-term "peak" emissions of hazardous air pollutants, as well as higher overall hazardous air pollution emissions, from units that comply through the averaging provision than would be allowed by unit-by-unit compliance.

12. I am therefore concerned that without a proper discount factor, the averaging provision permits coal- and oil-fired power plants to emit hazardous air

pollutants at higher levels than they would through unit-by-unit compliance, and that CLF members will be exposed to such high levels of hazardous air pollutants.

13. I therefore make this declaration in support of CLF's action in this case.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 22, 2012.

/s/ Timothy Harwood  
Timothy Harwood

**ORAL ARGUMENT NOT YET SCHEDULED**

*No. 12-1194* (Consolidated with No. 12-1100)

**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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WHITE STALLION ENERGY CENTER, L.L.C., *et al.*,  
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,  
*et al.*,  
Respondents.

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*Petition for Review of Final Agency Action*

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**DECLARATION OF ERIC SCHAEFFER**

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I, Eric Schaeffer, declare and state and as follows:

1. My name is Eric Schaeffer. I am the Executive Director of the Environmental Integrity Project (EIP). I founded the organization in 2002, and have served as the Executive Director since 2002.

2. The Environmental Integrity Project is a 501(c)(3) organization based in Washington, D.C. dedicated to ensuring the effective enforcement of state and federal environmental laws to protect public health and the environment. EIP's offices are located at One Thomas Circle, Suite 900, Washington, D.C. 20005 and 1303 San Antonio, Suite 200, Austin, TX 78701.

3. EIP was specifically founded to advocate for the effective enforcement of environmental laws pertaining to large sources of air pollution, including power plants, due to their significant environmental impacts and the political pressures that can come into play in regulating and enforcing against these facilities.

4. As part of this mission, EIP has invested substantial time and effort documenting how air pollution caused by coal fired power plants threatens human health and the environment. For example, in June 2012, EIP published a report with Professor Jonathan Levy detailing how the social costs associated with the premature deaths of citizens living near certain coal-fired power plants outweigh the value of the energy these plants produce. EIP uses this information to educate the public and help ensure large pollution sources comply with state and federal environmental laws.

5. In addition to informing the public about power plant emissions through reports, EIP represents citizens and groups, on a pro bono basis, who are harmed by coal-fired power plants in their communities. EIP advocates on their behalf by reviewing permits required under the

Clean Air Act and challenging them when necessary, and by bringing enforcement actions when plants violate conditions of state issued permits or federal law.

6. EIP also invested substantial time and effort producing a 234-page package commenting on the MATS Rule on August 4, 2011. Since the final rule was published in February 2012, EIP has invested significant resources analyzing how the EPA calculated “average emission limitation achieved by the best performing 12 percent of the existing sources” (allowing older, adjacent facilities to be averaged in with new ones) varied from the approach utilized in the proposed rule and the effects of these changes on risks to human health.

7. EIP has frequently challenged the lack of adequate monitoring requirements in regulations, and in individual Clean Air Act permits. For example, EIP has criticized reliance on occasional stack testing to determine compliance with particulate matter limits that must be met on an hourly basis. EIP has also brought enforcement actions against power plants in several states for failure to meet emission limits for particulate matter, including the Martin Lake, Fayette, and Welsh plants in Texas, the Chalk Point plant in Maryland, and the Hatfield’s

Ferry Plant in Pennsylvania. These actions have highlighted how little emission standards mean absent effective monitoring to assure compliance.

8. EIP also frequently authors reports that document the amount of pollution from specific power plants, identify emission trends, and rank sources of pollution. These reports are based on emissions data submitted by power plants and collected by EPA and other government agencies, and their value depends on the accuracy of such data.

9. The MATS rule establishes particulate matter emission limits as a surrogate for control of non-mercury metals, but does not require the monitoring needed to assure compliance with that standard. More specifically, the rule includes a parametric monitoring alternative that would allow the company to certify compliance based on emission levels higher than the MATS rule allows. Other options would allow sources to demonstrate compliance through stack tests conducted as infrequently as once every three years, which is plainly inadequate to enforce limits that must be met based on a 30 day rolling average. These deficiencies are compounded by EPA's decision to allow the limits established under the MATS rule to be met by averaging emissions



from multiple units within the same facility, which would require evaluating a more complex combination of data from different units.

The MATS rule anticipates that monitoring deficiencies will be remedied through improvements to Clean Air Act (Title V) operating permits.

10. The MATS rule hinders EIP's organizational interest in effective enforcement of environmental law. More specifically, it would require EIP to invest considerably more resources:

a) reviewing and objecting to Title V permits in the hope of correcting monitoring deficiencies created by the MATS rule, and litigating over whether such improvements can actually be required under Title V;

b) determining what types of "credible evidence" can be used to determine whether sources subject to the MATS rule have violated permit limits for non-mercury metals because the ineffective monitoring required under the rule will not provide reliable information about emissions of these pollutants;

c) analyzing and preparing reports on emissions of non-mercury metals from power plants, since the lack of monitoring data under the

MATS rule will force EIP to find more reliable data upon which to base its reports.

11. If the deficiencies in the MATS rule were remanded, EPA could strengthen the monitoring requirements in accordance with the Clean Air Act. EPA's revision of the MATS rule to comply with the requirements of the Clean Air Act would allow EIP to use its limited resources to continue our work to ensure effective enforcement of environmental laws, educate the public on power plant pollution, and represent communities harmed by power plant pollution.

I declare, under penalty of perjury, that the foregoing is true and correct.

Executed on this 23rd day of October, 2012, in Washington, District of Columbia.

A handwritten signature in black ink, appearing to read "Eric Schaeffer", written over a horizontal line.

Eric Schaeffer, Executive Director  
Environmental Integrity Project



*August 27th 2012***DECLARATION OF JOANNE PANNONE**

I, Joanne Pannone, declare as follows:

1. My name is Joanne Pannone. I am over 18 years of age. The information in this declaration is based on my personal experience, and review of public information in government records.
2. I live in Mercer County, New Jersey. My current address is 215 Meadowbrook Road, Robbinsville, New Jersey 08691. I have lived at this address for 25 years.
3. I am a member of the Sierra Club. I joined the Sierra Club in November 2008. I joined the Sierra Club to help bring awareness to environmental problems such as Marcellus Shale fracking and the air and water quality impacts from nuclear and coal-fired power plants in my area.
4. The Sierra Club is a nationwide non-profit environmental membership organization, which has its purpose to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.

5. I live approximately 67 miles from GenOn Rema, LLC's Portland Generating Station.
6. I have two grandchildren, aged 7 and 9, and I frequently babysit them while their parents work. My grandchildren spend large portions of the summer with me and I love to spend our time outdoors. I have fished my whole life and enjoy fishing with them. Both of my grandchildren suffer from asthma.
7. I am a Wildlife Conservation Corps Volunteer. I have an interest in birds, fish, wildlife and the outdoors. I also volunteer at the New Jersey Division of Fish and Wildlife's Pequest Trout Hatchery and Natural Resource Education Center, located about six miles south of the Portland Generating Station, where I teach school-aged children how to fish. We usually have 50-60 children at a time for fishing lessons and touring the hatchery.
8. In addition to my time at the Pequest Center, I also enjoy visiting the surrounding area for paddling trips on the Delaware River and overnight camping trips with friends.
9. I understand that the EPA has determined that mercury and other toxic air pollutants are linked to a range of negative impacts to human

health and the environment. I know that mercury can damage children's developing nervous systems, which can reduce their IQ and impair their ability to think and learn. I also know that toxic air pollution from coal plants, such as metals like arsenic, chromium, and nickel, cause cancer, and acid gases cause lung damage and contribute to asthma, bronchitis and other chronic respiratory disease, especially in children. Additionally, I know that sulfur dioxide and particulate matter pollution from coal plants are linked to heart attacks, bronchitis cases and asthma episodes.

10. Acid gas, sulfur dioxide and particle pollution from the Portland coal plant impacts me negatively. I have taken my grandchildren to the Pequest Center twice. On both occasions, we had to leave when one of my grandchildren began to have signs of an impending asthma attack: reddening eyes and difficulty breathing.

11. I am very concerned about air pollution, including mercury, other metals, acid gases, sulfur dioxide and particulate matter from the Portland and other coal plants. I worry about the impacts from mercury to my health, my grandchildren's health and to the health of the children that I teach at the hatchery who may eat the fish that they are learning

to catch. I also worry about the negative impacts to my health, my grandchildren's health and the health of the children that I teach from the non-mercury metals, acid gases, sulfur dioxide and particulate matter emitted by the Portland plant.

12. My concerns about the impacts to the health of my grandchildren from coal plants' sulfur dioxide, particulate matter, mercury, metals and acid gas pollution prevent me from bringing them to the Pequest Center and to places on the Delaware River and sharing with them these activities and places that I enjoy.

13. Additionally, knowledge that the air pollutants emitted from the Portland plant into the surrounding area are negatively affecting the fish at the hatchery and the surrounding environment lessens my enjoyment of visits to the Center and the Delaware River.

14. I understand that in February 2012, EPA published the Utility Mercury and Air Toxics Standards ("MATS Rule"), which limits the amount of mercury and other air toxics which may be produced by new and existing coal-fired power plants.

15. If the MATS Rule is implemented, I will benefit from the new pollution standards. The Rule will reduce emissions of mercury, acid gases

and other air toxics from new and existing coal plants, as well as particulate matter and sulfur dioxide, helping to protect my health, my grandchildren's health, the health of the children I teach at the hatchery, the public health and the environment. I therefore want the MATS Rule to go swiftly into effect. If the MATS Rule is set aside or delayed, however, I will be denied those benefits.

16. I am also very concerned about emissions of dioxins and other organic air toxics, like formaldehyde, from the Portland Generating Station. I understand that such toxics bio-accumulate, causing harm to the food chain and the environment, and that they can also cause cancer and other adverse health effects in adults and children even in very small quantities.

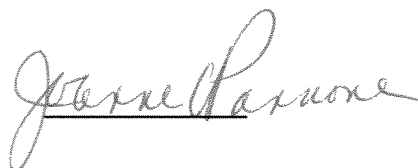
17. I understand that power plants are capable of limiting their emissions of dioxins and other organic toxics to very low levels; however, the MATS Rule sets work practices, instead of numerical limits, to lower those emissions. If EPA imposes a numeric emissions standard for dioxins and other air toxics, I, my grandchildren and the children I teach at the hatchery would be exposed to lower quantities of those pollutants.

18. As a result of EPA's failure to include a numeric emissions standard for dioxins and other organic air toxics, I am unable to obtain the precise information regarding organic toxics pollution from the Portland Generating Station, information that would enable me to better educate and protect myself, my grandchildren, and others, from that pollution.

I certify, under penalty of perjury under the laws of the United States of America, that the foregoing is true and correct.

Executed on:

August 27<sup>th</sup>, 2012.

A handwritten signature in cursive script that reads "Joanne Pannone". The signature is written in dark ink and is positioned above the printed name.

Joanne Pannone

**DECLARATION OF MARILYN WALL**

I, Marilyn Wall, declare as follows:

1. My name is Marilyn Wall. I am over 18 years of age. The information in this declaration is based on my personal experience, and my review of public information in government records.
2. I live in Hamilton County, Ohio. My current address is 816 Van Nes Drive, Cincinnati, OH 45246. I have lived at this address for over 19 years.
3. I am retired. Previously, I was a technical manager for an insurance company.
4. The Sierra Club is a nationwide non-profit environmental membership organization, which has its purpose to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.
5. I am a member of the Sierra Club. I initially joined the Sierra Club as a Joint Life Member in 1966. I joined the Sierra Club because I wanted to learn more about environmental issues and become an active volunteer for Sierra Club.

6. I have held numerous local, state and national leadership positions in the Sierra Club over the past nineteen years. Currently I am the Conservation Chair for the Club's local Miami Group.
7. Six existing coal-fired power plants are located within a 100 mile radius of my home. Those plants include Duke Energy's Miami Fort coal plant (approximately 25 miles), Indiana Michigan Power Company's Tanners Creek coal plant (approximately 32 miles), Duke Energy's Walter C. Beckjord coal plant (approximately 37 miles), Duke Energy's WH Zimmer coal plant (approximately 45 miles), Duke Energy's JM Stuart coal plant (approximately 85 miles) and Duke Energy's Killen Station coal plant (approximately 85 miles).
8. I often enjoy recreating in the outdoors. Circumstances permitting, I enjoy canoeing, kayaking and standup paddle-boarding approximately ten to fifteen times a month. I canoe, kayak or paddle-board at multiple places along the Ohio River and along the Little and Great Miami Rivers, Mill Creek and East Fork and Winton Woods Lake. I am often canoeing, kayaking and paddle-boarding in close proximity, in some cases within less than fifteen miles, of a number of existing coal plants.
9. I have long been concerned about the air quality where I live and recreate. I know that toxic air pollution from coal plants, such as arsenic,



chromium, and nickel, as well as acid gases and other metals, can cause cancer, respiratory illness, and other serious health effects and damage the environment. I am concerned about the impacts from existing coal plant pollution, including these toxics, to my health and the environment. This concern diminishes my enjoyment of both my day-to-day activities, as well as my recreational enjoyment of the Ohio River.

10. I am also concerned about mercury pollution from coal-fired power plants, and their effect on public health and the environment. The Ohio Department of Health has issued a state-wide health advisory warning against mercury contamination of fish caught from all waterbodies in Ohio. In the past, I have enjoyed taking my nephews fishing, but I stopped doing so because of my concerns about mercury contamination in the fish we catch. My concerns about mercury pollution further inhibit my enjoyment of Ohio's waterbodies.

11. In the past while recreating in the area I have observed very dark smoke rising from the smokestacks of the Miami Fort coal plant and yellowish, sulfur-colored smoke rising from the smokestacks at the Beckjord coal plant. Knowing the potential impact of this pollution on my health and that of my family, is very disturbing to me and negatively impacts my aesthetic enjoyment of the area.

12. I understand that, according to the EPA, power plants are the largest U.S. source of several harmful pollutants. I understand that they are responsible for 77 percent of acid gas emissions as well as a leading source of toxics such as arsenic, nickel, selenium and hexavalent chromium. Power plants are, moreover, responsible for half the man-made mercury pollution in the United States.
13. I understand that in February 2012, the U.S. Environmental Protection Agency (EPA) published the Utility Mercury and Air Toxics Standards (“MATS Rule”), which limits the amount of mercury and other air toxics which may be produced by new and existing coal-fired power plants.
14. If the MATS Rule is implemented, I will benefit from the new pollution standards. The Rule will reduce emissions of mercury, acid gases and other air toxics such as arsenic, nickel, selenium and hexavalent chromium from new and existing coal plants, as well as particulate matter and sulfur dioxide, helping to protect my health, the public health and the environment. I would feel much better if the health threat from these utilities was eliminated. These utilities are very large contributors to poisons that hurt and kill people. I therefore want

the MATS Rule to go swiftly into effect. If the MATS Rule is set aside or delayed, however, I will be denied those benefits.

15. I am also very concerned about emissions of dioxins and other organic air toxics, like formaldehyde, from the six existing coal-fired power plants are located within a 100 mile radius of my home. I understand that such toxics bio-accumulate, causing harm to the food chain and the environment, and that they can also cause cancer and other adverse health effects in adults and children even in very small quantities.
16. I understand that power plants are capable of limiting their emissions of dioxins and other organic toxics to very low levels; however, the MATS Rule sets work practices, instead of numerical limits, to lower those emissions. If EPA imposes a numeric emissions standard for dioxins and other air toxics, I, my family and the public would be exposed to lower quantities of those pollutants.
17. As a result of EPA's failure to include a numeric emissions standard for dioxins and other organic air toxics, I am unable to obtain the precise information regarding organic toxics pollution from the six coal-fired power plants in my area, information that would enable me to

better educate and protect myself, my family, and others, from that pollution.

18. I understand that the Miami Fort, Tanners Creek, and Stuart power plants include three-to-six adjacent, existing, coal-fired boiler units, under common ownership, at each plant. By allowing those units to comply with the MATS Rule's standards on a combined, average basis instead of individually, EPA has decreased the stringency of the pollution-reduction requirements applicable to those plants, allowing them to emit higher quantities of acid gases and particulate matter. I understand that, according to the EPA, short-term exposure to high levels of acid gases and particulate matter can cause significant harm.
19. If the MATS Rule did not allow such averaging, the harm to which I, my family and the public are now exposed would be prevented. If the averaging provision in the Rule is withdrawn or amended, I would be less concerned with impacts to my health and the health of my family and would recreate in the areas surrounding my home more often.

I certify, under penalty of perjury under the laws of the United States of America, that the foregoing is true and correct.

Executed on: October 4, 2012.

A handwritten signature in cursive script that reads "Marilyn Wall".

Marilyn Wall